

MPC BIBLE 3

THE DEFINITIVE STEP-BY-STEP COURSE FOR ALL STANDALONE MPCs RUNNING MPC3



BY ANDY AVGOUSTI (MPC TUTOR)

THE MPC BIBLE 3

For All Modern Standalone MPCs Running MPC3

Written By Andy Avgousti (MPC Tutor)

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Compatibility: **MPC Firmware 3.4.3**

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CONTENTS

000 HOW TO USE THIS COURSE	21
Which MPCs Are Compatible With This Course?	21
How To Use This Book	21
Conventions Used in This Book	23
Recreating the Tutorial Examples	24
Reading the Book on Mobile Devices	24
Feedback & Support	24
SECTION A	25
MPC CRASH COURSE	
A01 FIRST STEPS: HOOKING UP & HOUSEKEEPING	26
What Is an MPC?	27
Getting Wired	27
Loading a Demo Project	29
Updating Your Firmware	32
Register Your MPC	36
Recommended Preferences Changes	37
A02: TRANSFERRING CONTENT TO YOUR MPC	42
MPC Disk Setup	42

Connecting Your MPC Disk to a Computer	45
Installing Your First MPC Expansions	49
Organising Your MPC Disk	50
Returning to Standalone Mode	52
Installing Your Free Plugins	53
A03: CORE MPC TERMINOLOGY	57
Starting a New Blank Project	57
What Is a Project?	59
Anatomy of a Sequence	68
Core Sequence Settings	69
Understanding 'Sequence Time'	73
What Are Sequencer Tracks?	76
Loading a Drum Kit to a Track	79
Using the Sounds Browser	80
Previewing Drum Kits	86
A04: RECORDING A DRUM BREAK	93
Understanding MIDI	94
Real Time Recording Settings	96
Arming the Track	105
Recording the Drums	105
Creating a Hi Hat Pattern With NOTE REPEAT	106
Adding Kicks & Snares	108
Dealing With Mistakes	109

Overdubbing Individual Events	110
Removing Events With ERASE	112
Viewing MIDI Events in the Arrangement Tab	113
Save Your Work in Progress	114
Loading MIDI Patterns to a Track	114
A05: ADDING INSTRUMENT TRACKS	122
Returning to a Previous Project	122
Adding a New Track	127
Using Pad Perform	134
Recording The Bass Line	138
Adding A Piano Track	141
Recording Piano Chords	148
Changing The Bass Sound	149
Adding Layers	150
Adding a Melody	155
The Next Steps	161

SECTION B

CORE MPC SKILLS

B01: BUILDING A DRUM KIT	165
Loading and Assigning Samples to a Kit	165
Loading Samples Into a Project	169
Loading Multiple Sounds to the Pool	177
Setting the Pad Colours	180

Using the Pad Mixer	187
Workshop: Using Q-LINKs	205
B02: DRUM KIT EDITING PART 1	210
Editing Sample Layers in MAIN	210
Editing Drum Kits in Track Edit	214
Changing Layer Edit Points	216
Changing Sample Layer Pitch ('Tune')	221
Layering Drum Sounds	222
Layering the Kick	229
Layer Offset	232
Tuning An Entire Pad	235
Setting Up Hi Hat Muting	237
Shaping Pad Volume With the Amp Envelope	239
Finishing Up	247
B03: SEQUENCING WITH GRID VIEW	248
Grid VIEW Overview	248
Using the Grid Tools	254
De-Cluttering The Grid	261
Editing Events in Grid View	263
Deleting & Cutting Events	267
Editing Velocity	272
Modifying Velocities of Multiple Events	276
Applying Swing	280

Using a Natural Feel With Humanise	286
Workshop: Menu Customisation & Shortcuts	291
B04: DRUM KIT EDITING PART 2	299
Adding Drum FX	299
Applying Insert FX to Pads	304
Using FX Racks	315
Band Boost Filtering	320
Advanced Layering With Simultaneous Play	323
Randomisation	327
B05: SAMPLING TECHNIQUES	335
Setting Up a Vinyl Sampling Session	336
Sampling External Audio	337
Configuring the MPC Sampler	338
Traditional Vinyl Sampling Workflow	347
The Pad Hold Hack	351
Sample-To-Pad Workflow	353
Viewing The Sample Pool	357
B06: SAMPLE MANIPULATION	363
Working With Raw Samples	363
Setting the End Point	373
Topping & Tailing	376
Creating a Melodic Pad	379
Adjusting the ADSR Envelope	381

Removing Hiss & Noise	384
Using the Pitch Envelope To Add Attack	385
Using TAIL To Add a Smoother Sample End	387
Working With Pitch	389
Adding Drum FX	391
Using the AHDS Envelope	396
Processing a Pad Region	400
Using DeDelay To Create a Fuller Pad Sound	403
Chaining FX	404
Saving FX Racks	411
Using the LFO	411
Removing Samples From Tracks & Projects	415
A Quick Pad Mix	418
B07: CRAFTING THE INITIAL THEME	419
Using the XL Channel Strips	420
Laying Down Some Ideas	424
Adding Melodic Lines	427
Creating Melodic Lines With 16 Levels	431
Viewing 16 Level MIDI Events	433
Editing Data in LIST EDIT	438
Adding Multiple Modifiers	440
Adding Probability	441
B08: BUILDING A SIMPLE KEYGROUP INSTRUMENT	444

What Is a Keygroup Instrument?	444
Setting the Correct Sample KEY	449
Recording a Bass Line With Pad Perform	451
Extending Sequence Length	455
Adding Variation Via GRID VIEW	457
B09: USING AUDIO TRACKS	463
What Is an Audio Track?	464
Editing Audio Regions	470
Changing Audio Speed	477
Adding Back the 'Air'	483
Editing the Second Half	487
Workshop: Disk Streaming Audio Tracks	493
B10: CREATIVE FX & AUTOMATION	498
Using Send FX	498
Using Return Tracks	500
Adding Vocal Cuts	507
Inserting the First Vocal Cut Event	510
Using the Filter To Create a Radio Effect	510
Creating a Cut With MIDI Delay	512
Using Automated FX	515
Adding a Stutter Effect as a Track Insert	518
What Is Automation?	521
Viewing & Editing Audio Track Automation	525

Adding Panning Automation	528
Viewing Track Automation in LIST EDIT	530
B11: SONG BUILDING WITH THE ARRANGER	532
What Is a 'Song'?	532
The 'Linear' Song Building Workflow	534
What Is Arrangement?	535
Introduction to the Arranger	536
Arranger Overview	538
Track Management in the Arranger	541
Creating the Basic Song Framework With Sequence Edit	546
Sequence Parameters in Arrange	546
Experimenting With Track Mutes	549
Audio Mutes vs Event Mutes	552
'Launch Quantizing' Mutes	554
Grouping Tracks	555
Soloing Tracks	558
Subtractive Arrangement Ideas	560
Defining Song Sections With Locate Points	561
Subtractive Arrangement With ERASE	568
Editing the Verse	579
Creating the Bridge & Solo	581
Adding 'Back' a Drum Fill	584
Workshop: Subtractive Arrangement With Track Mutes	588

B12: INSTRUMENTAL ARRANGEMENT TECHNIQUES	595
Adding a New Plugin Track	596
Using the Arpeggiator	598
Recording An Arpeggiated Solo	602
Adding Filter Automation to the Lead	610
Adding A Riser	618
Adding Pan Automation	627
Adding an Ending	631
Extending the Solo	638
Using 16 LEVEL 'Filter'	642
Adding Additional Drums & Variations	644
Using Pad Mutes	644
B13: MIXING & EXPORTING	648
What Exactly Is Mixing?	648
Using The Channel Mixer	649
Adjusting EQ	659
Adding Colour to the Drums	665
Mixing the Bass	669
Adding a Noise Gate to the Vocals	673
Vocal EQ	675
Vocal Compression	676
Creating a Vocal Submix	677
Mixing the Lead	684
Mixing Options for the 'Melodic' Drum Tracks	687

Automating Pad Volume	689
Adding Mix Buss FX	690
Creating Audio Mixdowns	696
Separating Tracks	700

SECTION C **705** **INTERMEDIATE & ADVANCED TECHNIQUES**

C01: WORKING WITH LOOPS	706
What Is a Sample Loop?	706
Creating a Drum Loop From a Break	708
To Discard or Not To Discard? That Is the Question	715
Loop Tempo	718
How to Use Sample Loops in Sequences	722
'Note on' Loops	726
Manipulating the Tempo of Loops	733
Pros and Cons of Warping	736
Warping vs Time Stretch	736
Changing Tempo By Tuning	739
Adding Tempo Change Events	745
Looping Melodic Samples	749
Adding Loops to Audio Tracks	753
Dealing With Problematic Loops	755
Time Stretching Melodic Loops	758
C02: CHOPPING TECHNIQUES	763

What Is Chopping?	763
Chopping a Melodic Loop	764
Editing Slices	769
Converting Slices	772
Recording With our Slices	778
Adding Some FX	780
Threshold Slicing	783
Extending Chop Length	789
Adjusting Pad Parameters	798
Matching Key	798
Creating a Chopped Melody	800
C03: WORKING WITH HARDWARE SYNTHS	803
Using MIDI With Your MPC	803
Connecting a Hardware Synth Via MIDI	804
Configuring Sequence Tracks For MIDI Hardware	808
Routing Synth Audio to Your MPC	813
Setting Synth Presets From The MPC	818
Recording External Synth Audio	823
Recording Synths With the Sampler	828
MIDI Connections for Multiple Synths	831
Audio Connections for Multiple Synths	835
Recording Multiple Synths Simultaneously	836
A More Flexible Alternative to Audio Tracks	840
Workshop: Working With MIDI Controllers	841

C04: AUTOSAMPLING	863
Autosampling Hardware Synths	863
Initial Set Up	865
Autosampler Settings	867
Editing Auto Sampled Instruments	876
Anatomy of an Autosampled Instrument	878
Adjusting the Amp Envelope	883
Adding Filter Modulation	888
Adding a Second Filter	891
Adding Track FX	896
Saving Your Autosampled Instruments	898
Sustain Looping Samples	902
Alternating Loops	907
Configuring Sustain Loops in an Instrument	909
Autosampling Internal Plugins?	912
C05: MULTISAMPLING 'NON MIDI' INSTRUMENTS	913
Recording Traditional ('Non-MIDI') Instruments	913
The Multisampling Process	914
Choosing the Recording Method	915
Configuring the SAMPLER	916
Recording to Audio Tracks	919
Editing Your Multisampled Recordings	920
Building the Keygroup Instrument	925
Editing the Instrument	933

Adding Controllable Vibrato	935
Controlling Vibrato With a Q-LINK	937
Pitchbend Control	939
LFO Control With a Custom Q-LINK Macro	941
Adding Multiple Parameters to a Single Q-LINK Macro	948
Q-LINK Controllable Instrument FX	951
Incorporating Round Robins	956
Adding String Releases	959
Adding Release Noise Probability	961
C06: ADDING LAYERS & COMPLEXITY	964
Adding an Analog Synth Layer	964
Introduction to the Mod Matrix	972
Modulating With the Aux Envelope	978
Adding a Vocal	984
Scales Vs Modes	988
Fixing Vocal Performances With the Vocal Tuner	991
Enter The Bass	994
Adding a Plugin Layer	998
Sound Browser 'Favourite Presets'	1001
Adding Additional FX to a Plugin Track	1003
C07: BUILDING DRUM KITS FROM CHOPS	1007
Region Chopping Breaks	1007
Threshold Chopping Breaks	1010

Converting Your Slices	1017
Sorting & Discarding Chops	1022
Chopping Another Break	1030
Mute Groups Vs Mute Targets	1039
Randomisation	1041
Adding Tail	1044
C08: ADVANCED DRUM KIT SOUND DESIGN	1048
Splicing Samples Together With Audio Tracks	1048
Adding Multi Velocity Articulations	1056
Combining Velocity Layers & Round Robins With Slice Motion	1065
Tuning Pads Using Pad Scene Q-LINKS	1069
Adding Pad FX	1072
Adjusting Track FX	1077
Laying Down Some Drums	1080
C09: SONG MODE WORKFLOW	1088
Song Mode Vs Linear Song Building	1088
Building Individual Sequences	1089
Using Slice Motion on Vocal Chops	1091
Planning a Subtractive Arrangement	1102
Erase or Mute?	1105
Using NEXT SEQUENCE for Arrangement Ideas	1107
Creating an Arrangement With Song Mode	1109
Converting Songs	1116

Editing the Linear Arrangement	1119
Manipulating FX With the XY-Pad	1121
Using the XYFX Plugin	1132
Exploding Tracks	1138
Separating Tracks With 'Drum Pads as Stems'	1140
Exploding Tracks in Your Sequence	1142
Using Submixes to Save Resources	1147
D01 MPC2 PROJECT MIGRATION GUIDE	1153
Understanding Unified Tracks	1153
Changes to 'Programs'	1156
Simple MPC2 Project Migration Example	1157
Projects With Multiple Sequences	1160
Live Set or 'Multi-Song' Projects	1166
Sequences With the Same Kit on Multiple Tracks	1171
Limitations of MIDI 'Send To' Tracks	1178
Converting 'Send To' Tracks	1179
Project Import Checklist	1183
D02 PROJECT & SEQUENCING FAQS	1185
How Do I Delete a Sequence?	1185
How Do I Reorder Sequences?	1185
How Do I Perform Over a Muted Track?	1186
After Loading a Project my Samples Are Silent!	1186
Can I Group Pads Together When Exploding a Track?	1187

How Do I Get a Longer-Count in Before Recording?	1188
How Do I Run More Than 8 Plugin Tracks?	1189
I Forgot To Hit Record, Can I Capture What I Was Playing?	1189
I Can't See my 'Retrospective Record' Events!	1190
How Do I Try Different Kits or Instruments on an Existing Track?	1191
How Do I Completely Erase a Track?	1192
How Do I Erase Specific Events?	1192
D03 TRACK & SAMPLE EDIT FAQS	1194
What Is the 'Classic MPC' Note Layout?	1194
Clip-Style Loop Toggles	1197
How Do I Re-Tune an Entire Pad?	1201
Why Am I Seeing Individual Slices in SAMPLE EDIT > TRIM?	1203
Why Are Some Process Options Not Available in SAMPLE EDIT?	1204
Why Are my Pads Cutting Each Other Out?	1205
How Do I Fine Tune a Plugin?	1206
How Do I Tune a Keygroup Instrument With the Tuner?	1206
Can I Overdub to an Audio Track?	1208
D04 FILE MANAGEMENT FAQS	1210
How Do I Move Files Off the Internal Disk?	1210
Can I Use Disk Streaming on Instruments and Kits?	1211
Can I Save Memory Using MP3s or Other Compressed Files?	1211
How Do I Install an XPN Expansion in Standalone?	1211
Why Don't my Browser 'Folder' Shortcuts Work?	1212

What's the Difference Between an 'XPM' and 'Track' File?	1212
Can I Load MPC3 Projects in MPC Software 2?	1213
What Is Sample Tagging?	1213
Does Purging Delete Samples From my Disk?	1215
How Do I Reduce the Disk Storage Space Used by Projects?	1216
D05 MAKING BROWSER PREVIEWS	1219
How Do I Make Browser Previews?	1219
Adding a Project Preview	1220
Adding a Track Preview	1221
Creating Previews for Other File Types	1227
D06 HARDWARE & SYSTEM FAQS	1230
What Does 'Reset Preferences' Actually Do?	1230
So, How Do I 'Factory Reset' my MPC?	1230
How Do I Manually Update my Firmware?	1231
Which Firmware Update Method Is Safest?	1234
What Happens if I Brick my MPC After a Firmware Update?	1235
Can I Downgrade to MPC2?	1236
MPC One Ethernet – How Do I Get Online?	1236
What Is the MPC Software?	1237
What Is Controller Mode?	1238
APPENDIX A: ESSENTIAL SHORTCUTS & PREFERENCES	1239
Button Combination Shortcuts	1239
'Button Hold' Shortcuts	1240

Recommended Browser Shortcuts	1240
Recommended Preferences	1241
APPENDIX B: AUDIO CONNECTION GUIDE	1243
MPC Audio Connections	1243
Using Audio Interfaces & USB Mixers	1250
Sampling From Turntables	1254
Sampling From Phones & Portable Devices	1255
Recording From Microphones	1257
Recording Guitars	1258
APPENDIX C: ADDITIONAL RESOURCES	1260
Essential MPC Resources	1260
Samples Used in the Tutorials	1260
Acknowledgements	1261
APPENDIX D: RELEASE HISTORY	1262

000 HOW TO USE THIS COURSE

WHICH MPCS ARE COMPATIBLE WITH THIS COURSE?

This edition of 'The MPC Bible 3' has been written to be compatible with the following standalone MPC models running **MPC firmware 3.4.3**:

MPC Live, MPC Live 2, MPC X, MPC X SE, MPC One, MPC One+, MPC Key 61, MPC Key 37

The course is also compatible with any limited or special edition variants (e.g. MPC Live 2 Retro).

Please note that throughout the book I will often just refer to the base model (e.g. MPC One) rather than also listing any model variants (e.g. MPC One+, MPC One Retro etc), unless the variant has a unique feature that affects the tutorial currently being discussed.

HOW TO USE THIS BOOK

I have carefully structured the course so concepts and techniques are gradually introduced in a logical way, so ideally you should follow the course from beginning to end, without skipping bits!

If you do need to find help of particular topic, you can use the built in search function of your PDF/Ebook reader to search for a keyword or key phrase (e.g. 'arranger') and this will return all the pages that mention that phrase.

Section A is an introduction to basic MPC concepts where we'll build a simple multitrack sequence with minimal menu diving. **Section B** is a complete song project based around a 'linear' workflow and is used to teach core MPC features and intermediate skills. **Section C** uses the framework of the classic 'song mode' workflow to introduce more advanced concepts and techniques.

My focus is to show you how the MPC can be used to create music with practical, hands-on examples to help explain all concepts and techniques. I provide all the files you'll need to recreate every single project along with a 'completed' version of the project that you can load and examine.

At the end of some chapters you might find an additional 'Workshop' section. This is to be considered a brief 'aside' to the main course content and will expand on a topic or theme that was touched upon in the current chapter of the book.

Please remember that this course is focused on teaching creative workflows that utilise the best features of the MPC, I'm not attempting to cover every single feature available inside the machine (of which there are now thousands)! Ultimately this course is about showing you how to actually make music with an MPC and will happily work hand-in-hand with [Akai's official user guide](#).

CONVENTIONS USED IN THIS BOOK

To ensure the tutorials remain easy to follow I've used consistent formatting styles when referencing the various buttons, dials and touchscreen parameters:

- Physical buttons such as **[MENU]** are bolded and enclosed with square brackets.
- Some buttons feature a secondary function which is denoted by curly braces; for example; to perform a **{REDO}**, press **[SHIFT] + [UNDO]**
- Dials such as the **(DATA WHEEL)** and knobs such as **(Q-LINK 1)** are unbolted and enclosed in brackets.
- Software buttons *within* the touchscreen UI such as **ENVELOPES** and **COPY BARS** are bolded with an expanded letter spacing.
- Touchscreen parameters and values are bolded, for example; Tap on the **BPM** parameter and set a value of **120.0**



An aside is used to highlight useful information such as tips, shortcuts, preference settings and so on.

RECREATING THE TUTORIAL EXAMPLES

Every tutorial in this course comes complete with all the files you need to recreate the tutorials as you read through them. All these files can be found in the '**MPC Bible 3 Project Files**' Expansion which was included in the 'zip' archive you downloaded after buying this course. You'll learn how to transfer this expansion to your MPC in the first section of the course.

READING THE BOOK ON MOBILE DEVICES

If you want to read the book on a more portable device such as a tablet, smartphone or ebook reader then I would suggest you use the EPUB version of the book found in the '**EPUB Version**' folder (contained within the original zip file you downloaded). For more how to transfer an ebook to a mobile device, please refer to my article here: <https://www.mpc-samples.com/article/install-mpc-ebooks-any-device>

FEEDBACK & SUPPORT

Developing this course is an epic task and I'm constantly evolving it and making improvements - if you have any feedback on the course, bug reports or suggestions for new tutorials [I'd really like to hear from you](#).

So, fire up your MPC and let's get cracking!

SECTION A

MPC CRASH COURSE

This section is for complete MPC newbies and assumes you have absolutely zero previous experience with MPC3. You'll learn how to quickly set up your MPC hardware, ensure the firmware is up to date and take a practical, hands-on tour of the MPCs essential features.

A01 FIRST STEPS: HOOKING UP & HOUSEKEEPING

In this tutorial I want to get you acquainted with your new beat making buddy, the Akai MPC. Whether you've got the entry level MPC One or the flagship MPC X SE, you now own the most powerful and feature-packed standalone beat making machines on the planet!

TOPICS COVERED IN THIS CHAPTER

- ✓ What is an MPC?
- ✓ Setting up your MPC in your studio
- ✓ Loading a demo project
- ✓ Updating the firmware
- ✓ Recommended preferences

Hopefully you're not feeling too daunted about this exciting music making journey because despite containing an unbelievable amount of features the MPC continues to provides us with some of the most intuitive and, most importantly, fun ways of making electronic music.

WHAT IS AN MPC?

A standalone MPC is effectively a custom-built, self contained computer system completely optimised for music production. It is capable of creating music entirely 'in the box' with no need for any external equipment, although is equally capable of connecting to a wide variety of external equipment and instruments to become a centralised MIDI and recording hub.

The MPC comes with a variety of built in controls that all contribute to the unique MPC workflow, including an array of buttons, dials and the famous MPC pads which can be used to trigger samples and play instruments.

GETTING WIRED

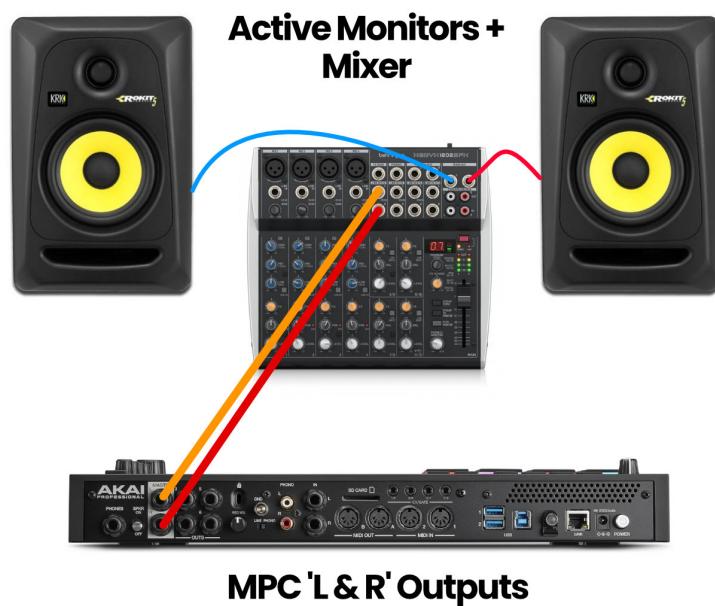
So you've opened your big brown 'Akai Professional' cardboard box and made your youtube 'unboxing' video. What's next? I guess you are itching to get the MPC booted up, so let's jump to that immediately.

First, find a place to set down your MPC and connect it to a wall outlet; or even better, connect your MPC to a **surge protected** outlet which will protect your MPC from any horrible surges on your supply.

Next up we need to work out how we're going to hear the sounds coming out of the MPC. Unless you have an MPC Live Mk 2 with its built in speakers the simplest way is to just plug a set of headphones into the headphone jack on your MPC. You can use any (wired) headphones you wish at this point, from high end studio monitors to cheap old wired ear buds - we're

just wanting to get something basic going for the moment, we can worry about high fidelity sound later.

Alternatively you can plug the MPC into your studio sound system using the dedicated 1/4" jack audio outputs at the back of the MPC. Here's a very typical audio set up using a mixer and active speakers:



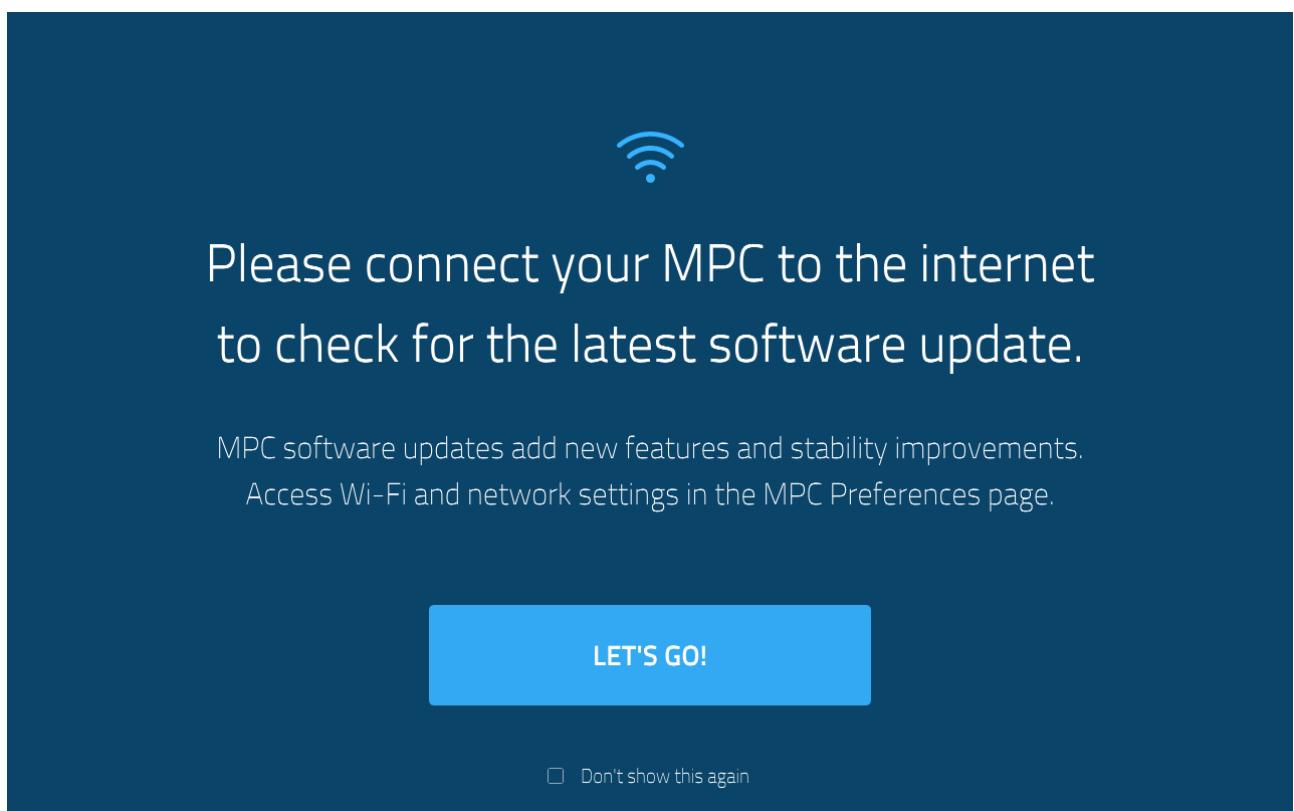
So sit down, get comfortable, press the power switch at the back of your MPC and wait for the MPC to boot up.



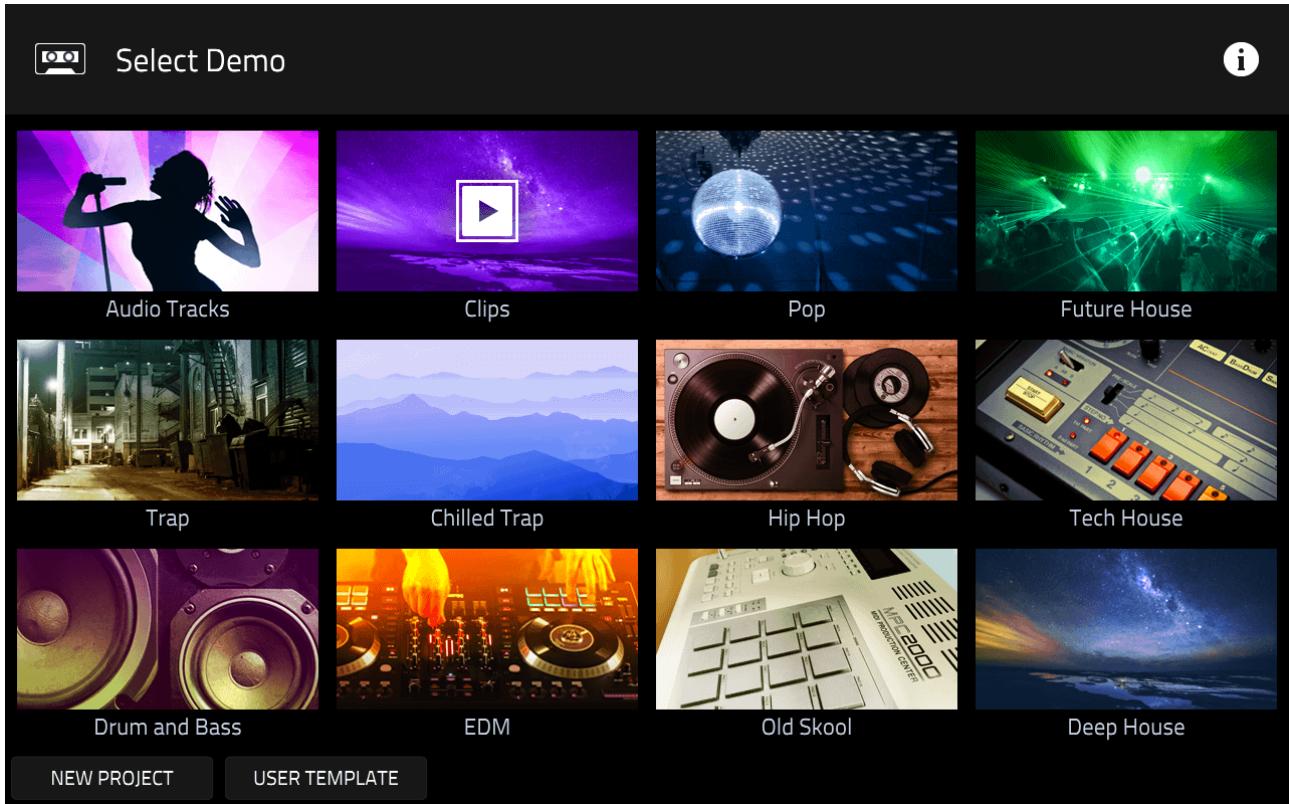
Head over to [Appendix B](#) for more detailed recommendations for integrating your MPC into a new or existing studio, including examples of different audio configurations.

LOADING A DEMO PROJECT

Upon booting up a new MPC, you'll probably see the initial '**Welcome to MPC**' followed by a blue screen advising you to connect to the internet for the latest software:

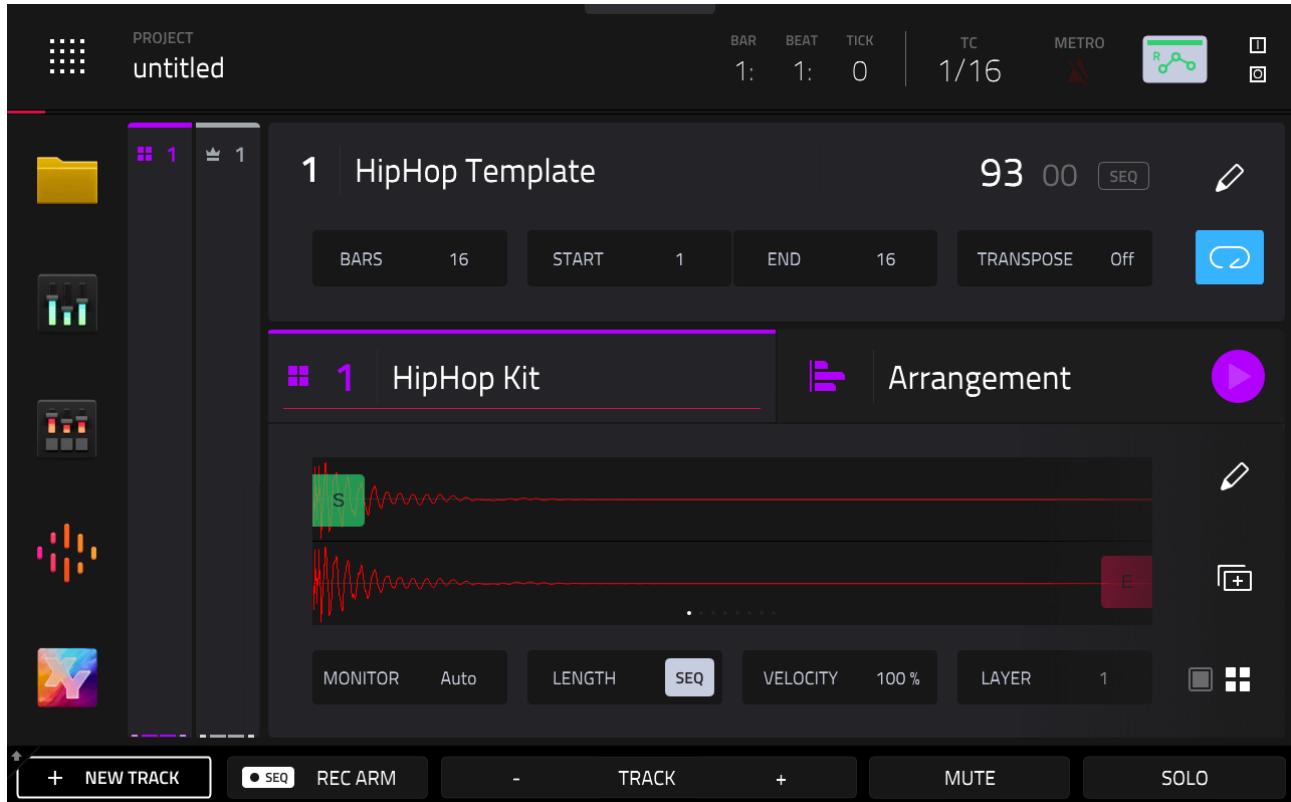


Tick the '**Don't show this again**' box and hit the '**LETS GO!**' button and you should see something along the lines of this:



This is the initial demo product screen which allows you to load a ready-made 'genre' demo project into your MPC. Each MPC model has its own unique set of demo projects but at this stage it doesn't matter, just load any demo by single tapping the image on your touchscreen. I'm going to select the '**Hip Hop**' demo.

Within a few seconds the hip hop demo will have loaded into your MPC and you should be taken to the **MAIN** screen. This is what the MAIN screen looks like for the Hip Hop demo on an MPC Live:



We'll be learning more about MAIN and all the elements that make up the MPC hierarchy in the next chapter of the course. For the moment, let's just take a listen to our demo project. Simply hit the **[PLAY START]** button on your MPC hardware:



If you cannot hear anything, make sure you've set up the audio connections correctly – remember to check out [Appendix B](#) if you need more detailed help with this. If using headphones, make sure the output volume control dial is not turned to the 'off' position.

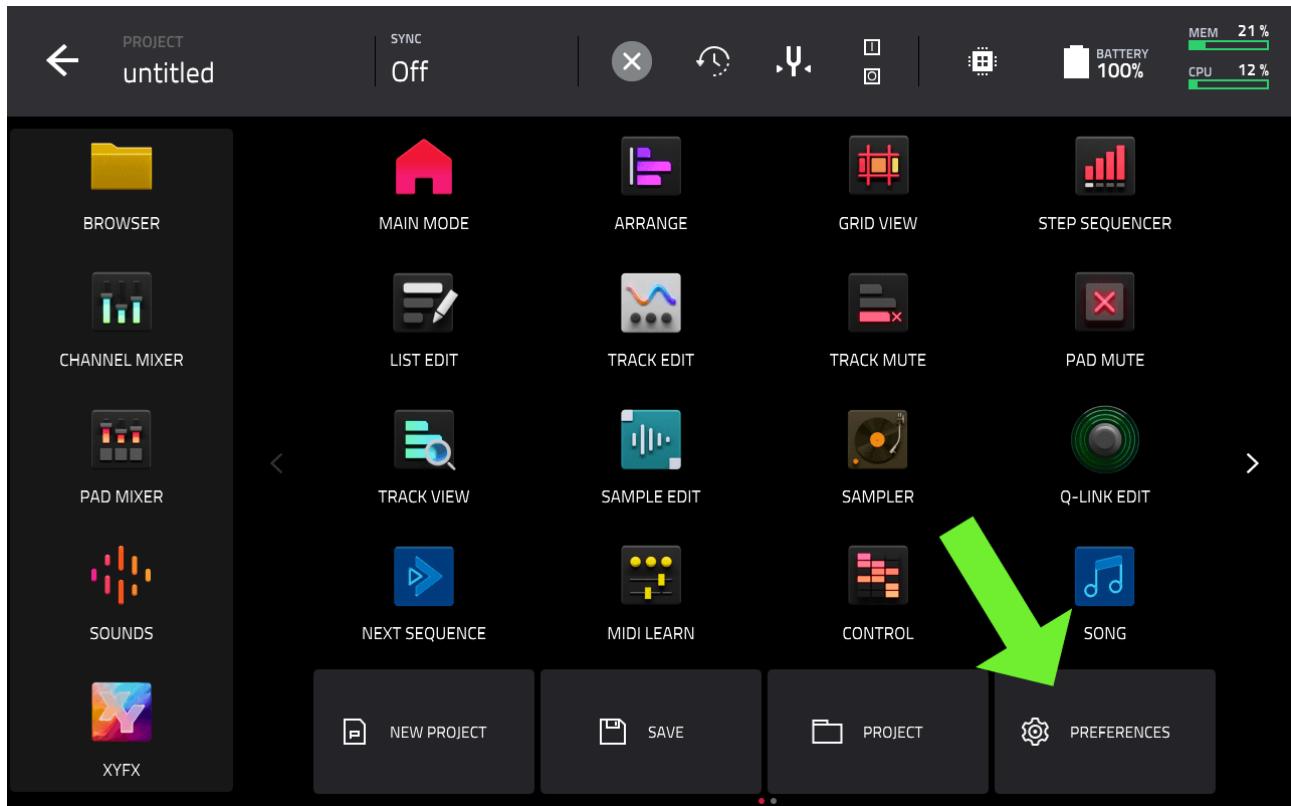
The demo will play on a continuous loop, so when you are done listening, just hit the **[STOP]** button on your MPC hardware.

So with our MPC working and outputting audio, it's time to perform a little housekeeping.

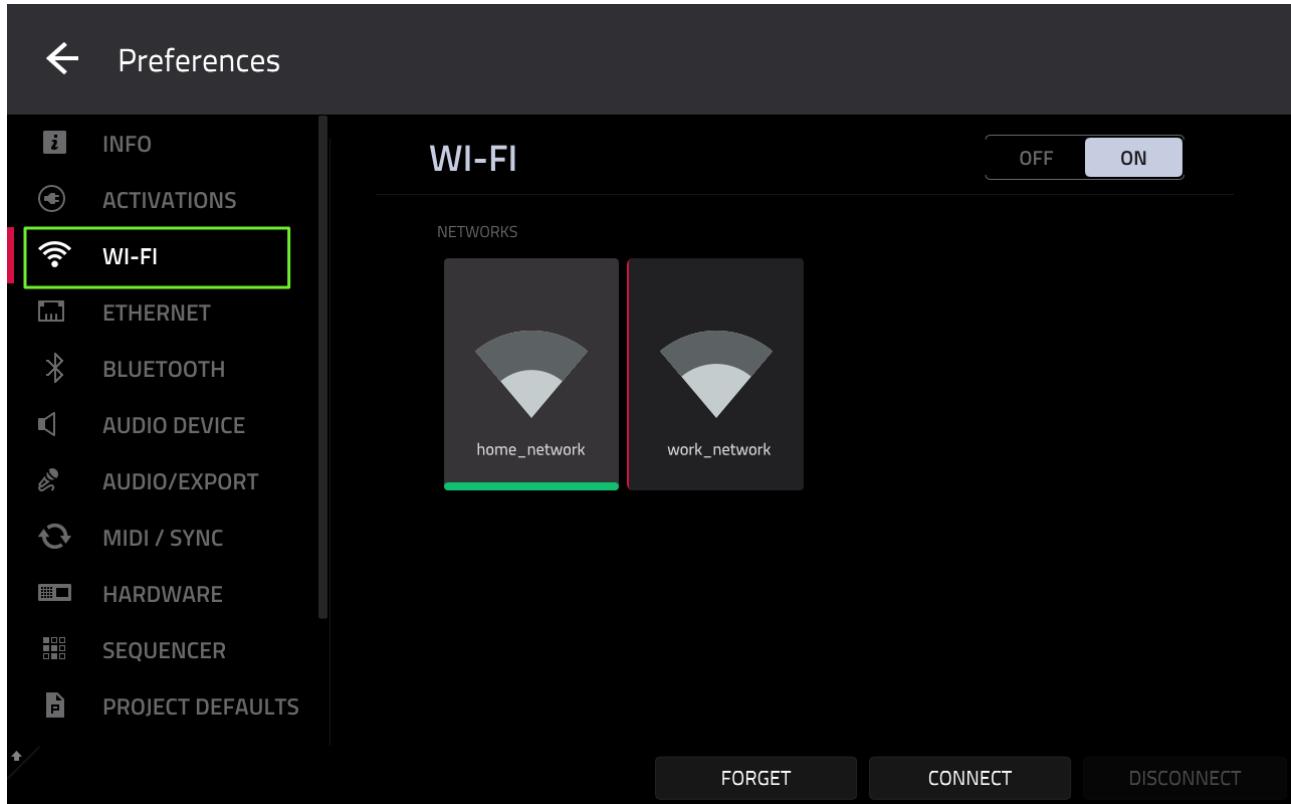
UPDATING YOUR FIRMWARE

From time to time Akai releases an updated firmware for your MPC which may add new features and fix bugs, so before we begin the course it's worth ensuring that your MPC is fully up-to-date. You can update your firmware using a number of different methods, but these days the easiest way is via the internet.

All MPC models have built in WIFI support except the original MPC One which uses an ethernet cable connection. Press the **[MENU]** hardware button to bring up the **MENU** screen:



Now select **PREFERENCES**. If your MPC supports WIFI tap on the **WI-FI** link on the left hand side of the screen:



Turn the WIFI switch '**ON**', tap on your WIFI network and single tap in the '**PASSWORD**' field to enter your password on the on-screen keyboard.

For owners of the original MPC One (not the 'plus' model) you'll need to connect one end of a standard ethernet cable to the port at the back of your MPC and the other end to the ethernet (LAN) port on your internet router.

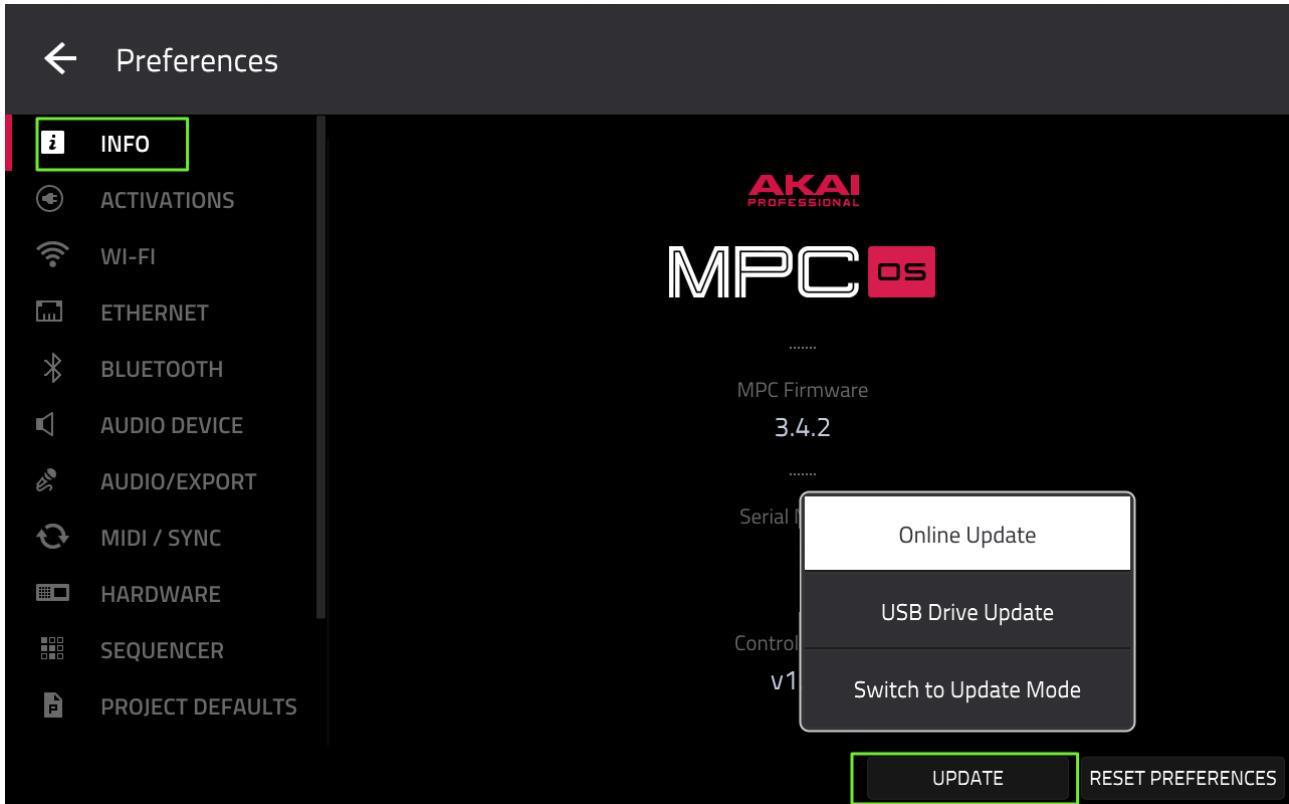
If you don't have access to an ethernet port in your studio then you can either temporarily move your MPC One near to your internet router or consider setting up a [Powerline network](#) which is a cheap, 'wires free' way to set up a household ethernet network.



*To check if an MPC One ethernet connection is working, go to [MENU] > **ETHERNET** - make sure the '**Enabled**' checkbox is selected (it may take a minute or so for the MPC to detect the active ethernet connection).*

Once your MPC is connected to the internet it should automatically check to see if a newer firmware version is available, typically upon boot up. If so you'll see a pop up asking if you would like to update your MPC firmware, in which case simply follow the on screen instructions.

Alternatively you can manually check if an online update is available - head back to [MENU] > **PREFERENCES** and make sure you have the '**INFO**' tab selected:



Hit the **UPDATE** button and select '**Online Update**'.

REGISTER YOUR MPC

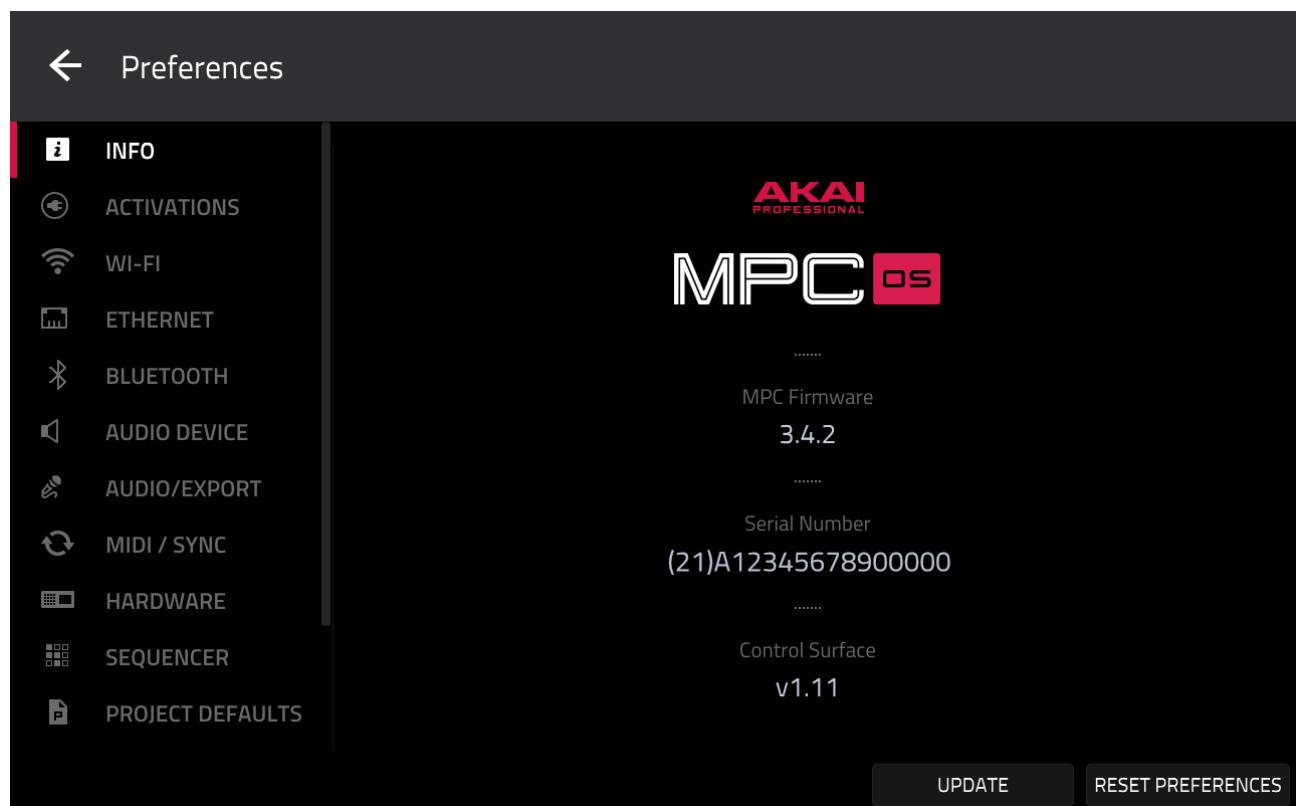
If you haven't already done so, I recommend you create an inMusic account and register your MPC. This will give you access to a bunch of free stuff including the MPC Software computer DAW as well as lots of additional plugins to use within your MPC. To register, go to the [Akai web site](#) and create an account (or log into an existing one). Once logged in, click on '**REGISTER NEW PRODUCT**' and register your MPC using the serial number on the underside of your unit – it's also shown on screen in **PREFERENCES > INFO**.

With your MPC registered you'll be able to download a bunch of free plugins to your MPC, and I'll explain how to do this in the next chapter after we set up your MPC disk(s).

RECOMMENDED PREFERENCES CHANGES

The next thing we should do is change a few of the MPC's default settings.

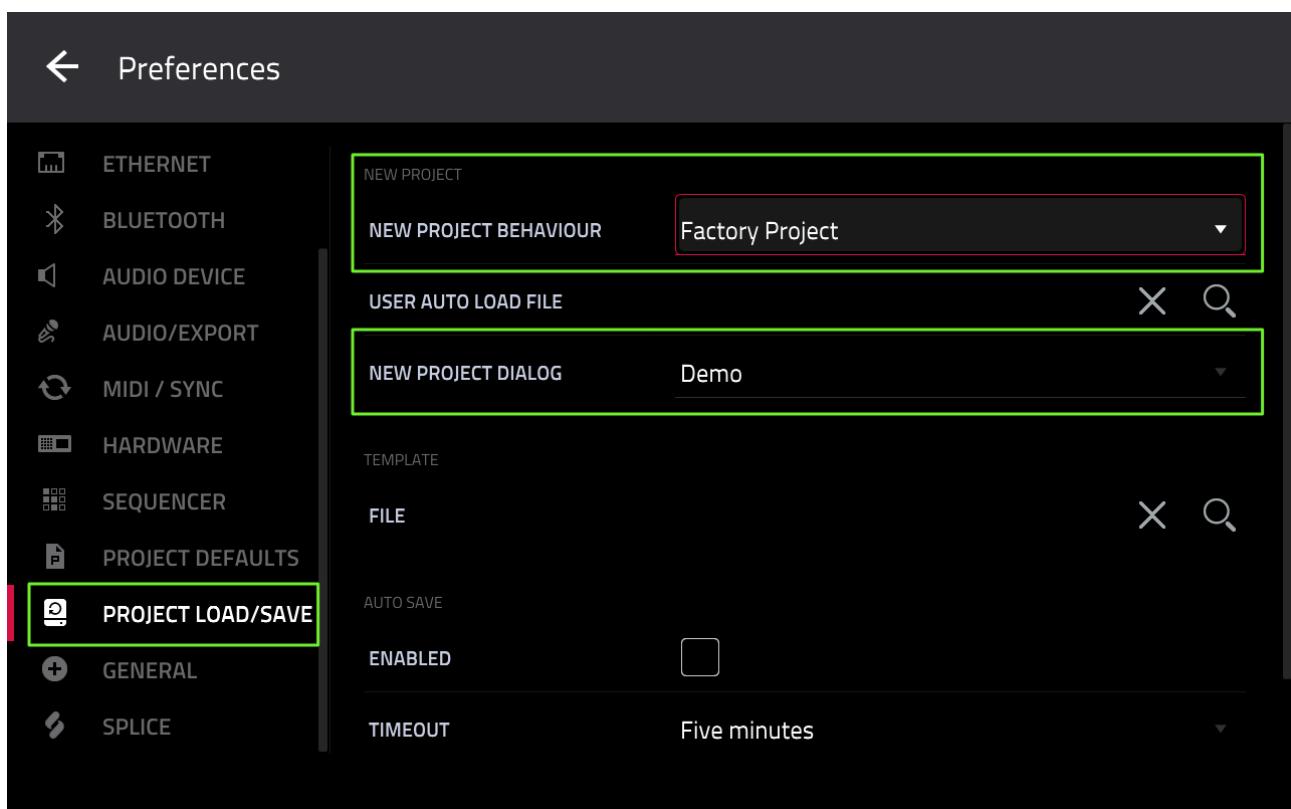
Go to **[MENU] > PREFERENCES:**



There's lots of pages of preferences settings here and I'll discuss many of them as they become directly relevant within the course. But for the

moment there's a few settings that in my opinion benefit from an immediate change.

First, tap and hold the left side of the screen and drag upwards to reveal the '**PROJECT LOAD/SAVE**' option:



Locate **NEW PROJECT BEHAVIOUR** – by default this is set to '**Factory Project**' so whenever we create a new project, MPC3 loads a small trap drum kit into memory. Let's change this so each time we create a new project we start with a 'clean slate'. Change this to:

NEW PROJECT BEHAVIOUR > EMPTY PROJECT

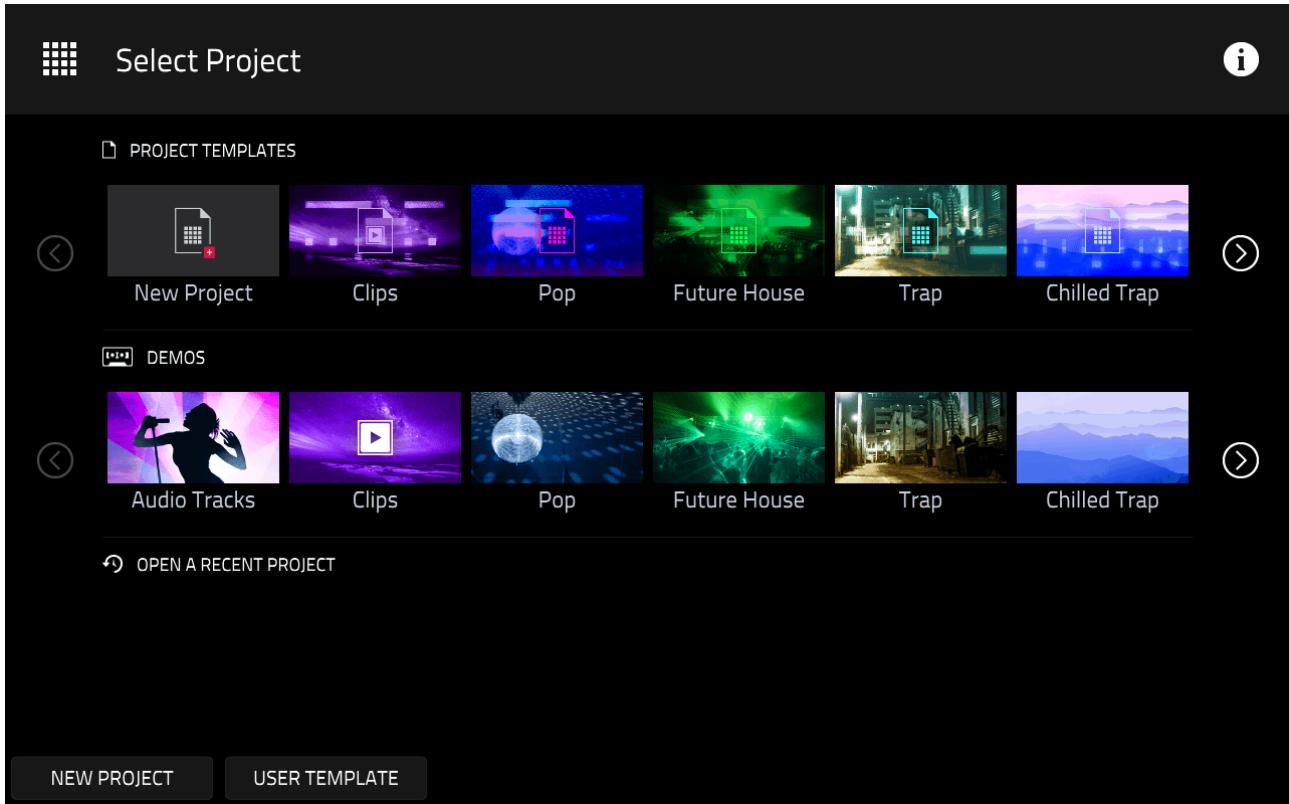
To do this you first single tap on the field currently showing '**Factory Project**' and then either turn the (DATA WHEEL) or use the [-] button (if your MPC has one).



Underneath this setting you'll see '**NEW PROJECT DIALOG**' > **Demo**. This determines the initial screen we boot up the MPC or when we select a create new project. Generally I recommend you set this to:

'NEW PROJECT DIALOG' > Demo/Template/Recent

Now the initial new project screen will give you multiple options on that initial splash screen; factory demos, recent user projects and the option to load a custom User template. It will look something like this:



Select the **HARDWARE** link on the left hand side and towards the bottom of the page you'll see the **FLASH TAP TEMPO LIGHT** option – if you're anything like me you'll find the flashing tap tempo light hugely distracting! If so, just **uncheck** this box and instantly find inner peace...

Go to **SEQUENCER** and set **DISPLAY RESOLUTION > 960 PPQN**. This will ensure that your sequencer 'time counter' will always display the actual, full resolution playhead position rather than a simplified 'legacy MPC' style time counter (this will become clearer later in the course).

Go to **PROJECT DEFAULTS**. This page controls the default settings used in some of the core elements of your MPC, which in some cases varies across different MPC models for no obvious reason!

There's one setting here that I do recommend you definitely ensure is 'off':

Default Drum/Keygroup Filter > Off

In some models this is set to 'LP2' and could possibly be applying a small amount of 'low pass filter' to all your sounds on your pads even when you didn't specifically want to. It's best to only apply filters to specific pads when we truly want to add them (it's easy, and I'll show you how later in the course).

The other setting I recommend is:

DEFAULT SCREEN > Main

This ensures that the first screen you see when starting a new project is the 'MAIN' screen which, as the name suggests, is the 'main' page where you tend to manage your main project elements. On some MPC models this is set to '**Sounds**' – you can of course leave it this way, but for this course I will assume your default screen is MAIN.

Now select the **GENERAL** link on the left side of the screen. Scroll down on the right hand side and you'll see the option **COLLECT USAGE STATISTICS**. By default this is enabled, but if you prefer not to share any usage stats, **unchecked** this option. Beyond that we'll be adjusting other settings when we come to a relevant topic within the course.

A02: TRANSFERRING CONTENT TO YOUR MPC

Audio? Check. Up-to-date firmware? Check. Initial preferences set? Check. Before we can get cracking with the tutorials we'll need to set up an 'MPC disk' and transfer the 'MPC Bible Project Files' Expansion to it.

TOPICS COVERED IN THIS CHAPTER

- ✓ Setting up your MPC disk
- ✓ Transferring files from your computer
- ✓ Installing expansions
- ✓ MPC disk organisation

MPC DISK SETUP

You'll probably be aware that your MPC has an '**internal drive**' (sometimes called the 'factory disk'). This drive is used to store all the pre-installed sound content provided by Akai (kits, instruments, loops, demo projects, expansions etc), plus it has some additional free space that can be used to save other files to.

However it's important to understand that **this internal disk cannot be directly accessed outside of the MPC file browser** - this means any

content you save to this drive cannot be easily backed up. It's also not possible to copy any files to this factory drive, so you cannot, for example, copy your existing sound library to it, nor install any additional expansions.



My advice is to generally use this factory disk for storing the factory sound content and demos, potentially along with some plugin related content (e.g. user created presets).

When it comes to loading and saving your own content and third party expansions, you should definitely be using **removable media**. Each MPC model supports a selection of different removable storage types, such as **SD cards**, **USB drives** (e.g. sticks, portable disks) and **SATA hard drives** (e.g. SSD, mechanical hard disks).

When you attach one or more of these disks to your MPC they immediately become available for loading and saving content to. Unlike the factory drive the content on these removable disks can be easily managed by connecting to a computer.

REMOVABLE MEDIA OPTIONS

Each disk type has its pros and cons. Ultimately if you have the option of installing an **internal SSD** on your MPC then I do recommend you consider this as this is going to be the cheapest way to gain a huge amount of fast, reliable storage inside your MPC. It's a 'set it and forget it' option.

Just buy an SSD drive from a reliable manufacturer (check the customer reviews on Amazon etc) and install it to the SATA port on the underside of your MPC:



All MPC models also support 'external' disks via a USB 'A' port (e.g. USB flash drives) and most models also support SD cards. These are definitely more convenient to use as they require no 'installation' like an internal SATA disk. Just pop an SD card or USB flash drive into a spare port on your MPC and you should be good to go.

You probably already have a spare SD card or USB flash drive hanging around your studio, so if you want something to quickly get you up and running then these are definitely a good option.

The MPC also happily supports multiple disks simultaneously, so you can have an internal SATA disk for storing some content (e.g. sound library,

plugins etc), and an SD card for 'day-to-day' tasks (e.g. current working project, some recently sampled vinyl cuts etc).



The MPC file system itself is fairly sluggish so SSDs tend to perform very similarly to SD cards or USB 3 disks when it comes to general loading and saving duties (including disk streaming).

CONNECTING YOUR MPC DISK TO A COMPUTER

Being able to transfer content back and forth from your MPC disk will enable you to access additional content on your MPC, such as your existing sound library, third party expansions & sample packs. It will also mean you can easily backup all your hard work, ensuring that should your MPC disk ever die you'll always have copies of all your MPC projects stored safely on your computer.

And most importantly (for this course at least), by connecting your MPC disk to a computer you'll be able to transfer the '**MPC Bible 3 Project Files Expansion**' to your MPC which contains all the projects and samples used within the step-by-step tutorials in the course!

The easiest way to transfer content back and forth between MPC is to use '**Controller Mode**'. First connect a standard 'A-B' USB cable from the MPC USB B port to a spare USB 'A' port on your computer:

A02: TRANSFERRING CONTENT TO YOUR MPC



If your computer only has USB 'C' ports, you can either use a 'USB C-to-A' adapter, or use a USB 'C' hub that has an available USB 'A' port.



Now in your MPC press [**MENU**] and tap on the '**chip**' icon at the top right of the screen:



From the pop up dialog, press **CONTROLLER MODE** and your MPC will show a message '**Looking For Computer**' – now go to your computer's File Explorer ('Finder' in a Mac) and you should see your MPC disk appear along with all the other disks attached to your computer:



At this point you can begin copying files back and forth to your MPC disk just like you would any removable disk on your computer.



Remember, the MPC 'factory' internal drive is not accessible via a computer and always remains invisible while in controller mode. It can only be accessed from within the MPC file browser.

If your MPC disk doesn't show in your computer, make sure the disk itself is properly connected to your MPC, e.g. fully pushed into the port. Also consider trying a different USB cable and/or a different USB port on your computer (bypass any USB hubs to rule out an issue with the hub).

WHICH DISK FORMAT?

MPCs can read a number of disk formats, but the general recommendation is to use **exFAT**. Most new SD cards, USB sticks and many SSDs will already be exFAT formatted so should work with your MPC 'out of the box'; simply pop the disk into your MPC and it should be instantly available for use.

Otherwise, format your disk to exFAT either in your computer (you can do this while connected in controller mode) or directly within the MPC. To format in the MPC, go to [**BROWSER**] > **Places** and select the drive you wish to format. Hold down [**SHIFT**] and select **DRIVE INFO** > **FORMAT DRIVE**. Remember formatting will permanently wipe all existing data on the disk!

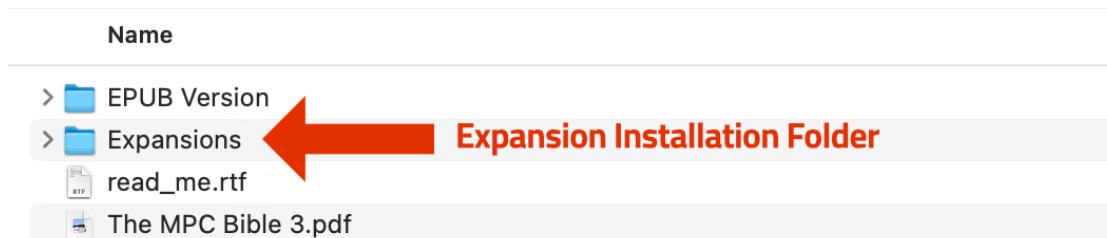


For SD cards and USB drives you also have the option of temporarily removing the disk from your MPC and physically attaching the disk to a port on your computer.

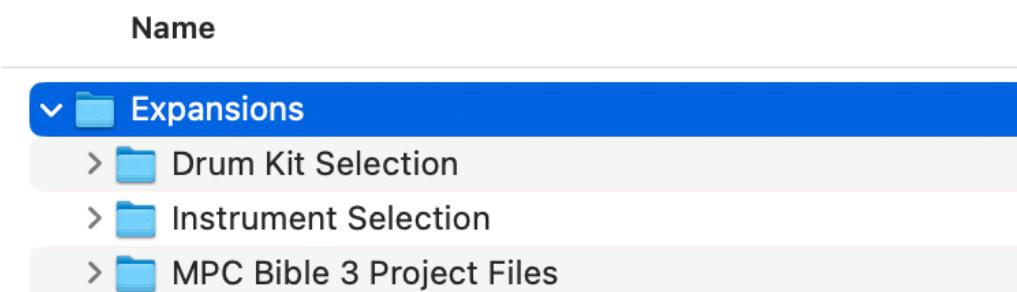
INSTALLING YOUR FIRST MPC EXPANSIONS

An **MPC expansion** is a collection of sounds, kits, instruments and projects made for MPCs. Your MPC comes with some pre-installed expansions on the internal drive that make up the factory library, and you can add more expansions to your MPC by downloading or purchasing from third parties (including my own site, MPC-Samples.com).

To get you started I've included some expansions as part of the MPC Bible download files alongside this book that you are currently reading; you'll find them inside the folder '**Expansions**':



There's three expansions included inside the '**Expansions**' folder:



- **MPC Bible 3 Project Files** – this expansion contains all the projects, samples, kits & instruments used in the tutorials throughout the course
- **Drum Kit Selection** – this expansion contains a selection of drum kits
- **Instrument Selection** – this expansion contains a selection of multisampled 'keygroup' instruments

To install these expansions inside your MPC, simply copy over the entire '**Expansions**' folder to the root location on your MPC disk so your MPC disk should now currently look like this:



That's it! The next time you boot up your MPC, the expansions will be available to use inside the special 'expansions' section of the MPC browser (we'll learn how to use this soon). And if you ever want to install more expansions in the future, just copy the provided expansions inside the '**Expansions**' folder on your MPC disk.

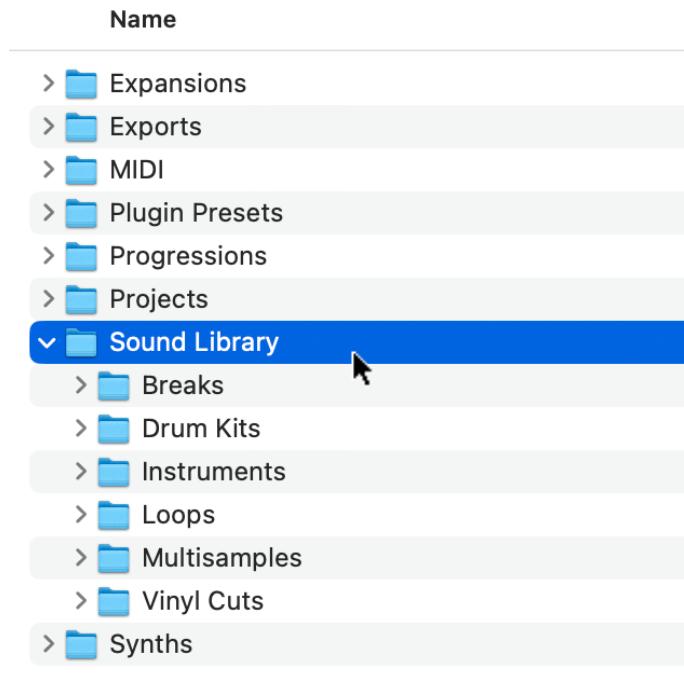
ORGANISING YOUR MPC DISK

With your expansions now copied to the '**Expansions**' folder on your disk you could also now copy over any other content that you might want to use with your standalone MPC, such as your favourite drum breaks, drum one shots, vinyl samples, instrument loops, bass sounds and so on.

I'd recommend keeping your MPC disk nicely organised, with dedicated folders for each type of content you'll be working with, for example:

Name
> Expansions
> Exports
> MIDI
> Plugin Presets
> Progressions
> Projects
> Sound Library
> Synths

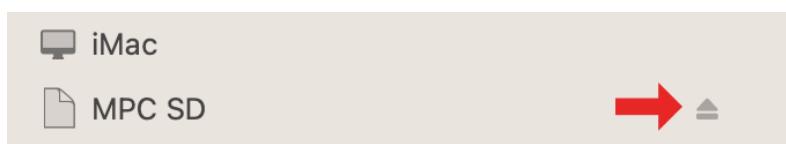
Each of these folders can be further categorised with sub folders, for example my sound library folder looks like this:



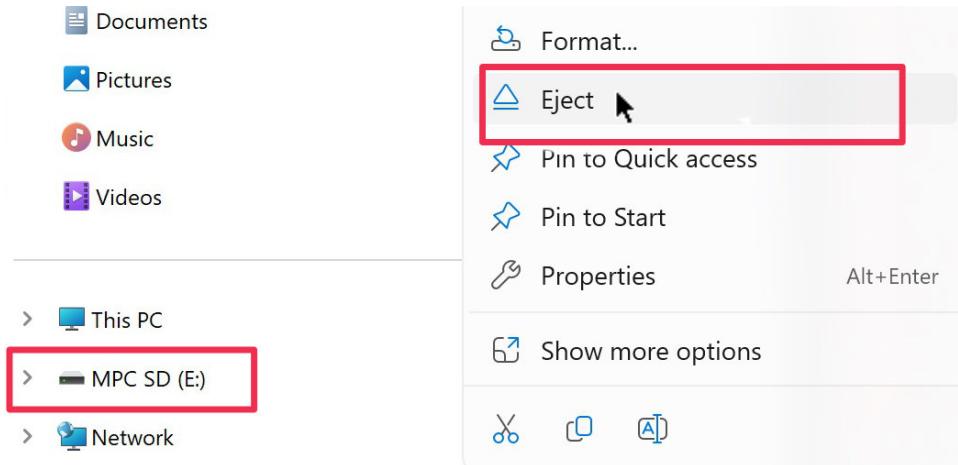
RETURNING TO STANDALONE MODE

Once you are finished copying everything to your MPC disk you can return to standalone mode. However it's important to ensure that you first 'eject' your MPC disk from your computer's operating system otherwise you risk damaging or corrupting the disk.

On a Mac, click on the small '**Eject**' icon next to the disk in the left hand side of Finder:



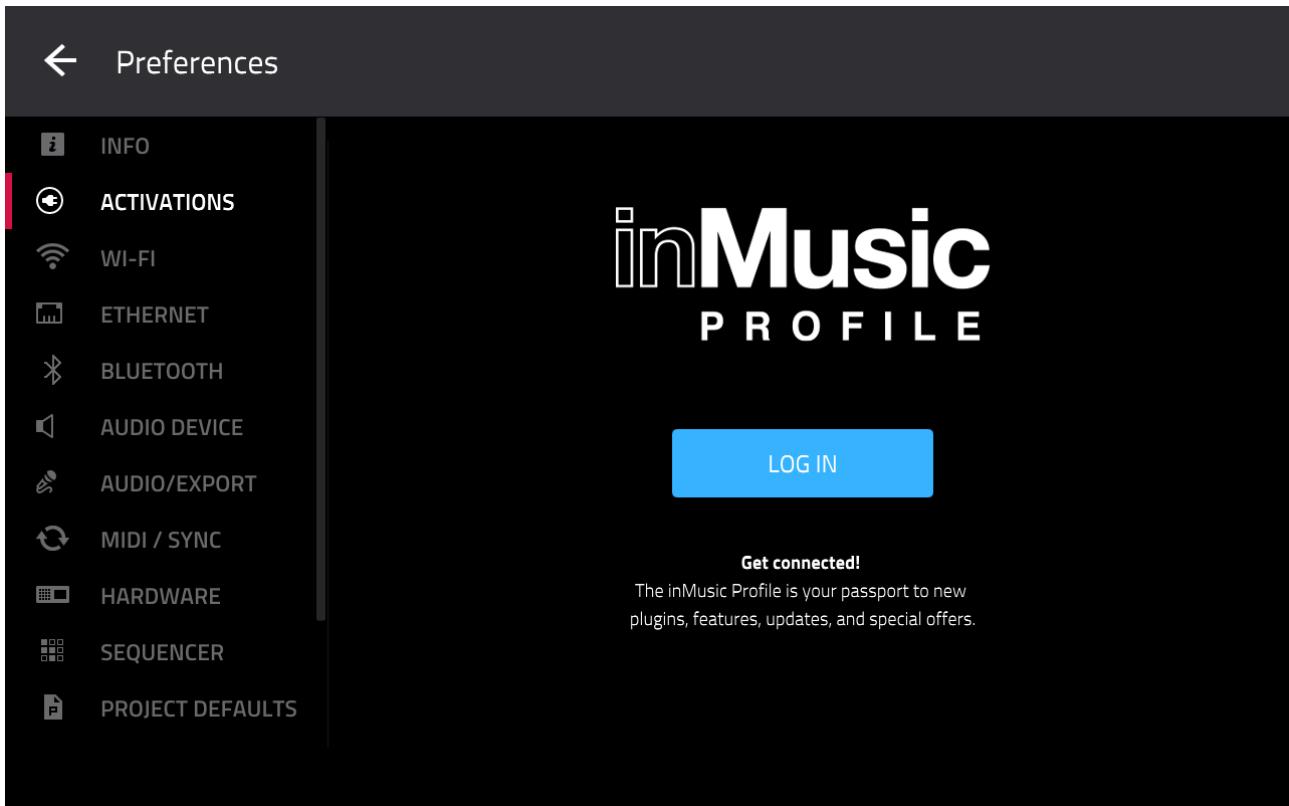
In Windows, right click on the drive in File Explorer and select '**Eject**':



INSTALLING YOUR FREE PLUGINS

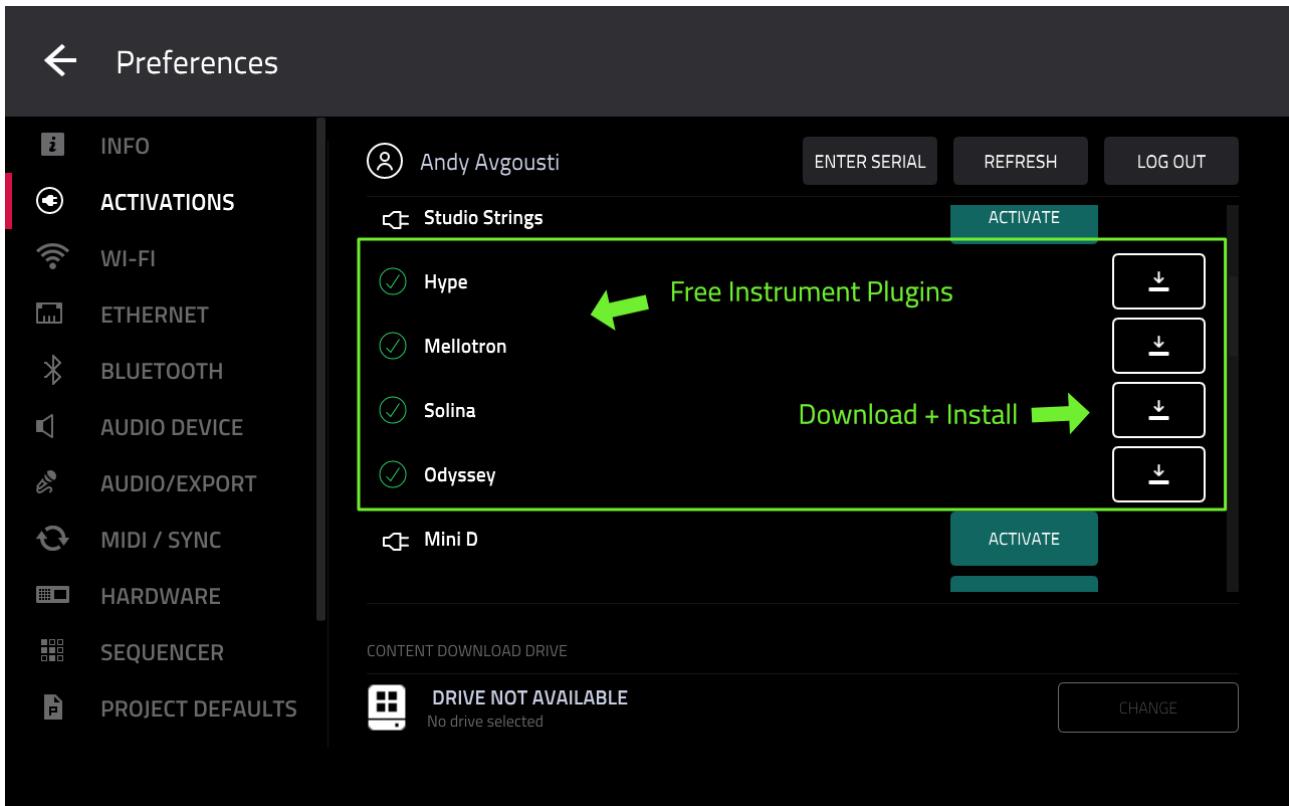
The MPC ships with some free plugins already 'baked in' to the firmware, this includes a complete suite of FX plugins and some plugin instruments; **TubeSynth**, **Bassline**, **Electric** and **DrumSynth**, however there are many other free plugins available from Akai, you just have to download them first.

Go to **[MENU] > ACTIVATIONS:**



First you'll need to log into your inMusic account (the one you set up in the previous chapter when registering your MPC hardware). Press **LOG IN** and either scan the presented QR code with your phone camera or go to the URL provided and enter the code on your MPC screen. After logging on the inMusic web site, your MPC should automatically sync with your inMusic account and will generate your available plugin list.

You should see a bunch of 'pre-activated' plugins for you to download:



Mellotron, Solina, Hype and **Odyssey** are all free 'instrument plugins'.

There's also some free FX plugins, such as **AIR Expander** and **AIR Chorus**. To install all these plugins into your MPC, just click on the download icon for each plugin.

You'll initially be asked where you want to install your plugins, this can be to your internal disk ('factory disk') or to any disk that you've connected to your MPC. If you have an internal SATA disk on your MPC I recommend you install them to this as plugins can use up a lot of space (for example, Hype is around 1GB while a premium plugin like Fabric is around 6GB).

If you don't have an internal SATA disk you can install to an SD card or USB stick.

After selecting a 'content download drive' you can download all your free plugins; they will all automatically install after download and will be available to use in your MPC projects. For unknown reasons, after installing the free plugins they completely disappear from the plugin list!



*You'll also see some plugins with a '**GET TRIAL**' option; these are premium plugins which can be purchased from the Akai web site. After purchase, the 'GET TRIAL' button should change to an '**ACTIVATE**' button – just click on this to activate the plugin on your MPC and then hit 'Download' to install.*

Okay, our MPC is set up, the course project files are in place and you have all your freebies installed– it's time to begin the MPC Bible course!

A03: CORE MPC TERMINOLOGY

I'm going to start the course by building a simple, multitrack sequence using nothing but 'beginner-level' MPC features. This will be a great opportunity to show you just how easy it can be to create your own music in an MPC and a great way to introduce all the core MPC terminology and concepts

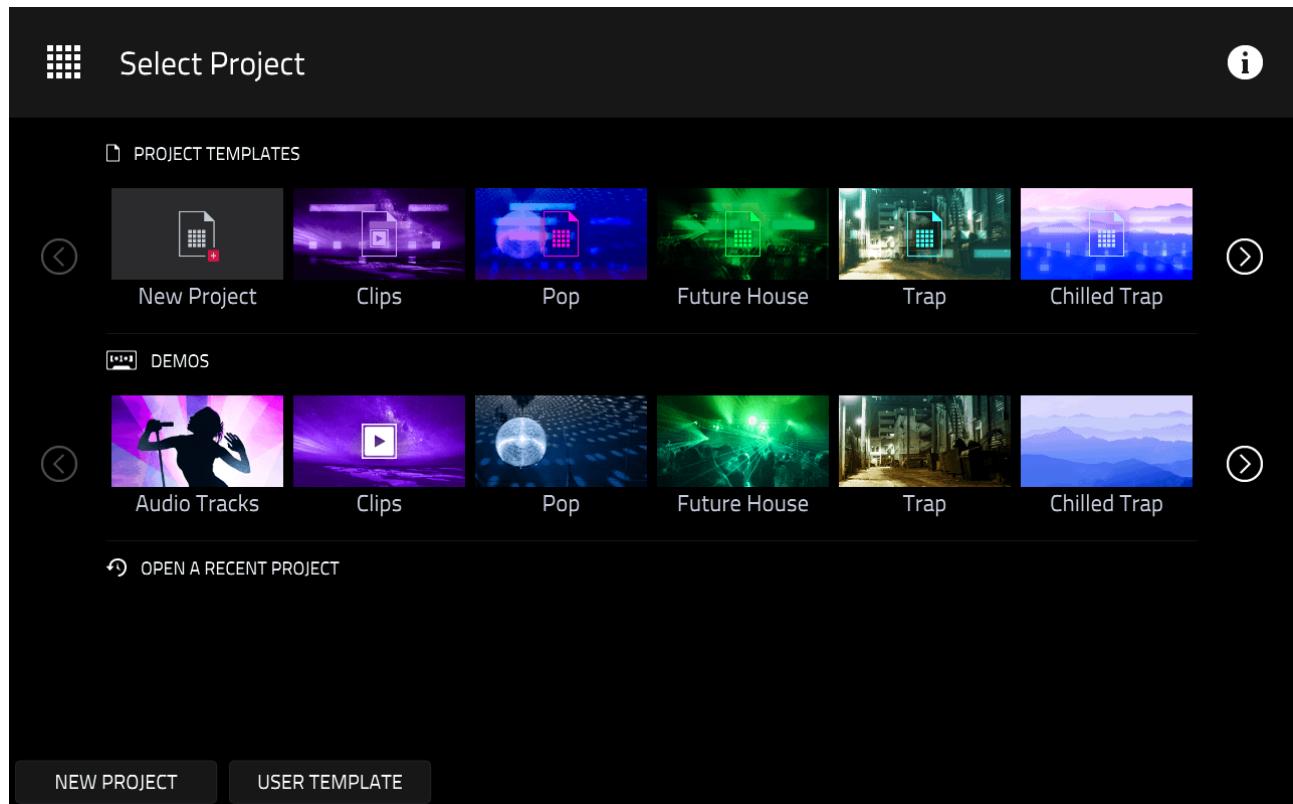
TOPICS COVERED IN THIS CHAPTER

- ✓ Project basics
- ✓ Understanding sequences
- ✓ Loading kits to a track
- ✓ Sounds browser
- ✓ Previewing kits

STARTING A NEW BLANK PROJECT

Let's start this tutorial with a completely empty, 'blank' project. If your MPC is currently 'off', simply turn it on. If your MPC is already up and running, hit the **[MENU]** button tap on **NEW PROJECT**.

What you see now is dictated by the **PREFERENCES > PROJECT LOAD/SAVE** settings we discussed at the end of chapter **A01**, but if you set this to my recommendation of '**Demo/Template/Recent**' then you'll be taken to this page:



To open a completely blank new project, tap on the **NEW PROJECT** button at the bottom of the screen.



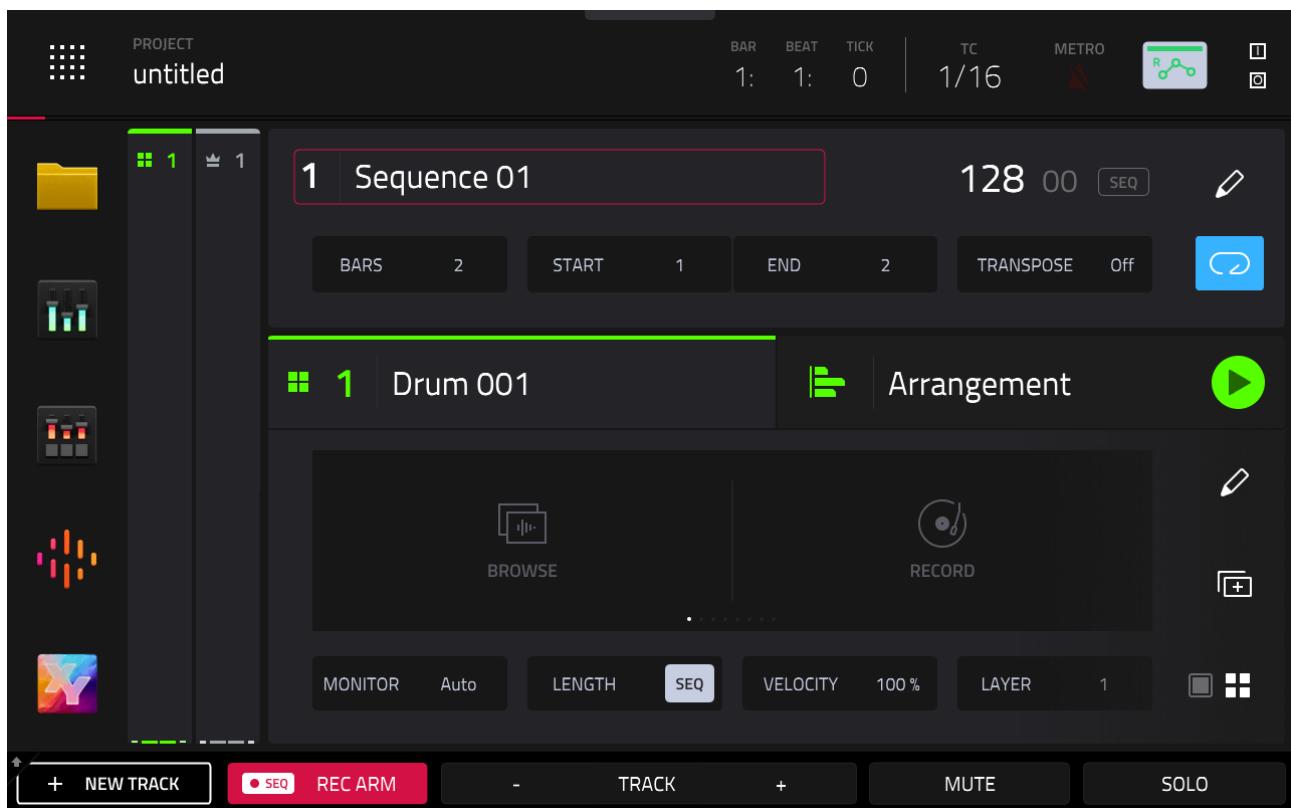
If you see the MPC loading up some samples when pressing NEW PROJECT then remember that by default the MPC loads up a small drum kit with each new project, so make sure you set

PREFERENCES > PROJECT LOAD/SAVE > NEW PROJECT BEHAVIOUR > Empty Project.

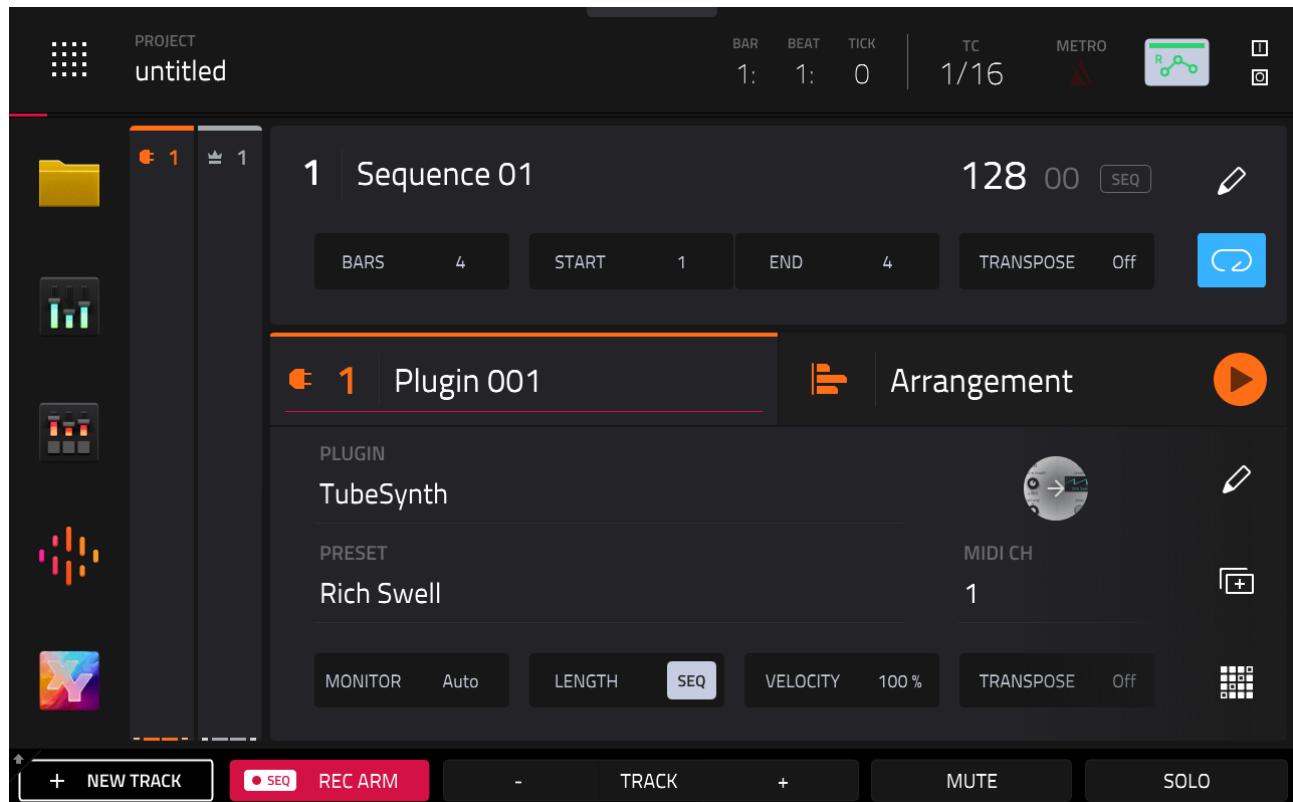
WHAT IS A PROJECT?

After selecting NEW PROJECT, the MPC starts completely afresh with a new, blank and empty project. On most MPC models you'll be taken directly to the **MAIN** screen of that project, on others you might be taken to the 'Sounds' screen – if that's the case, please hit the [**MAIN**] hardware button on your MPC.

Here's what you'll see in non-keyboard MPCs such as the MPC Live, X & MPC One:



Here's the MAIN screen for the MPC Key models (the pre-selected plugin will vary depending on your Preferences):



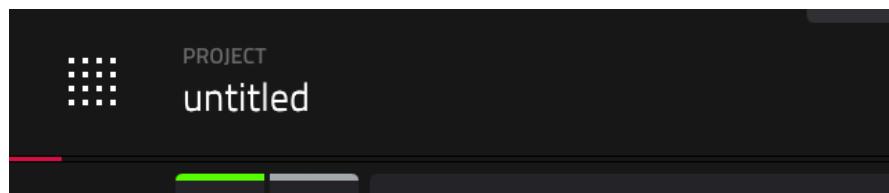
Please note that whenever you create a new project, the MPC uses randomly generated track colours, so the colours you see in your MPC will likely differ to the colours used in my screenshots. I'll show you how to change track colours later in the course.

A **project** is top of the MPC's hierarchy and contains all the resources needed to recreate a particular musical piece (or 'song', 'beat' or whatever you prefer to call a complete musical composition).

If you load a previously saved project file, every single sample, drum kit, instrument, sequence, FX setting and configuration option needed for your song will be loaded back into MPC memory, ready for you to continue working from where you left off. In fact the project will be loaded in the exact state it was in when you last saved it.

Your MPC can only hold one project in memory at any one time. When you create a new blank project or load up a previously saved project, anything currently held in memory will be wiped out of existence (but you will always get a chance to save it before doing this!).

The name of your current project ('**untitled**') is shown on the top left side of the MAIN screen toolbar:

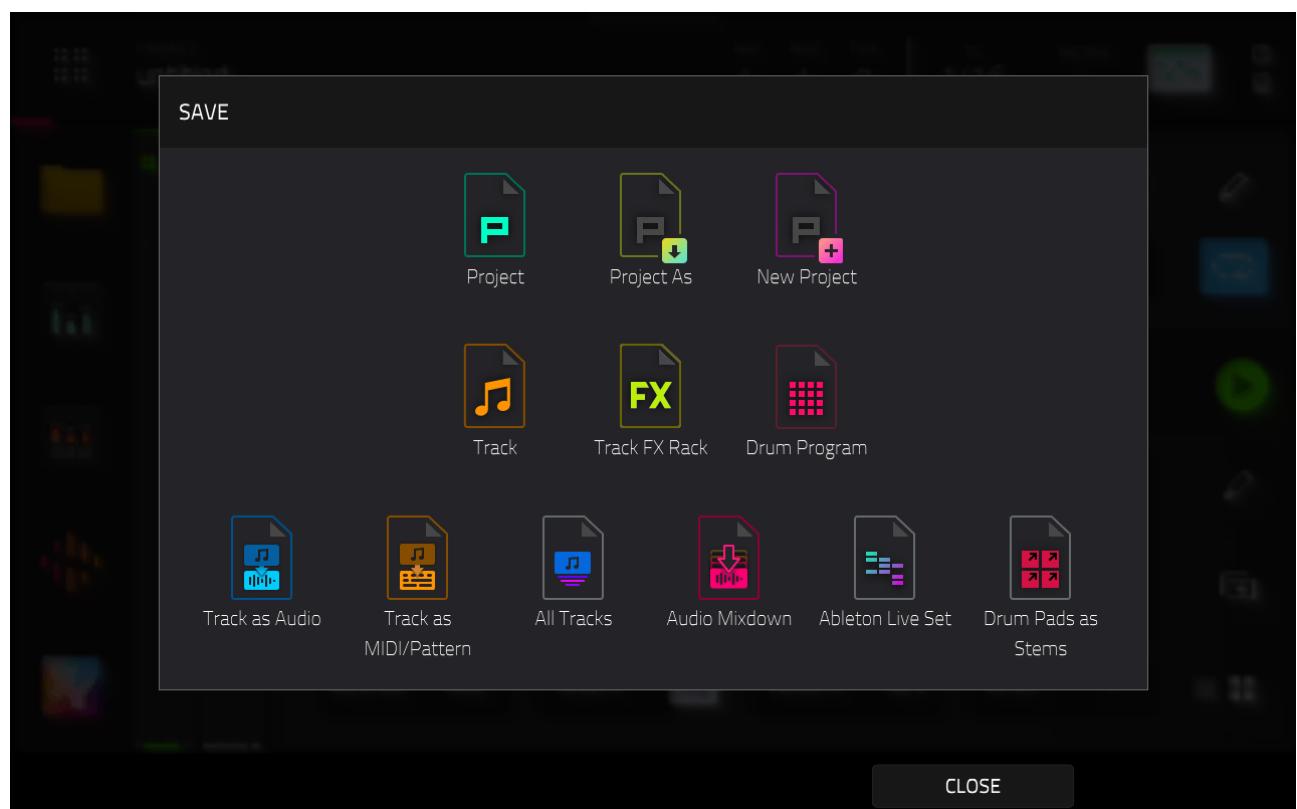


It's important to get into the habit of saving your projects to disk, so whenever you start a new project I recommend you immediately save it to disk; this not only gives the MPC somewhere to store your project, it also gives you the opportunity to name it.

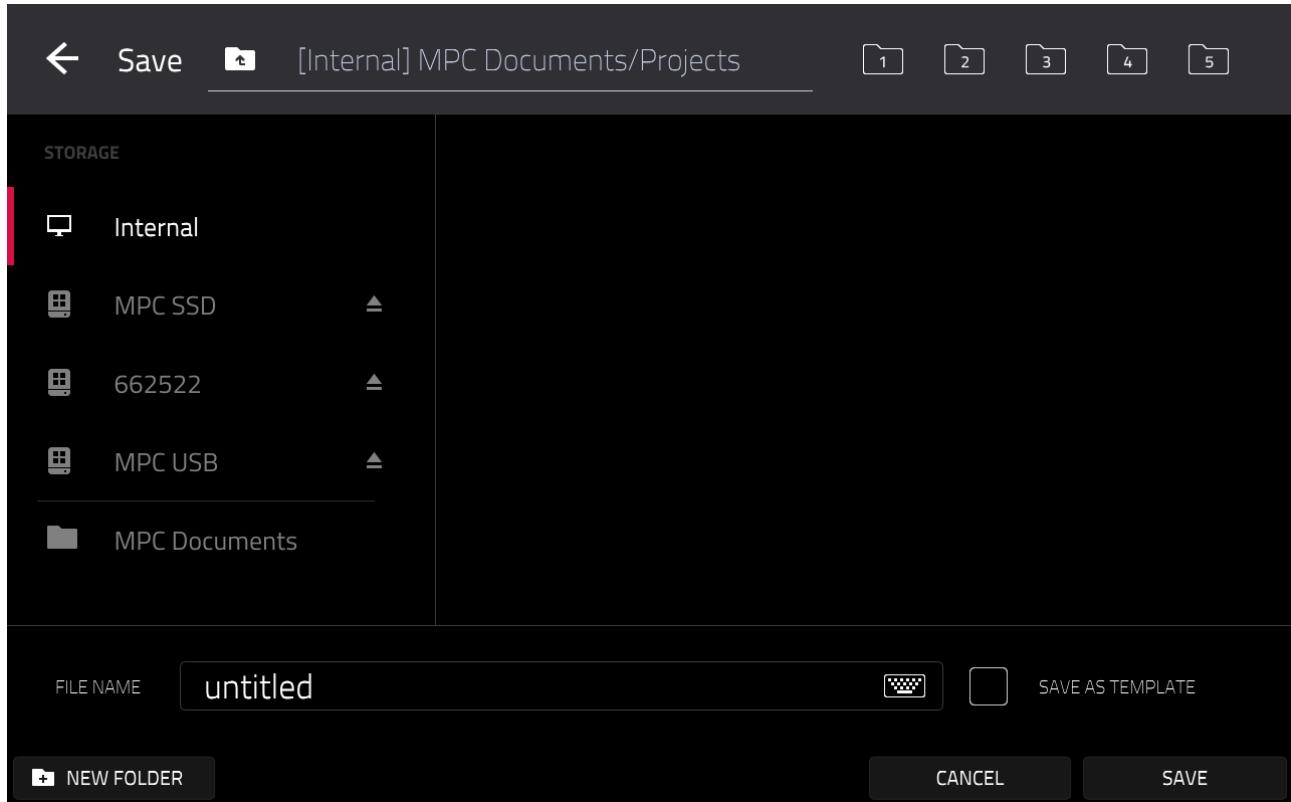


Until a project is saved to disk it is only temporarily stored in system memory, so if you suffer a power cut you'll lose everything you made in that current session. Getting into the habit of regularly saving your work will reduce any potential losses.

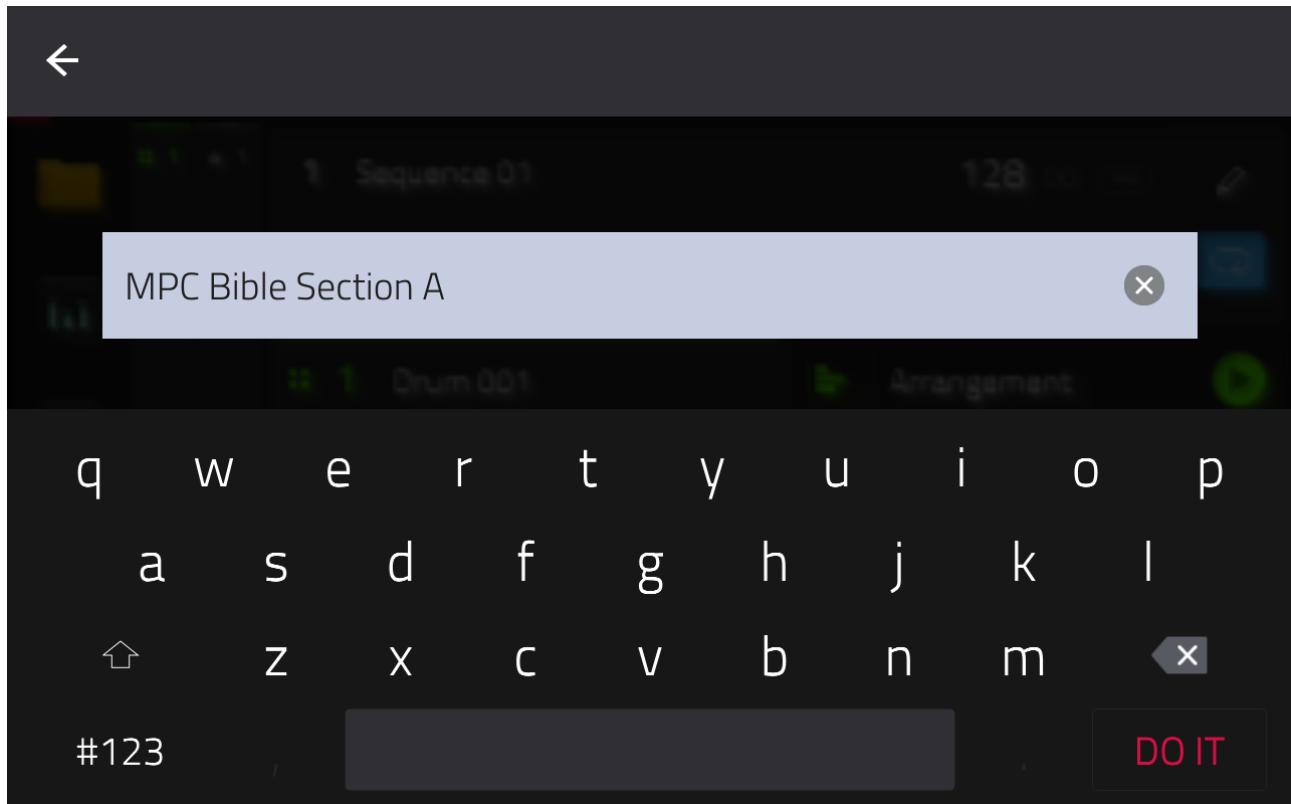
Press the **[MENU]** hardware button to bring up the MENU screen; tap on the **SAVE** icon at the bottom of the screen. Alternatively, some MPC models have a dedicated **[SAVE]** hardware button, so you can use this instead of the software method:



This is the '**Save**' dialog; to save the current project, select '**Project**' to be taken to the 'Save project' screen:



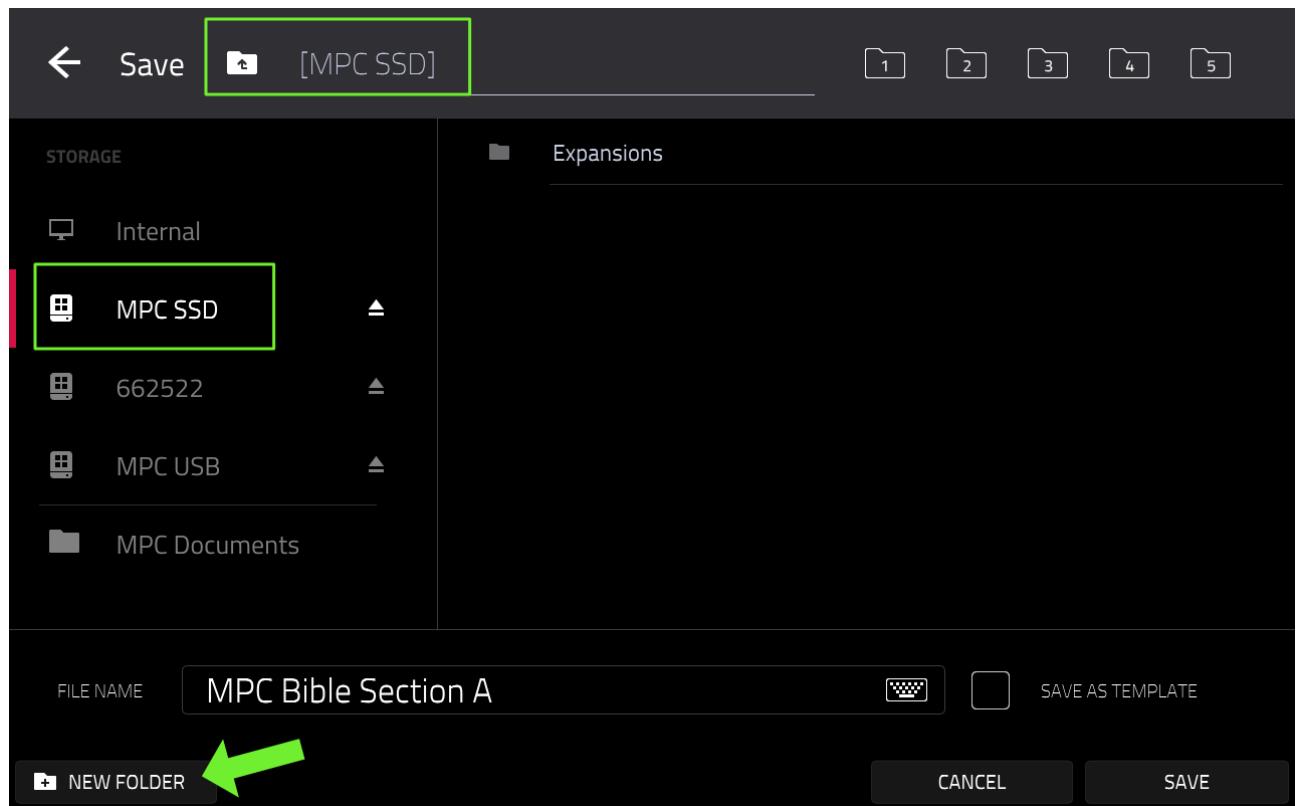
Enter a name for the project by tapping on the keyboard icon on the FILENAME row. I suggest that you use a unique project file for each section of the course, so as we're currently working through Section A, enter the name **MPC Bible Section A** in the **FILE NAME** box using the on-screen keyboard.



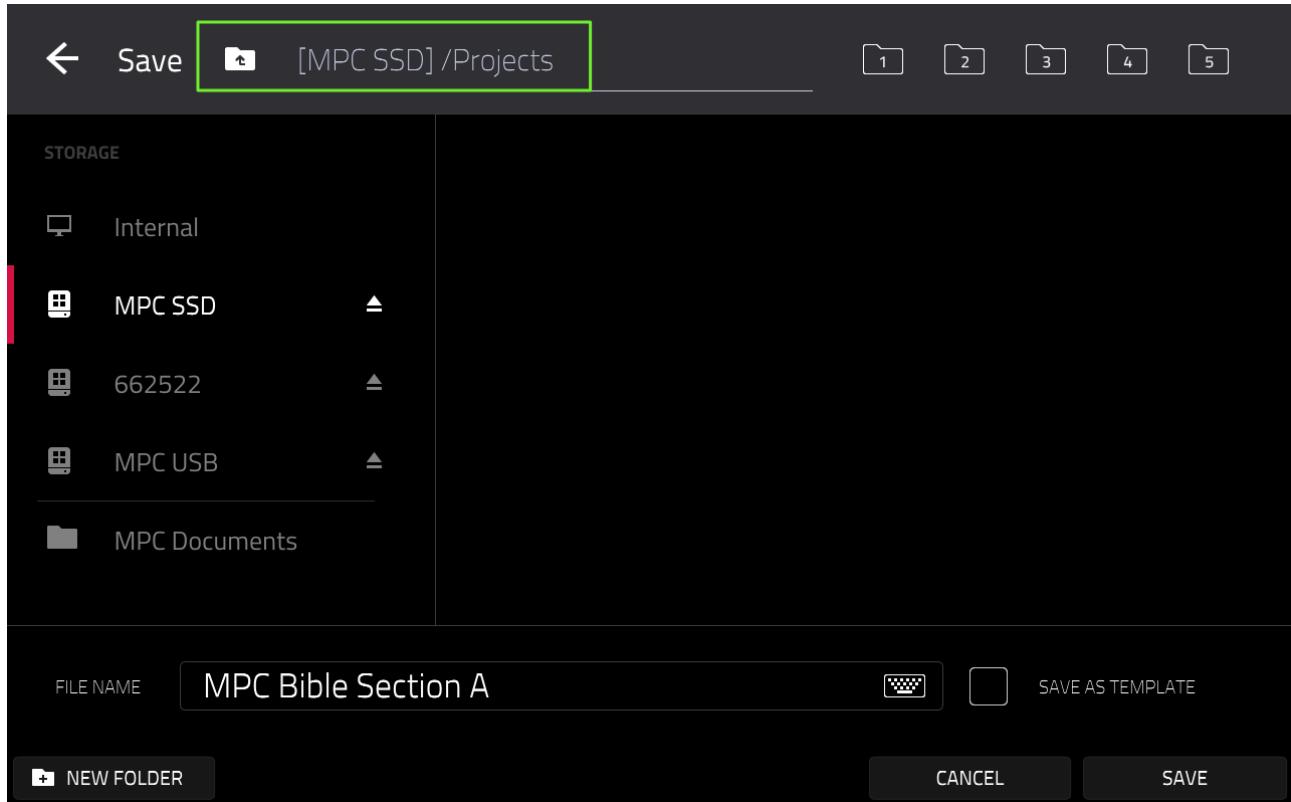
If you need to enter a bunch of uppercase characters, double tap the 'shift' key to turn on 'caps lock'.

Next you'll need to choose a location to save your project to. By default the MPC will want to save a new project inside the '**MPC Documents > Projects**' folder found inside your MPC's internal (factory) drive. As I discussed in chapter A02, I really don't advise saving your projects to the internal drive as it makes them difficult to back up, so instead I suggest you save all your work to your external 'MPC disk'.

Let's save all our projects into a dedicated '**Projects**' folder. First tap on your MPC disk in the left hand side of the SAVE screen window to take you to the 'root' location of your MPC disk (my MPC disk is called '**MPC SSD**'):

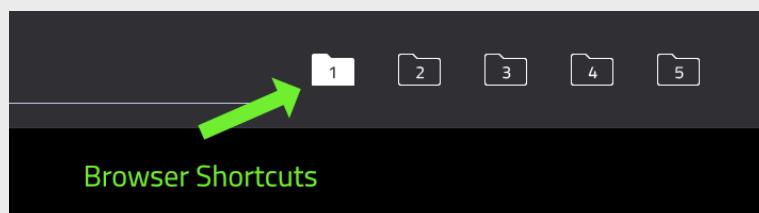


At the bottom left of the screen click on the button called '**New Folder**'. Give the new folder the name '**Projects**' and hit **DO IT** to simultaneously create the '**Projects**' folder and place you directly inside it.



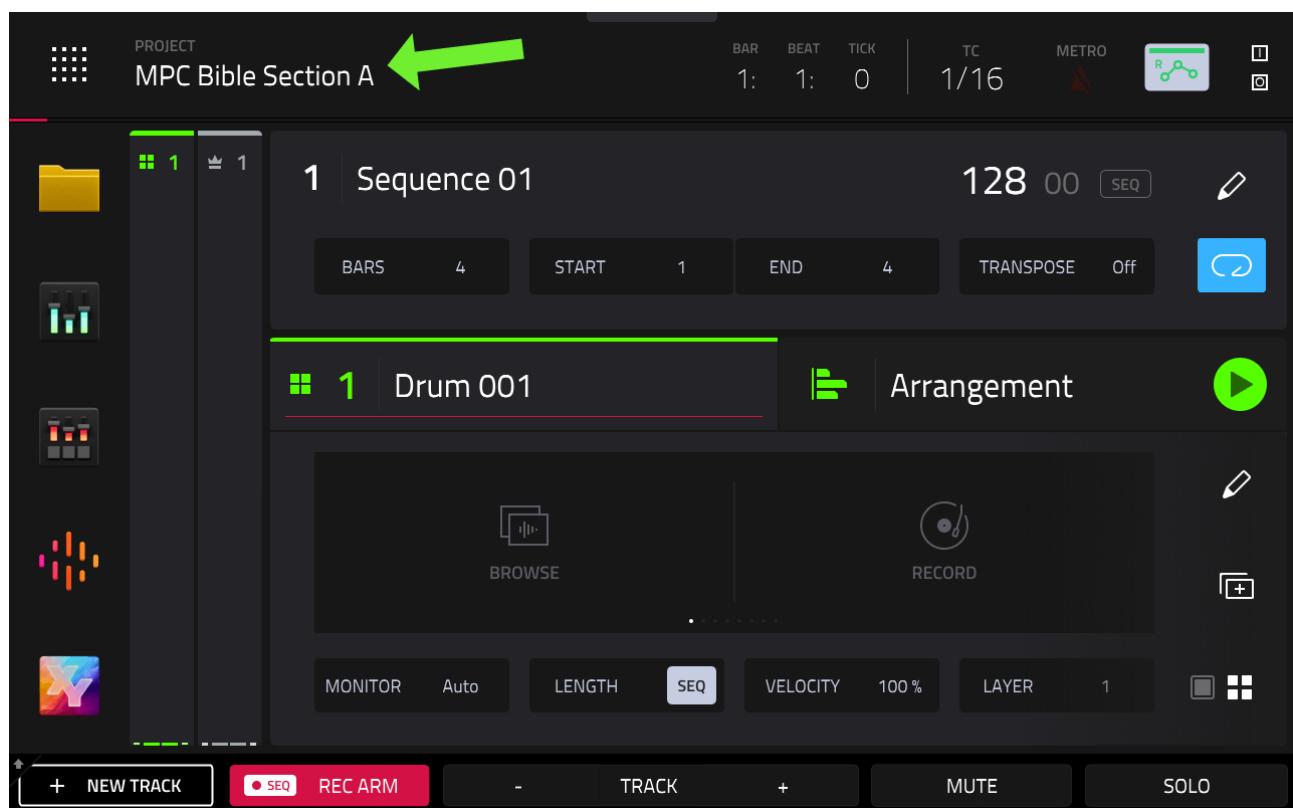
SETTING A BROWSER SHORTCUT

While you are inside the 'Projects' folder on your MPC disk I suggest you set up a 'browser shortcut' to this folder; hold down the [**SHIFT**] button and tap on the [1] folder at the top of the screen (it will turn white):



Now no matter where you are within the MPC file browser system you'll be able to jump directly inside the Projects' folder. Notice that there are five shortcut folders available, you can set any of these in the same way whenever you are inside a folder you need regular access to.

Now hit **DO IT** again to save your project inside this folder. You've now saved your project with the name '**MPC Bible Section A**'. If you go back to [**MAIN**] you'll see the project name is now listed in the tool bar:



With our project now saved , let's take a look at how they are structured.



Use [**MENU**] > **PREFERENCES** > **Project Save / Load** to set up a regular 'auto save' of your project. If you ever suffer a system crash or power cut you'll be able to revert back to the last 'autosaved' version.

ANATOMY OF A SEQUENCE

The MAIN screen always shows you the currently selected **sequence** of your project. A **sequence** is the primary building block of an MPC project and is what you will record all your performances to.

A project can contain up to 128 individual sequences. Depending on your workflow preferences you can chain many sequences together to create a '**song**', where each individual sequence represents a different part (or variation) of the song (e.g chorus, verse, breakdown, introduction etc).

Alternatively some people prefer to build their songs within one sequence, or even adopt a more 'hybrid' approach where they combine both techniques – the MPC is quite flexible in this respect and I'll be exploring the various song building workflows throughout the course.

Sequences are, quite literally, the beating heart of the MPC workflow. The primary task of any sequence is to generate sound by either directly playing recorded audio performances (e.g. vocals, acoustic instruments etc) or by triggering sounds from internal sound sources such as drum kits, sampled instruments and plugins, or even playing sounds from connected hardware synths via MIDI or control voltage (CV).

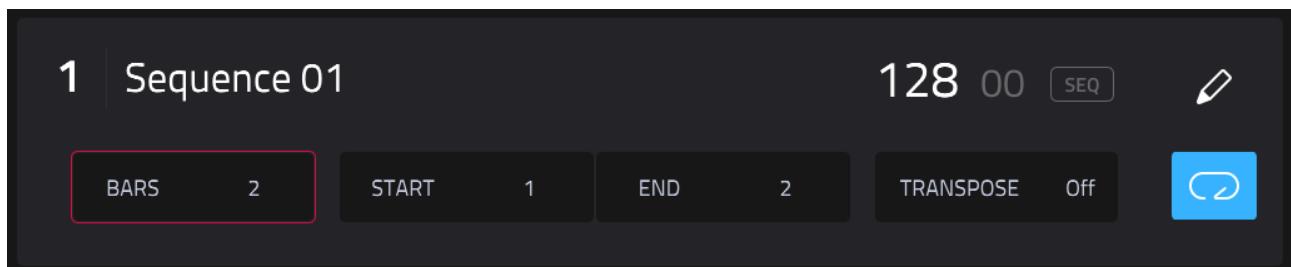
CORE SEQUENCE SETTINGS

The blank sequence you currently see in MAIN shows us the primary components of any sequence.



*It's important to note that most of the initially set sequence values are dictated by the settings in **MENU > PREFERENCES > PROJECT DEFAULTS** and you can adjust these to any default values you wish. You can also change the values 'per project' using the techniques that follow.*

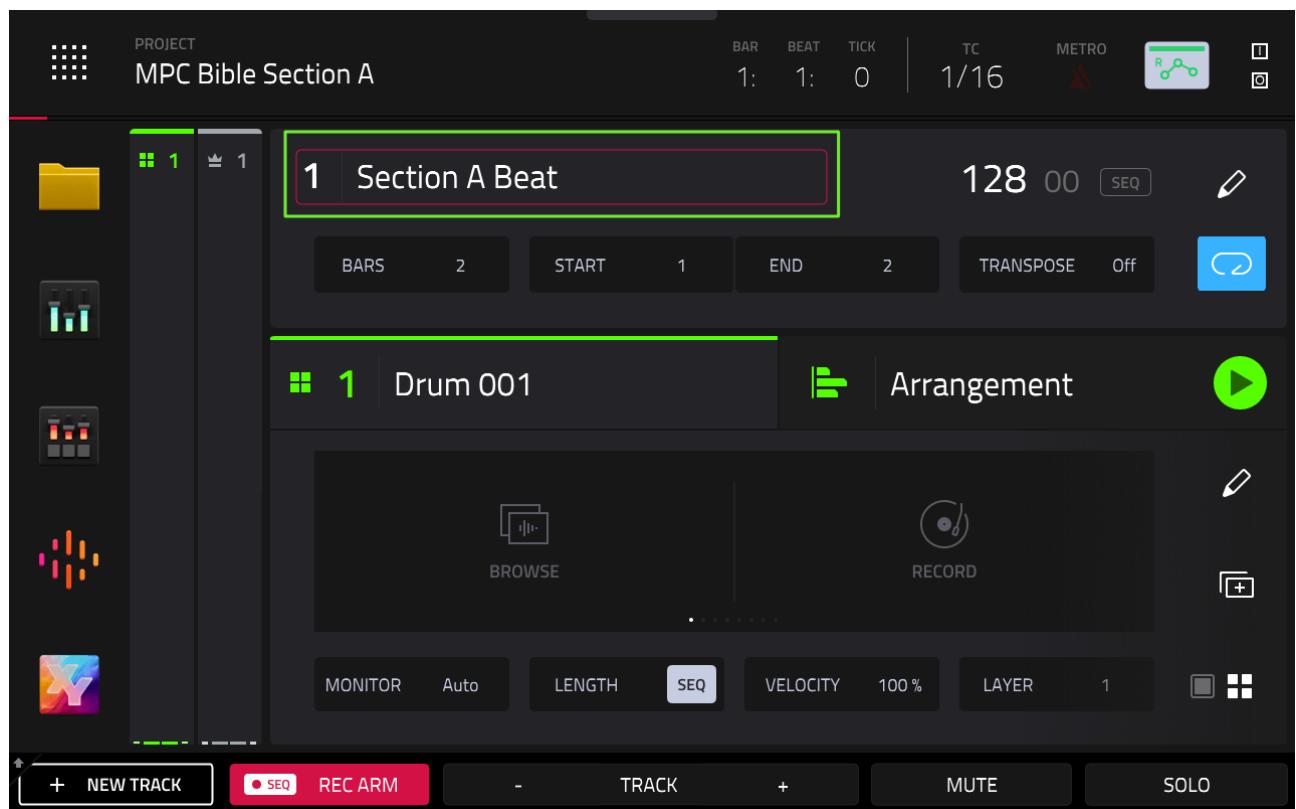
First we have the **SEQUENCE section:**



Here we can configure the primary features of this particular sequence, such as its name, tempo and length, as well as access the core sequence editing tools.

Let's set up some of the main elements of this sequence. First, we have the **sequence 'number'**, which in a new project will always be sequence **1**.

Then we have the **sequence name**. The default name will be Sequence 01, but let's rename it – **tap and hold** your finger down on the current sequence name (**Sequence 01**) and using the pop up keyboard enter the name **Section A Beat** and hit **DO IT**.



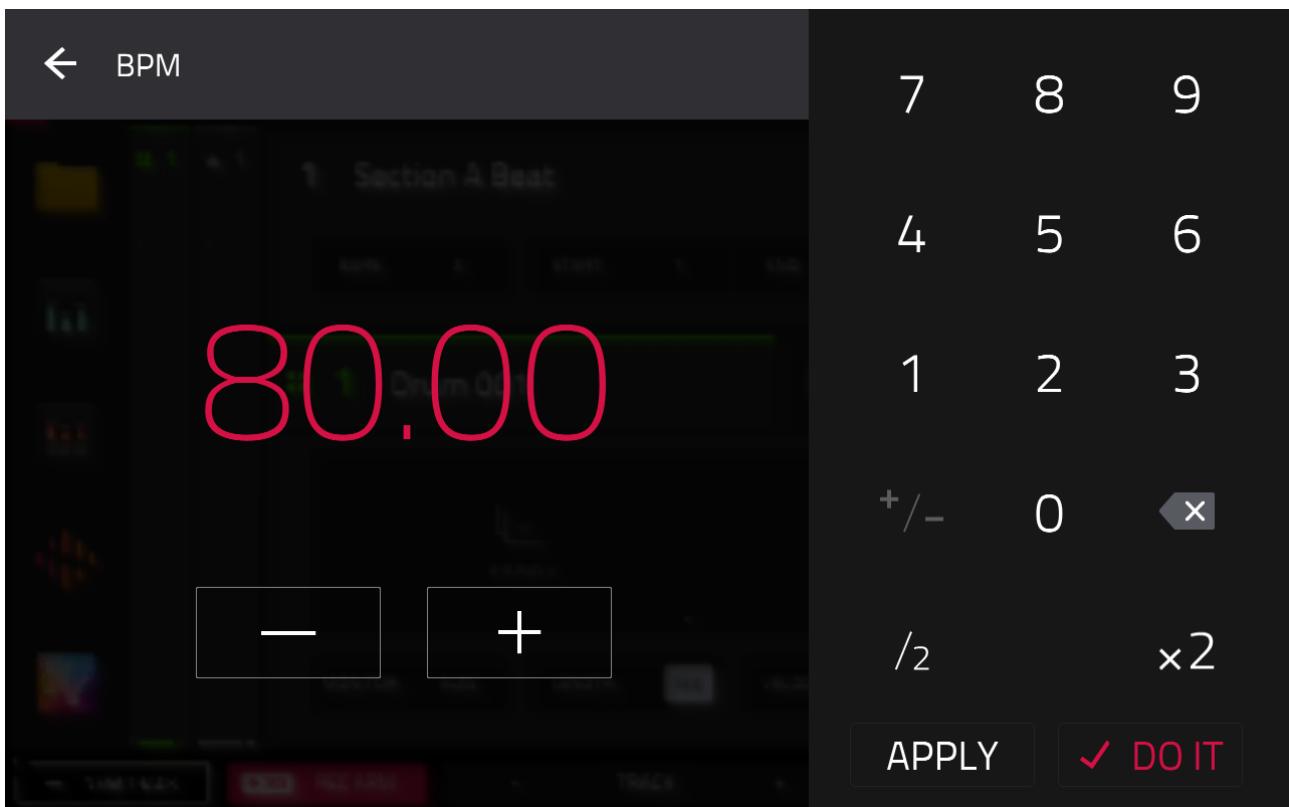
Next you'll see the **SEQUENCE TEMPO** field. This determines how fast our sequence will play. Tempo is measured in *Beats Per Minute* (BPM) and it's currently set to the default **128.00**.

There's a few ways you can change this. You can 'single tap' **'128.00'** select it, at which point you should see a red outline appear – you can now turn the (data wheel) clockwise to increase the sequence tempo, or anti-clockwise to decrease the tempo.



If you hold down the [**SHIFT**] button while you turn the data wheel you can change the tempo in 1/100ths increments.

You can also **double tap** the **SEQUENCE TEMPO** field (or '**press and hold**'), this will open the numeric pad pop up – simply enter the required tempo and hit **DO IT**.



If you prefer, you can use the [**TAP TEMPO**] hardware button (sometimes referred to as the [**TAP**] button on some MPC models) to actually tap out the exact tempo you'd like to work with.



Just begin tapping the [**TAP TEMPO**] button and after a few taps you should see the tempo value begin to change to match the tempo of your finger tapping.

Set the tempo to any value you prefer – I'm going to set it to **80.00**.

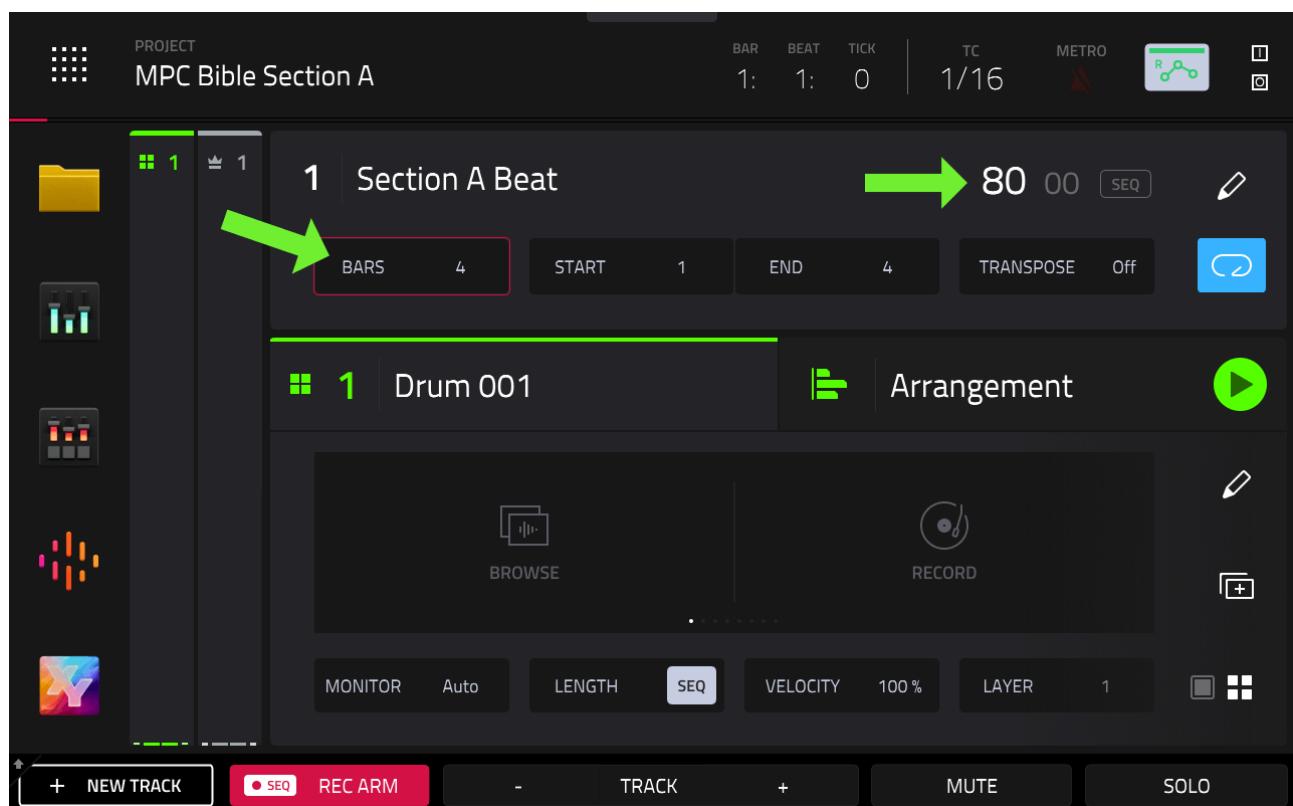


*You can change how many taps the MPC uses to calculate your 'tapped tempo' by going to [MENU] > **PREFERENCES** > **HARDWARE** > **TAP TEMPO**. Set this to 2, 3 or 4 depending on how many taps the MPC will use to calculate the average tempo (I usually use 4).*

On the next row within the SEQUENCER section is the **BARS** parameter, which determines the *length* of this particular sequence.

In most modern electronic music (with a time signature of 4/4), a 'bar' represents 4 beats – think of a boom bap hip hop beat, where the 'boom' is the main kick (on beats 1 and 3), the 'bap' is the snare (on beats 2 and 4) – so a 'bar' in this beat would be boom-bap-boom-bap (**1 and 2 and 3 and 4**).

Some MPC models (e.g. MPC Key) default to a 4 BAR default sequence length, others use 2 BARS. We're going to use 4 bars in our example beat, so, if required, tap on the **BARS** parameter and turn the (DATA WHEEL) to set the number of bars to **4**.



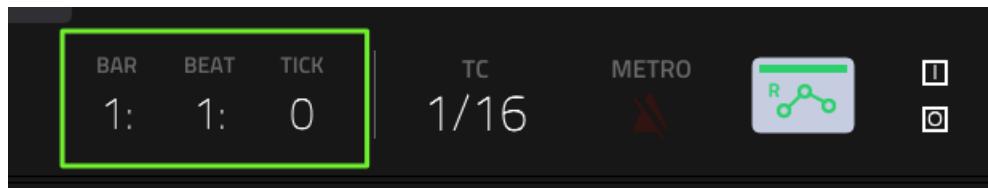
Alternatively you can double tap (or 'press & hold') and use the resulting on-screen number pad.

UNDERSTANDING 'SEQUENCE TIME'

MIDI sequencers like the MPC do not typically measure time in hours, minutes and seconds. Instead they measure the position of the recorded

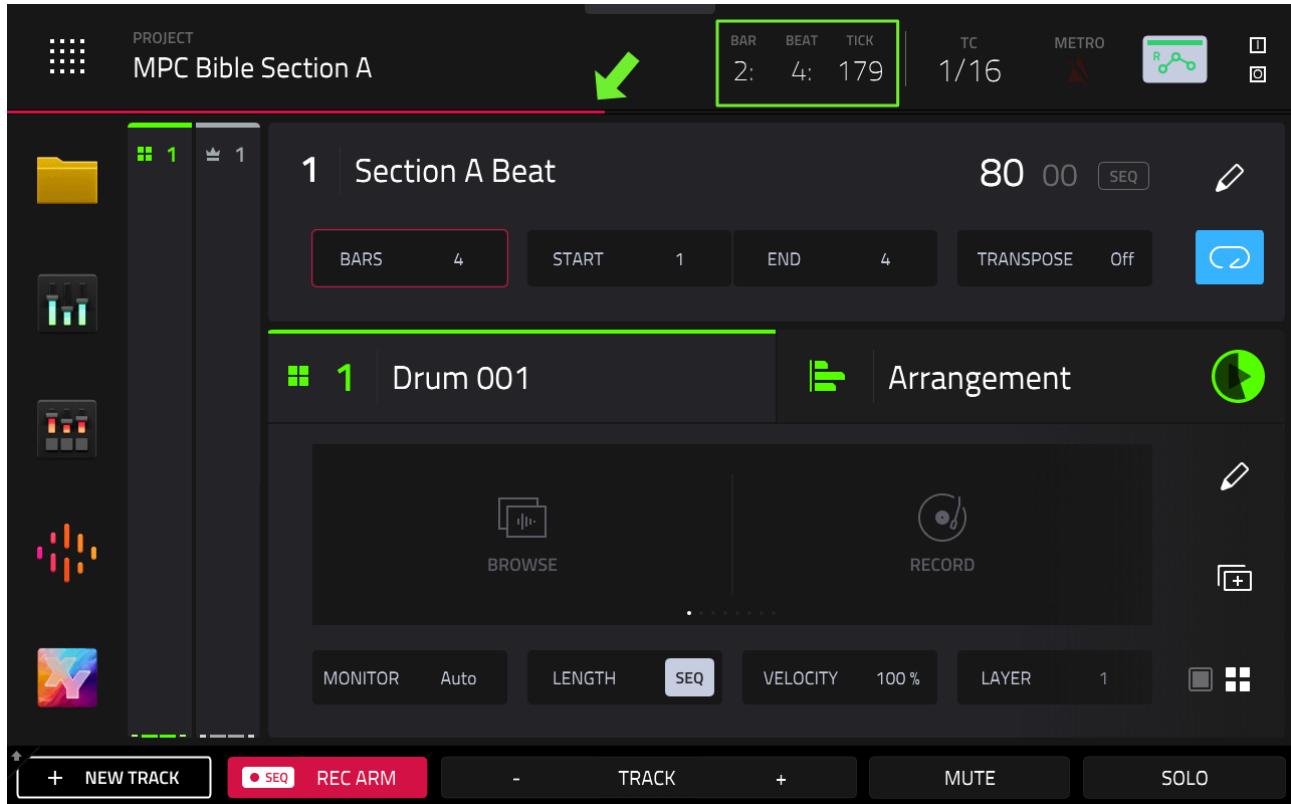
events in terms of **bars**, **beats** and '**ticks**', where 'beats' represent the smaller divisions of a bar (e.g. 4 beats to a bar) and ticks represent smaller divisions of a beat (each beat is divided into 960 'ticks').

At the very top of your sequence you'll see the **Time Counter**:



The time counter shows you the current position of the sequence 'playhead'. At the beginning of a sequence, the playhead is located at **1: 1: 0**, that is, 'bar 1, beat 1, tick 0'.

Hit the hardware [**PLAY START**] button to begin playback of our (currently empty) four bar sequence. You should now see a red line begin moving across the screen, just under the project toolbar, and simultaneously see the time counter (playhead) increasing:

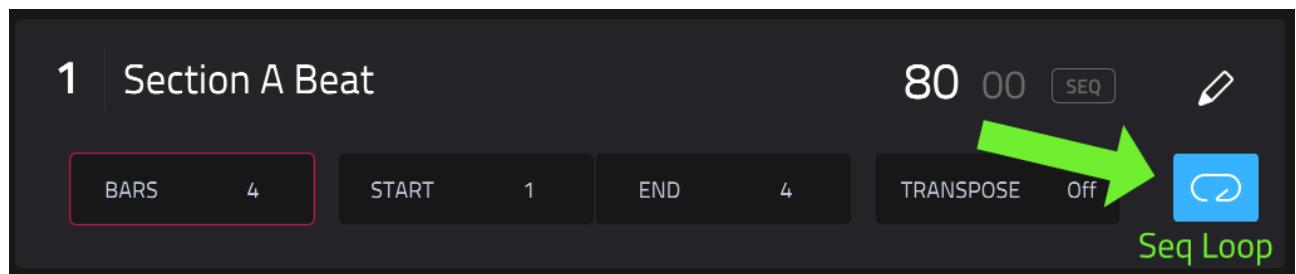


The playhead continues until we reach the end of the entire four bar sequence at sequence time **4: 4: 959**. At this point the sequence jumps back to very the beginning (1: 1: 0) and the whole process starts over, with the sequence playing in a continuous 'loop'.



*Don't forget to change the '**Display Resolution**' preference setting as described at the end of chapter **A01**, otherwise your time counter will not display playhead position at full resolution: **SEQUENCER > DISPLAY RESOLUTION > 960 PPQN***

By default all new sequences in an MPC are set to loop continuously like this. This behaviour is set by the **LOOP** button:

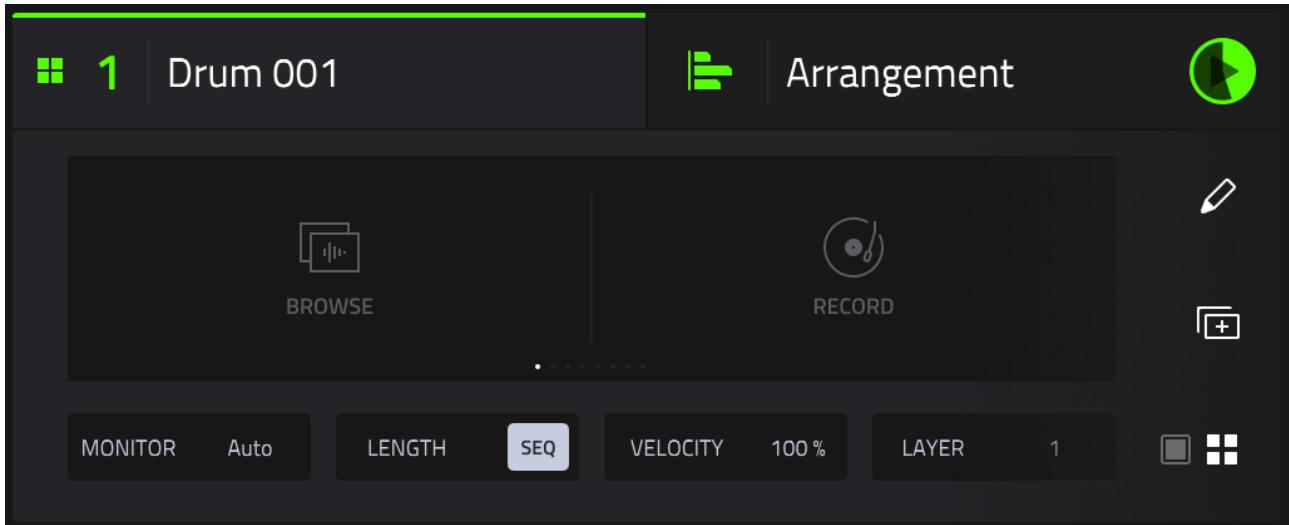


With the **LOOP** parameter 'on' (blue), a sequence will play continuously until you press the [**STOP**] button. With looping turned off, the sequence will stop playback when it reaches its end (in our current example, this would be at the end of bar 4). For this recording we're going to leave **LOOP: ON**.

You'll notice there are other parameters in the sequence block, but we don't need to concern ourselves with these yet. With our core sequencer variables set, we're ready to configure our first **track**.

WHAT ARE SEQUENCER TRACKS?

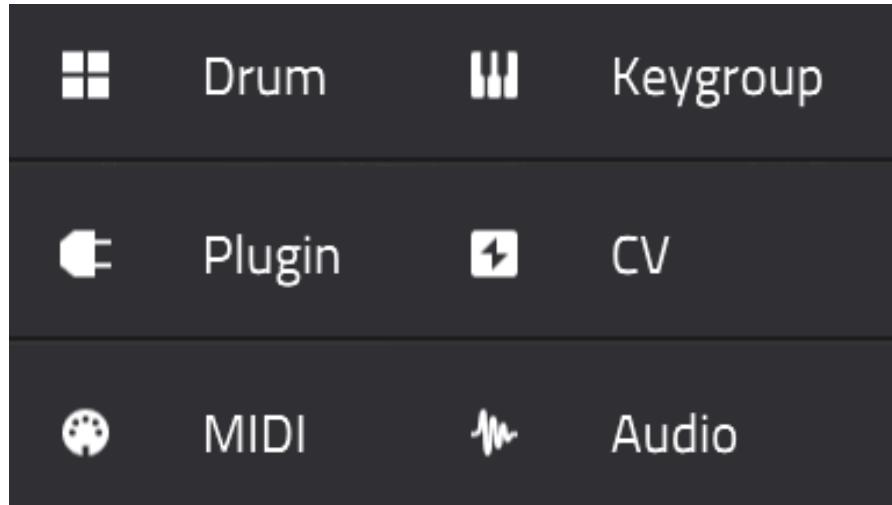
Underneath the sequence block is the **TRACK section**:



A track is where your actual performances are recorded to. A sequence can contain up to 128 unique tracks, each track manages its own set of sounds and performance data. When you play a sequence, all the individual tracks within it will play together in unison to create a multi-track performance.

The **track section** in MAIN is divided into two tabs. The default '**track tab**' tells us the **track number (1)**, the **track name** (currently **Drum 001** or **Plugin 001**).

The icon tells us the '**track type**' which refers to the type of sound the track is configured to trigger:



There are currently six different track types:

- **PLUGIN** type tracks trigger sounds from the MPC's range of internal plugin instruments (Tubesynth, Drumsynth, Bassline, Electric etc)
- **DRUM** tracks trigger individual samples (drums, melodic one shots, loops, chops etc) which have been assigned to the MPC's pads.
- **KEYGROUP** tracks trigger sounds from sampled melodic instruments (e.g. sampled piano, bass guitar etc).
- **MIDI** tracks trigger sounds from hardware synths connected to the MPC via a USB or traditional 5-pin MIDI connection
- **CV** tracks also trigger the sounds from externally connected hardware synths, but these send voltage and gate signals to modular synths using the CV outputs on supported MPC models.

- **AUDIO** tracks play back audio files and recorded performances such as vocals, live instrument recordings, backing tracks and so on.

When the MPC creates a new blank project, the default blank sequence varies slightly depending on your MPC model. For non-keyboard models, track 1 is always a DRUM track, while on MPC Key models you'll find track 1 in the default sequence is a PLUGIN track.

For the next part of this tutorial I want to load a drum kit to track 1, but as we'll soon see it doesn't matter if track 1 is currently a 'PLUGIN' track in your particular MPC model, as the loading process automatically changes the track type to match the 'sound source' being loaded.

LOADING A DRUM KIT TO A TRACK

In a new blank project, all tracks are initially 'empty' as they do not yet have any samples or instruments loaded into them and hence are not able to produce any sound. And without any sound source associated with a track, we will not be able to record any performances to it.

An easy way to assign sounds to a track is to load a ready-made **drum kit** to it.

Your MPC will already contain many drum kits in the included factory library although each MPC model features a different library. So to ensure we are all using the same kit, let's load one from the '**MPC Bible Project Files**' expansion (which we transferred to your MPC disk in **Chapter A02**).

WHAT IS A 'KIT'?

In sampling terms, a '**kit**' generally refers to a collection of samples that are meant to be played together, almost always containing 'one shot' drum samples (e.g. kick, snare, hats etc), but often with other sounds including melodic one shots (bass, pads, strings etc), sound FX, chopped breaks, and even loops.

In an MPC, a 'kit' can contain all of the above samples and is loaded into a DRUM track. Most importantly the samples within the kit will already be assigned to individual pads so they can be triggered as part of a performance (be it live finger drumming or as a pre-recorded MIDI sequence).

To load a drum kit from one of our already installed expansions, we can use the **SOUNDS BROWSER** which is one of two dedicated browsers in the MPC.

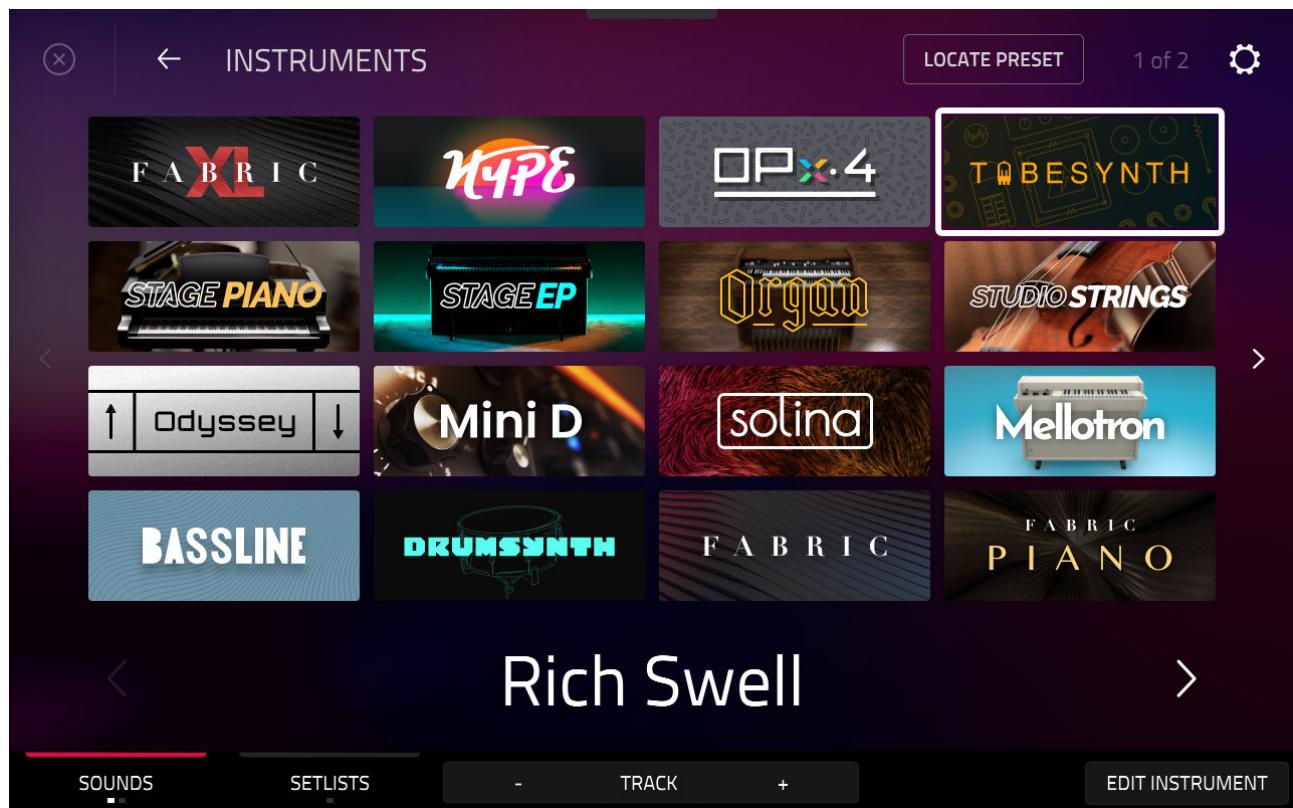
USING THE SOUNDS BROWSER

The Sounds Browser is exclusively used to load 'ready-made' kits, instruments and plugin presets. We can access the Sounds Browser directly from the MAIN screen by single tapping the **SOUNDS** icon on the left side of the screen:

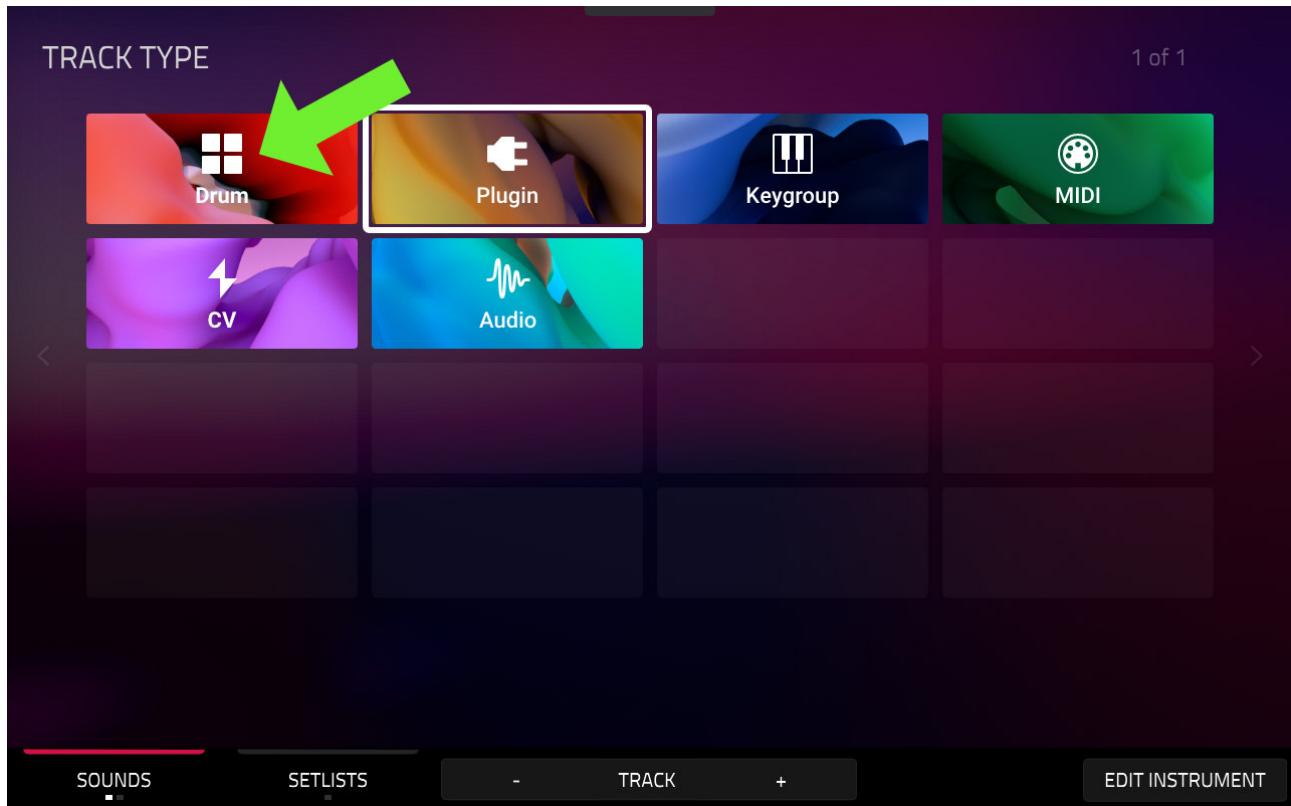


Some recent MPC models now feature a dedicated [**SOUNDS**] hardware button, but older models must rely on touchscreen buttons only.

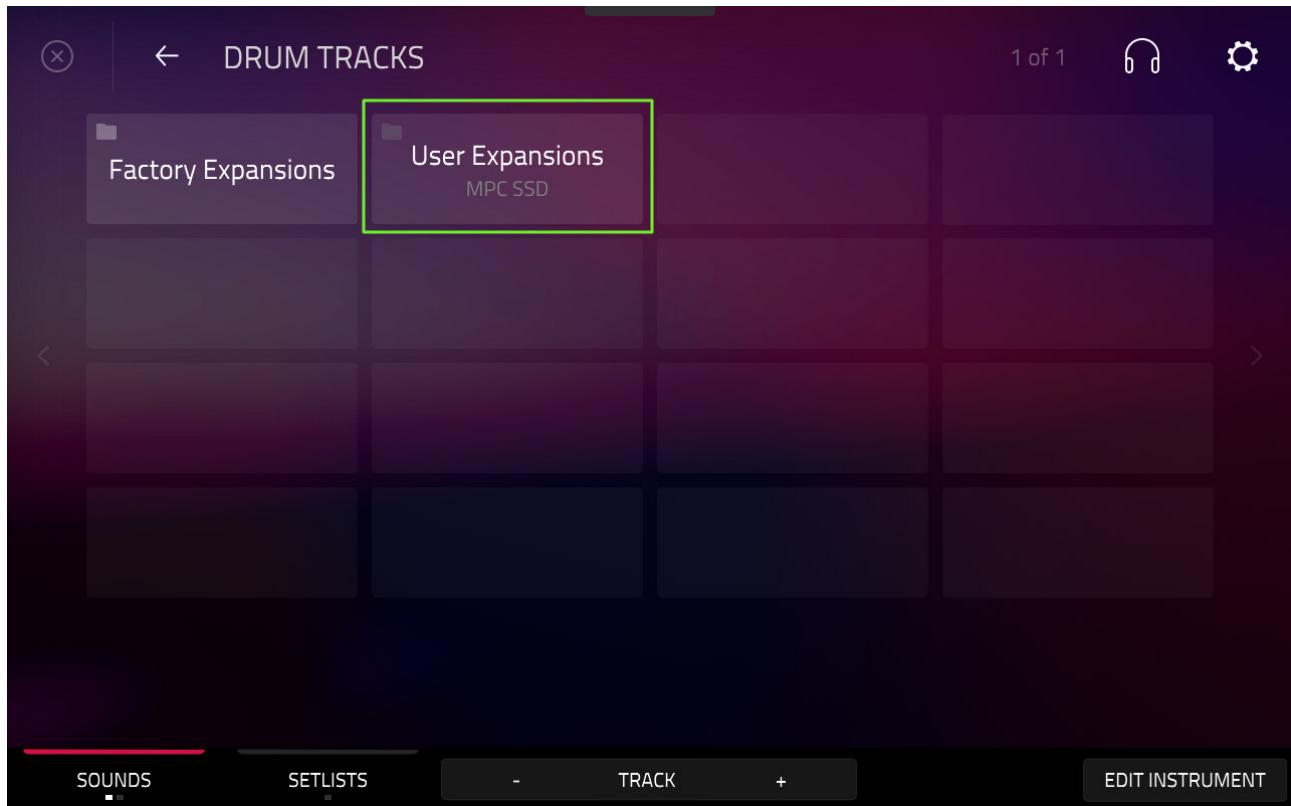
If track 1 in your MPC is a **PLUGIN** track (i.e. MPC Key 61, MPC Key 37), you'll be met with the following screen (the available plugins will depend on which ones you've installed):



Tap on **INSTRUMENTS** at the top of the page to take you to the **TRACK TYPE** screen:



Tap on **Drum** to take you to the **DRUM TRACKS** screen:



This has now simultaneously changed track 1 from a PLUGIN track to a DRUM track and presented you with the initial expansion page made for DRUM tracks.

If track 1 in your MPC model was already a DRUM type track then hitting the **SOUNDS** icon will simply take you directly to the above **DRUM TRACKS** screen.

You'll see shortcuts to the expansion locations on your MPC:

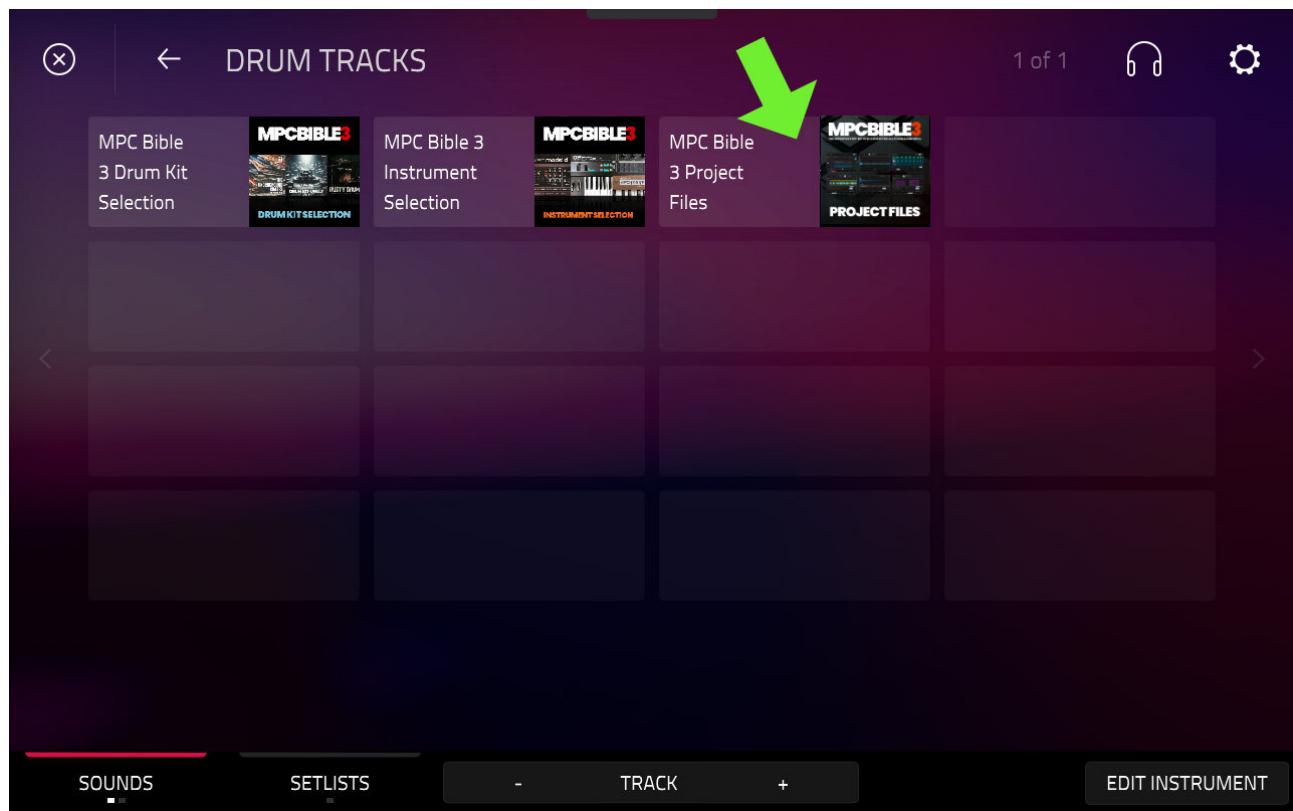
- **Factory Expansions** – this contains all the pre-installed 'factory' expansion content

- **User Expansions** – this contains all the third party expansion content you've copied to the 'Expansions' folder on your MPC disk (as per chapter **A02**).

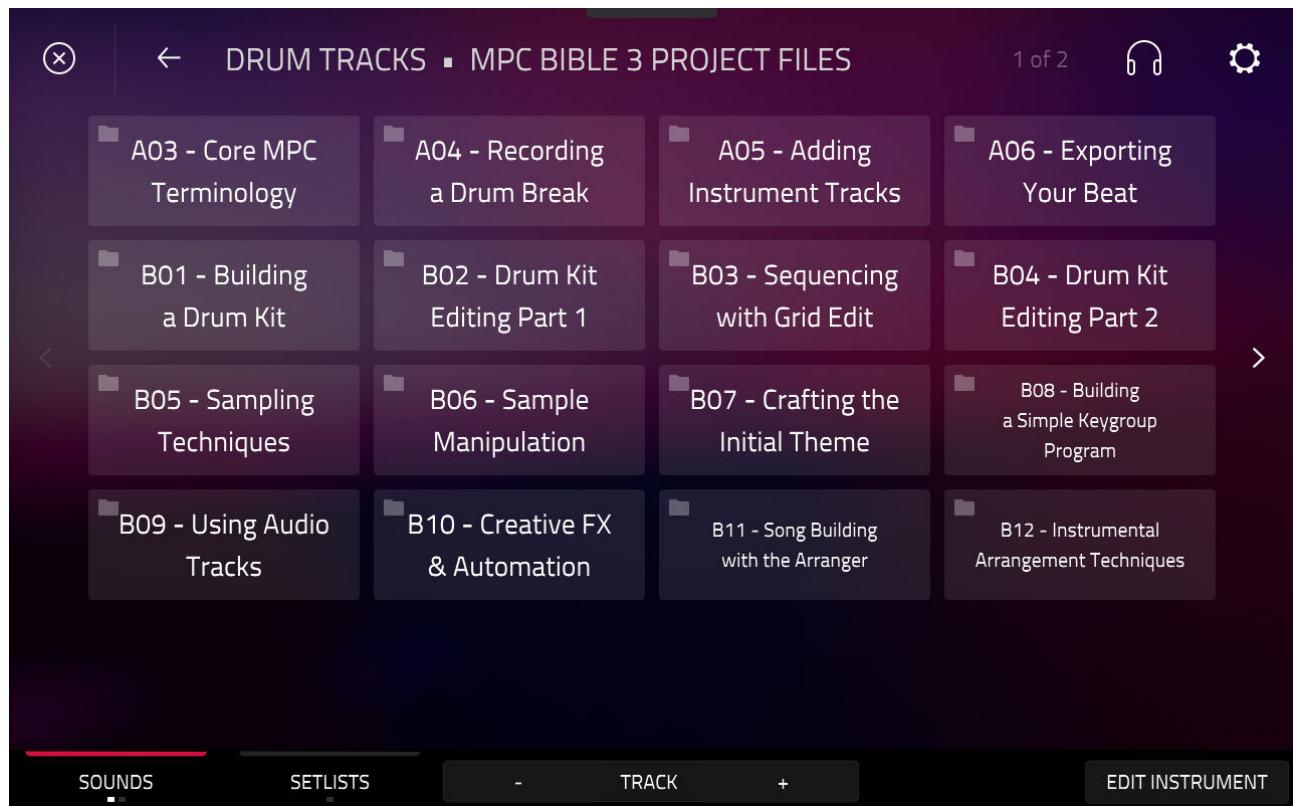


If you have multiple MPC disks, each containing its own 'Expansions' folder, then you'll see multiple 'User Expansions' boxes, one for each disk.

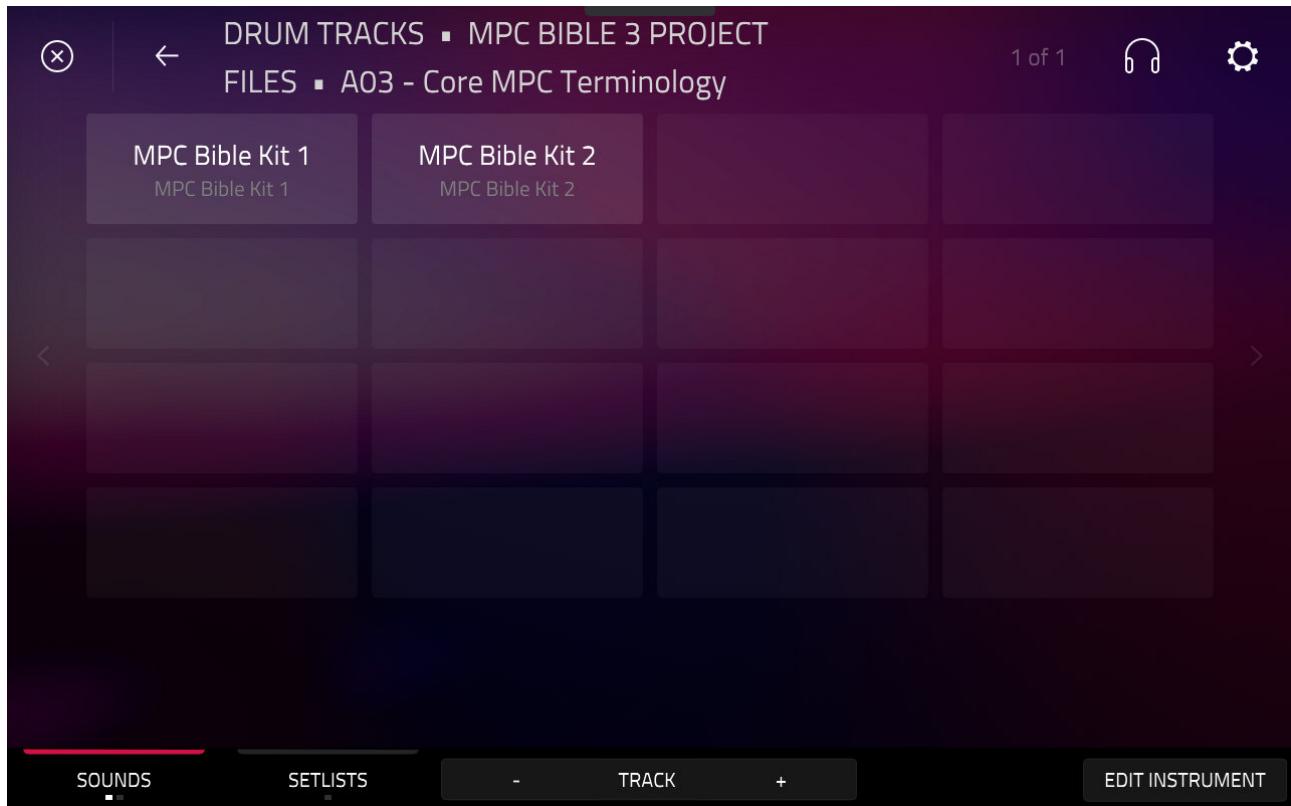
Tap on **User Expansions**:



Each installed expansion should show here in its own 'block' with its name and a thumbnail image. Tap on **MPC Bible 3 Project Files** to reveal its contents:



As you can see, the expansion has been organised into folders for various chapters throughout the book (note that 'folder' icon at the top left of each block). We are in chapter **A03**, so click on the **A03 – Core MPC Terminology** block to enter it:

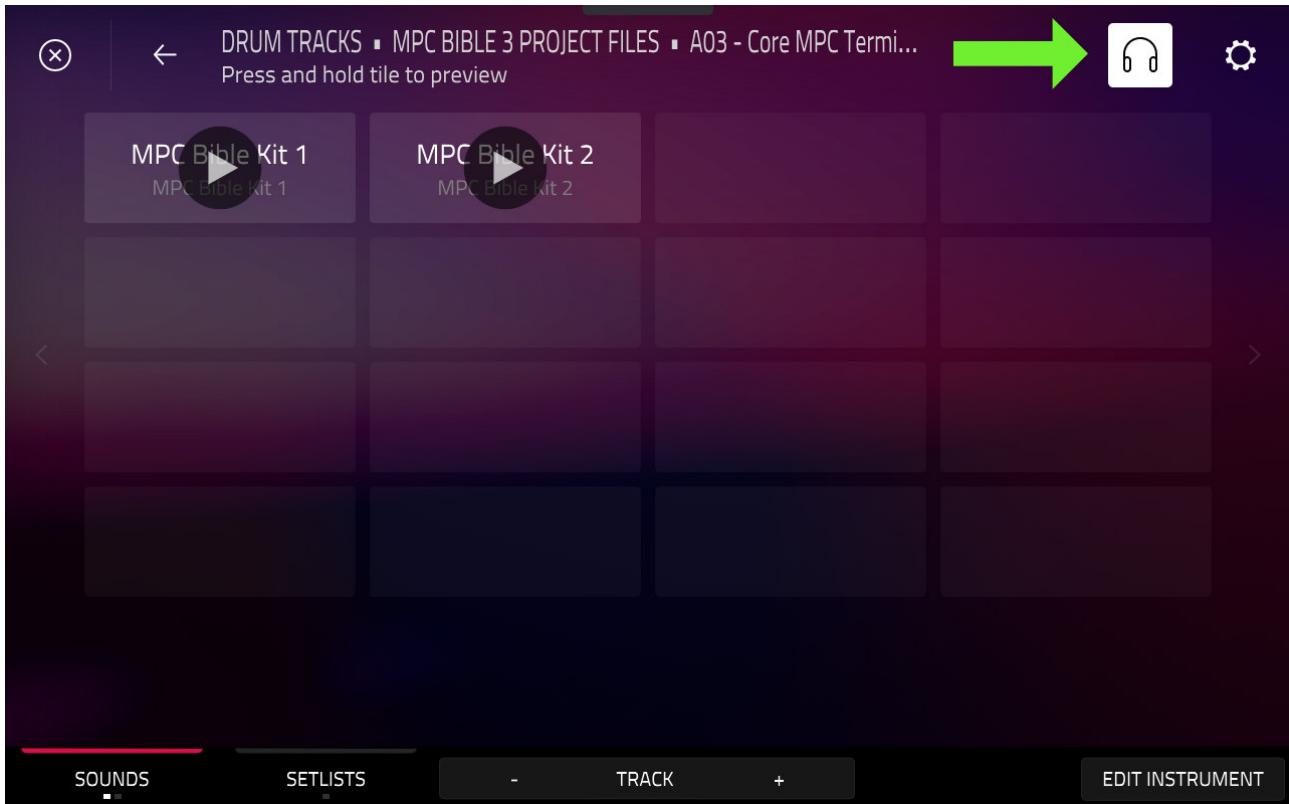


Here you'll see the two ready-made drum kits stored within this folder; '**MPC Bible Kit 1**' and '**MPC Bible Kit 2**'. This doesn't tell you much about these kits, so let's learn how to preview them.

PREVIEWING DRUM KITS

In most professionally made expansions the developer will have attached a short 'audio preview' to all the drum kits so you can hear the kit in action without having to load it.

To hear the preview I made for each kit, first tap on the '**headphone icon**' at the top right of the screen and you'll see the play buttons appear on any kit that has a preview attached to it:



To hear a preview, simply tap and hold on the play button for each kit.

Let's load '**MPC Bible Kit 1**'. Before you can load a kit you must first turn off the preview option, so tap the **headphone icon** again so the play buttons disappear.

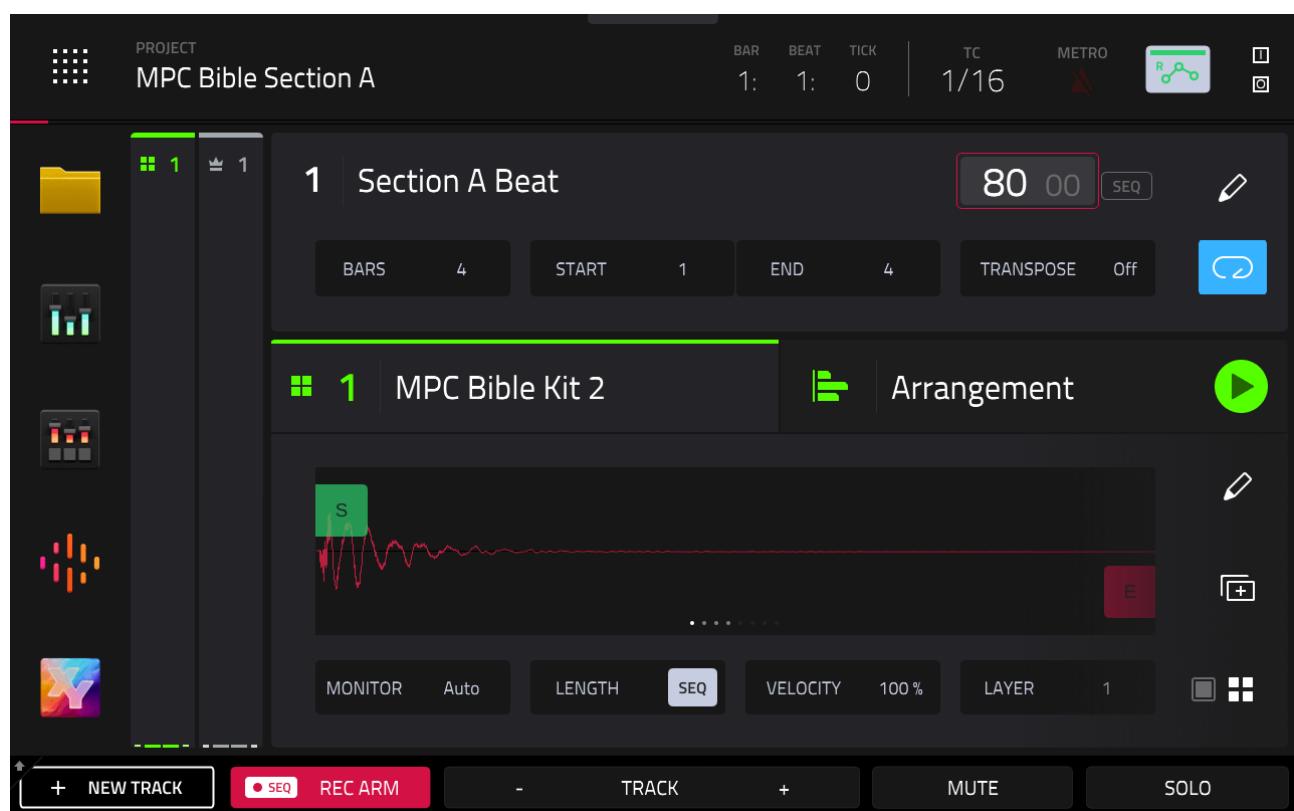
Single tap **MPC Bible Kit 1** and it will immediately load to your current track (track 1) – you'll briefly see progress bars while this happens and then you'll be taken back to the Sounds Browser with the message '*Loaded MPC Bible Kit 1*'.

The first thing you might notice is some of your pads have changed colour. This is because I configured this kit to use specific colours for each different

type of drum sound. Hit any of the coloured pads and you should hear drum samples being triggered. This is a good way to preview the sounds of a loaded kit 'in the flesh' without ever leaving the browser.

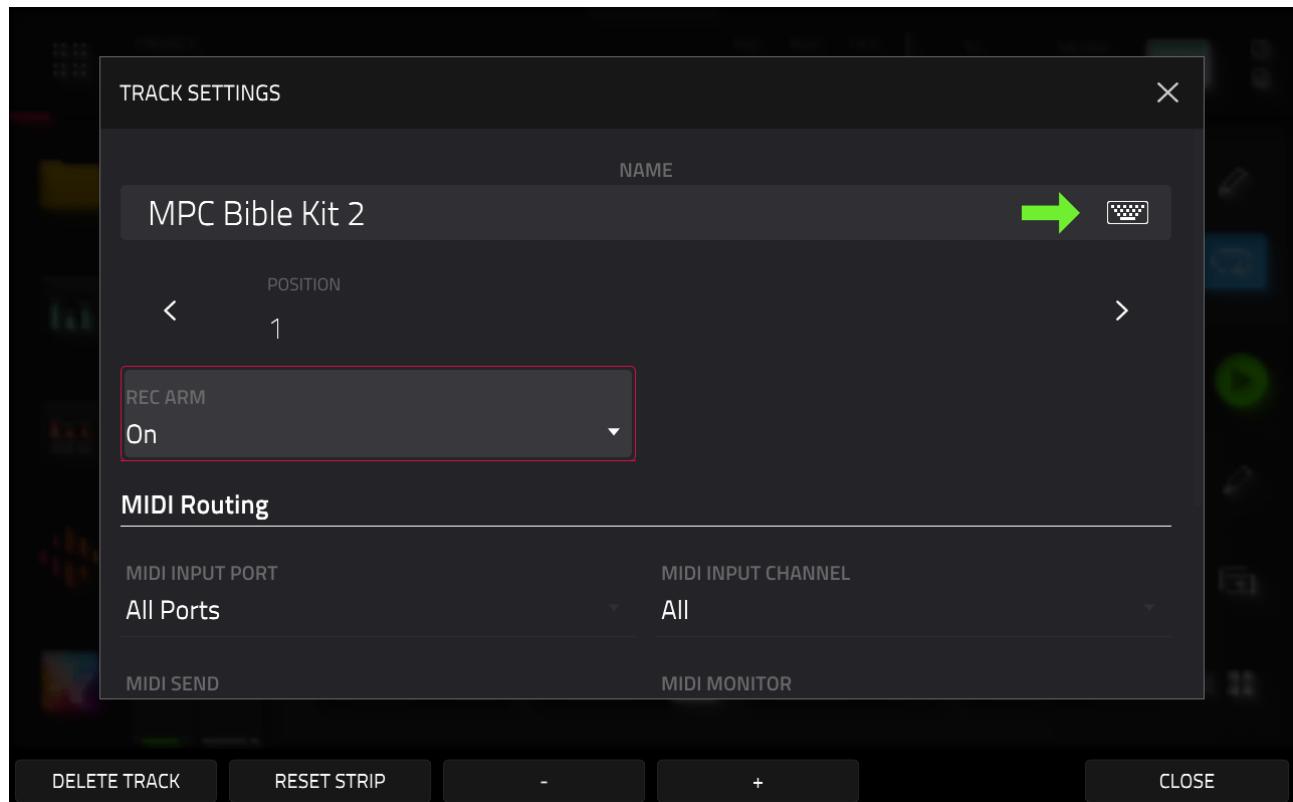
Don't like what you hear? No problem, just single tap '**MPC Bible Kit 2**' and this will load this new kit to the current track instead of 'MPC Bible Kit 1'. This process will completely remove the original kit (MPC Bible Kit 1) from memory, like it was never there.

Hit the [**MAIN**] hardware button to return to the MAIN screen:

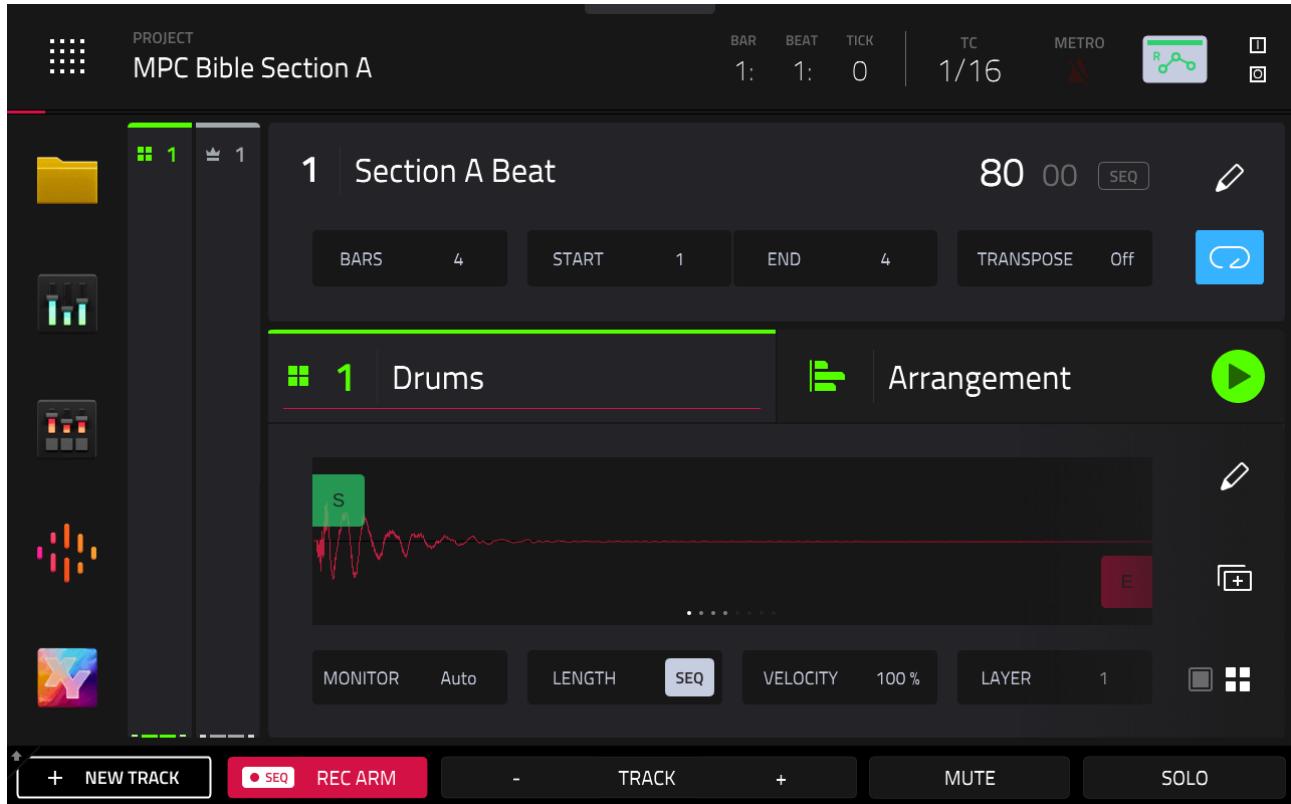


Notice that the track is now named after the last kit we loaded into it; **MPC Bible Kit 2**. But we can also choose a custom name for this track – press

and hold on the track name and you'll see the **TRACK SETTINGS** screen appear:



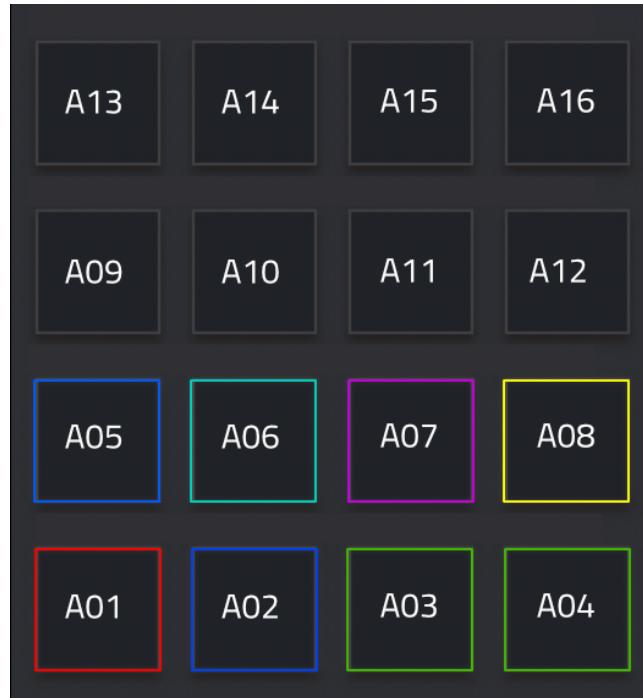
Tap on the **keyboard icon** on the top right side, enter the name '**Drums**' and hit **DO IT** then **CLOSE**:



Now let's play the kit we've loaded into this track. To do this we'll use the MPC pads. The **pads** are the MPC's built in 'controller' and provide a way of playing the sounds configured on the currently selected track.

There are a total of 16 velocity sensitive rubber pads on your MPC, but each track in an MPC can access an additional 112 'virtual' pads organised into a total of 8 'pad banks' selected via the physical **[PAD BANK]** buttons, giving a total of 128 pads.

By default the pads in a DRUM track are always set to **[BANK A]** which gives us access to the first 16 pads, called pads **[A01]** to **[A16]**, with numbering starting from the bottom left pad:



Hit pad **[A01]**. You should now hear a kick drum (often called a 'bass drum'). Now hit pad **[A02]** and you'll hear a snare. Pad **[A03]** is a 'closed' hi hat and pad **[A04]** is an 'open' hi hat.

On the remaining coloured pads you'll find a selection of different drum and percussion sounds, so give them all a try.



MPC pads are not coloured this way by default but can easily be set to any colours you wish via a special screen which we'll learn how to use later in the course.

Each time you hit one of the pads in a DRUM track you'll see the audio waveform of the currently sample itself appear within the track tab:



You've probably noticed that pads [A09]–[A16] are silent, this is because in this kit these pads were never assigned any samples. We'll take a much deeper look at creating our own drum kits later in the course, but for the moment let's use this kit to build a short drum performance.

A04: RECORDING A DRUM BREAK

We've set up our core sequence variables with a drum kit loaded into track 1. Let's now record a simple drum break using our pads.

TOPICS COVERED IN THIS CHAPTER

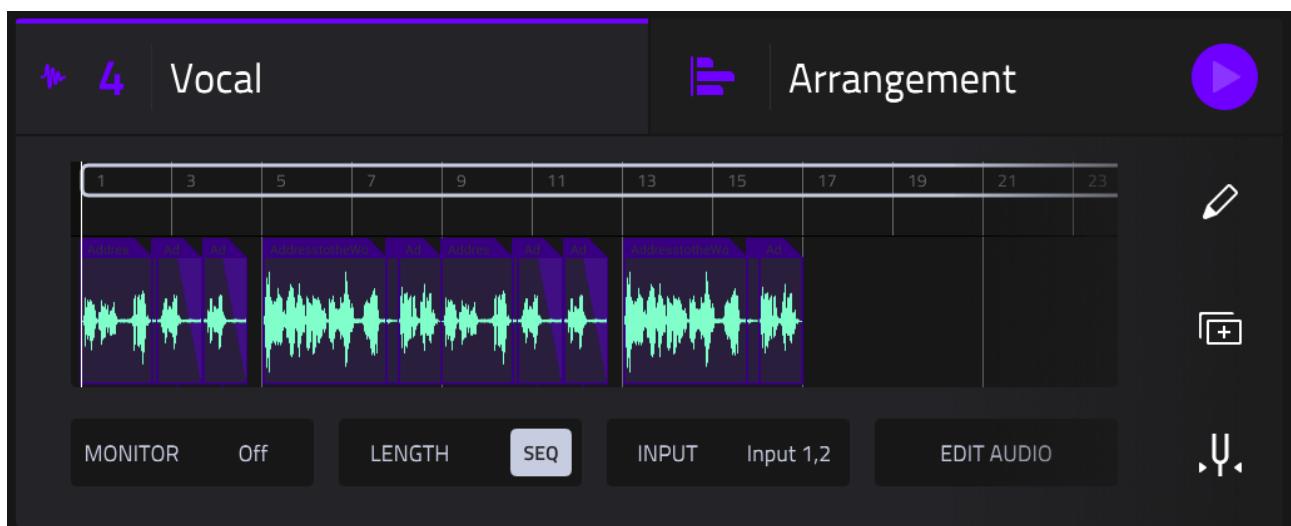
- ✓ MIDI basics
- ✓ Real time recording
- ✓ Using Note Repeat
- ✓ Overdubbing
- ✓ Using 'ERASE'
- ✓ Saving your work
- ✓ Using MIDI patterns

In this section of the course I'm going to avoid using any 'deep dive' editing menus and instead use some of the MPC's more 'hands on' sequencing features. It's also a great way for you to become more comfortable with the concepts of multitrack sequencing.

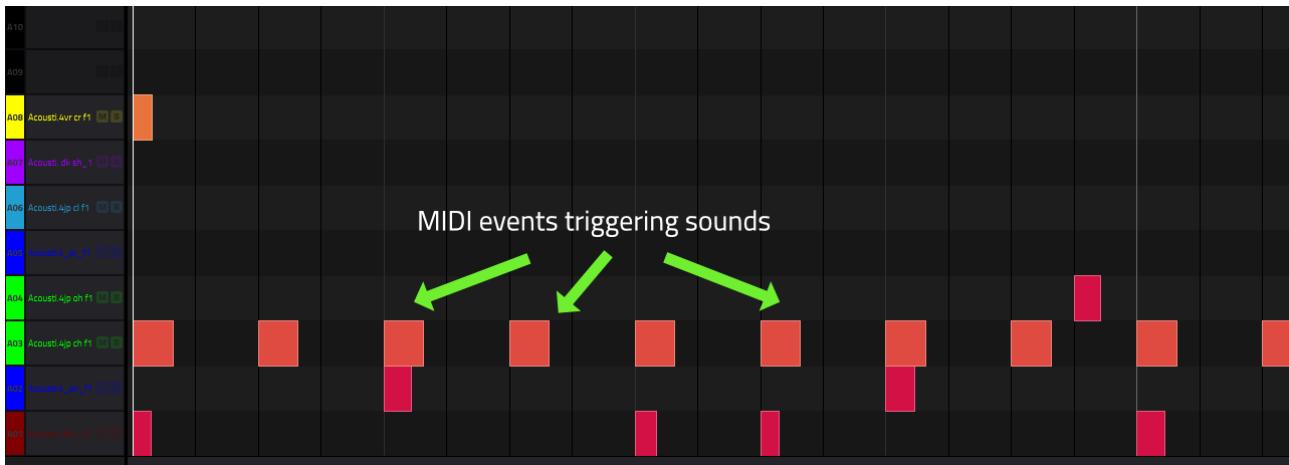
UNDERSTANDING MIDI

There are effectively two ways we can record 'performances' into an MPC and it depends on the type of sound we are trying to capture.

When we record a performance such as a vocal or live acoustic guitar playing, we record this as pure '**audio**', typically directly to one of your sequence's audio tracks. The entire performance is effectively captured as one long audio sample.



However, when we record a performance from a plugin instrument, a drum kit, a sampled instrument or external hardware synth, we typically record this as a collection of **MIDI** events which 'trigger' the sounds from the connected instrument.



So what exactly is 'MIDI'? **MIDI** stands for **Musical Instrument Digital Interface**, and is a standard protocol that is used for communication between electronic musical instruments.

The MPC itself is classed as a **MIDI sequencer**, which means it is able to record and play back **MIDI events** that in turn can trigger sounds from connected MIDI instruments.

In the MPC, a 'MIDI instrument' is anything that can be triggered from MIDI events, such as a preset within a PLUGIN instrument, a drum kit loaded to a DRUM track, a sampled instrument on a KEYGROUP track or a hardware synth connected to the MPC's MIDI ports.

Each individual MIDI event is basically an 'instruction' that the MPC sends to a MIDI instrument. For example, here's a basic MIDI instruction written in plain English:

'At the very start of the sequence, play a C1 note for 3 seconds'

So let's say our 'MIDI instrument' is a sampled piano loaded into a KEYGROUP track. If we use MIDI to tell the piano instrument to 'play a C1 note for 3 seconds', it will do exactly that; you'll hear a C1 piano note play for 3 seconds.

And if we chain together multiple MIDI events over time we can get that piano instrument to play a complete piano melody or chord sequence.

Similarly if the MIDI sound source is a drum kit on a DRUM track, then we can use MIDI to instruct the kit to 'play a kick at 1:1:00, followed by a closed hi hat at 1:1:48'. Chain a bunch of these MIDI instructions together and we have a drum beat.



It's important to understand that MIDI data and MIDI tracks do not contain any actual audio. The audio we hear comes from the instrument that we are sending MIDI 'commands' to.

As we'll see later in this course, the beauty of MIDI is that it can be easily edited and manipulated, making it incredibly flexible, especially when compared to working with pure audio data.

REAL TIME RECORDING SETTINGS

With our drum kit loaded and our sequence configured we're nearly ready to start recording our drum break performance. There's several ways to 'create' a performance in the MPC and we'll look at all of them throughout the course, but perhaps the easiest way to quickly lay down something onto a sequence track in real time.

We previously configured the 'core' sequence settings for our beat, but when recording a MIDI performance like this in real time there's a few additional settings we need to consider which may change the way our performance is actually 'captured' as MIDI.

CONTROLLING INPUT VELOCITY

When playing the MPC pads (or any other MIDI Controller), the force at which you strike that pad is called the **velocity** and this is measured on a scale of 0 to 127, where 127 is the hardest hit possible (in MIDI terms).

The MPC pads are fully **velocity sensitive** – this means they register the exact velocity at which you strike the pad, from the softest touches to the hardest bashes; they then subsequently send that velocity information directly to the sequencer. So not only is the MPC sequencer going to record *which* pad you strike and at which sequence *time* you hit it, it's also going to use 'velocity' to register *how hard* you hit it (amongst many other parameters that we'll discover later in the course).

We can actually override the pad's natural velocity sensitivity using the **FULL LEVEL** button on your MPC hardware.



With this engaged, every single pad hit is going to be at the 'full' velocity of 127, even if we only give it the lightest of touches. Let's test it out.

First, make sure [**FULL LEVEL**] is **off** (unlit) and start playing pad [**A01**] of our kit (the kick) at varying degrees of hardness. As you can hear, soft pad hits produce a quieter kick sound, while hard pad hits produce a louder kick.

Now press [**FULL LEVEL**] to turn it **ON**. No matter how hard or softly you hit the pad, the MPC's response is to play the kick at the maximum velocity of 127.

Using FULL LEVEL is useful when you want to ensure all events are at a consistent velocity and is generally a good beginner's setting. However, as you become more skilled with the pads you'll eventually develop the ability to control pad velocity yourself and will most likely record with FULL LEVEL 'off'. Later in the course we'll be looking at the various ways we can create more natural, dynamic performances in the MPC sequencer.

For this example, let's set **FULL LEVEL 'ON'**.

VELOCITY VS VOLUME?

A tricky concept for beginners to understand is the difference between **velocity** and **volume**. Velocity is a MIDI-specific measure of how hard you strike a pad (or how hard you play the key on a MIDI controller), while volume is a measure of how 'loud' the actual audio output of the resulting generated audio is (measured in decibels, dB).

More often than not, the two are directly related (hard velocity normally equals loud volume, soft velocity equals low volume), but as we'll see later in the course, velocity can also be used to control other responses in instruments beyond 'volume', such as filter and pitch.

CONFIGURING TIMING CORRECT

The MPC sequencer is able to record MIDI performances at a very high resolution so should capture everything exactly as you originally played it. However, this might not always be a good thing as sometimes your timing may be a little, er, sloppy!

When starting out it's often helpful to take advantage of the MPC's helping hand by using **Timing Correct** (also known as '**quantising**'). With Timing Correct the MPC will force all the notes you play to adhere to a specific 'time division grid', which can give your performances a super tight feel.

Timing correct can be applied to the events in a performance while you play or can be retrospectively applied to a previously recorded performance. Quite a lot of modern electronic music is created using some form of timing correction.

By default you'll find all new projects use a timing division setting of **1/16** which will effectively reduce the resolution of your sequencer to only allow your events to be recorded at 1/16th note intervals.

Assuming a 4/4 time signature, each beat contains 960 'ticks', so at a 1/16th timing correction the MPC will only allow notes to be placed at 0, 240, 480

and 720 'ticks' within each beat. So from a possible 960 positions per beat, 1/16th quantising reduces this to just 4 events per beat.

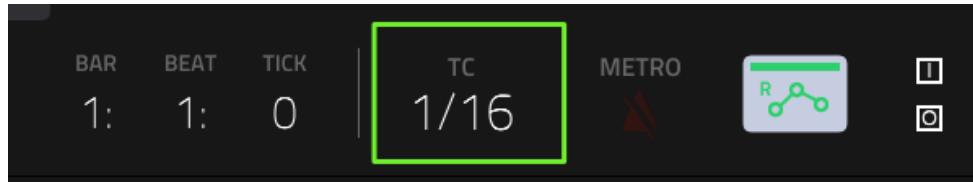


So for example, when if you play a kick drum pad at **1:1:005** the MPC actually records that MIDI event at the nearest 1/16th grid (quantize) point, which is **1:1:000**, thus ensuring that upon playback, your kick actually plays exactly at the start of the sequence.

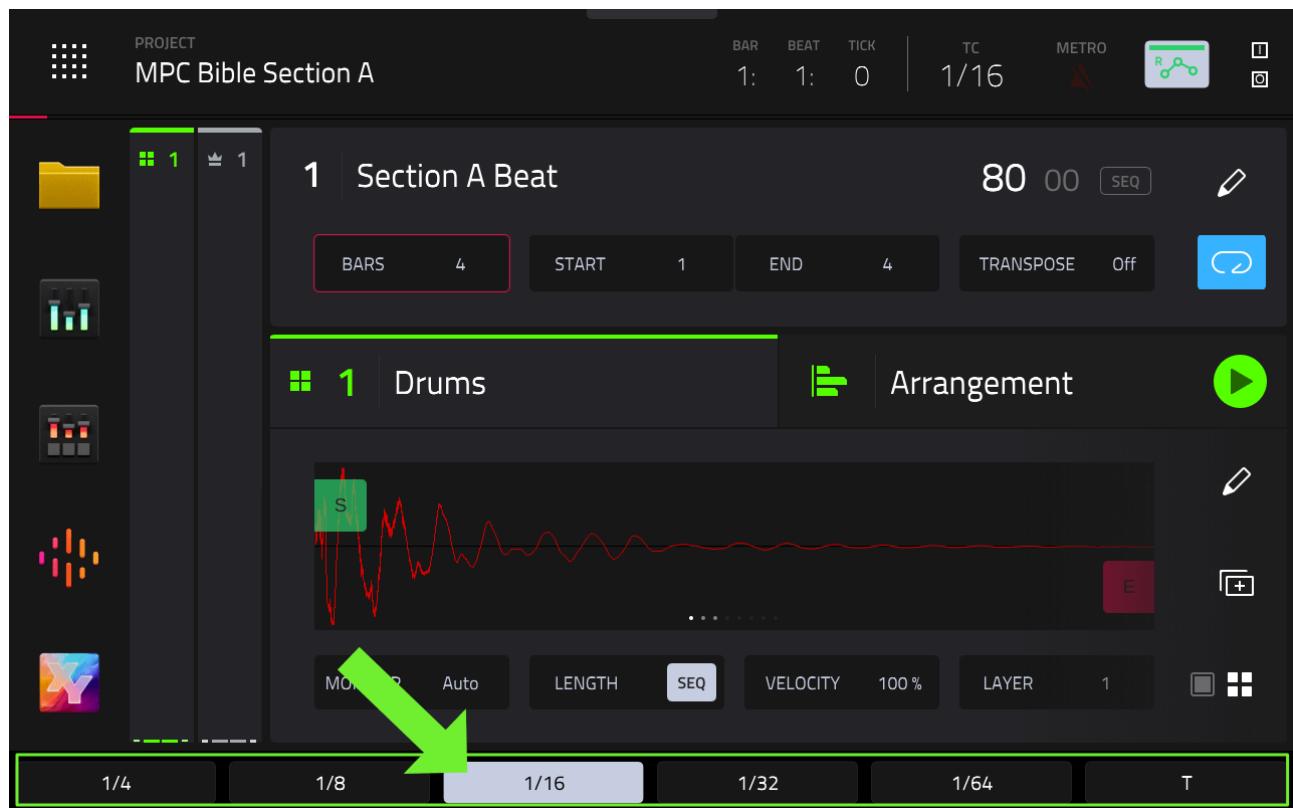
Play a snare at **1:1:944** and when this event is recorded, the snare actually gets pushed a little forward as the nearest 1/16th quantise point is **1:2:000**.

As you can imagine, forcing the notes into specific time locations like this will guarantee your performances are very 'tight' and will compensate for any sloppy playing. The downside is that they can also lose some of that natural human feel, making them sound a little robotic, but this is something we'll be addressing at various points within the course.

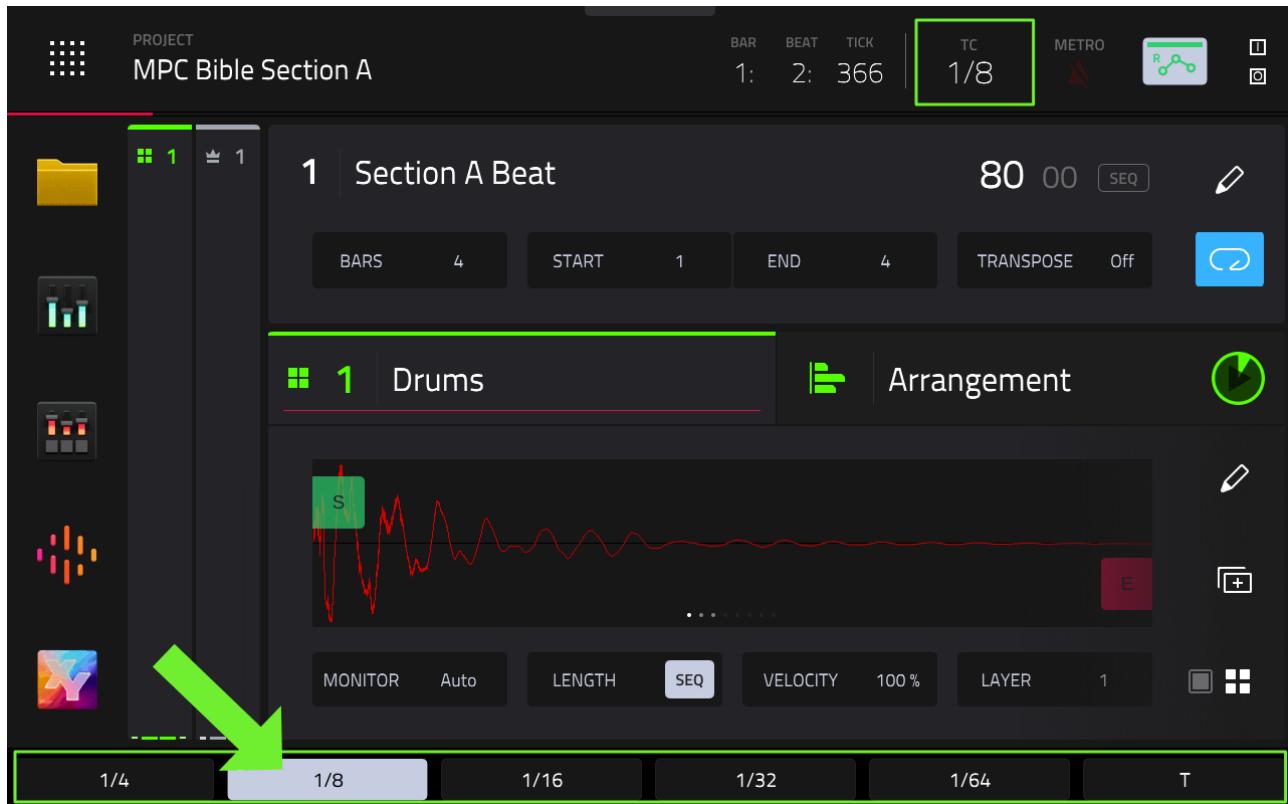
The current timing correct settings (**TC**) for your project are always shown in the title bar; if this is displayed as white text then it is currently 'active':



There's a few ways to change basic Timing Correct settings, but the easiest method in MAIN is to simply hold down the [**NOTE REPEAT**] hardware button – this displays all the different **timing divisions** available:

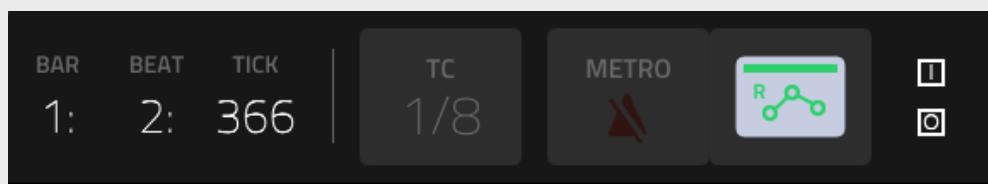


The currently selected timing division (1/16) is highlighted in white; let's instead set **Time Division** to **1/8**:



TURNING OFF TIMING CORRECT

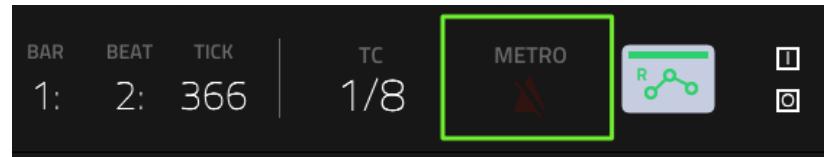
If you prefer to record without any timing correction applied, a quick shortcut to disable it is to hold down **[SHIFT]** and tap on the **TC** icon in the toolbar so it turns grey:



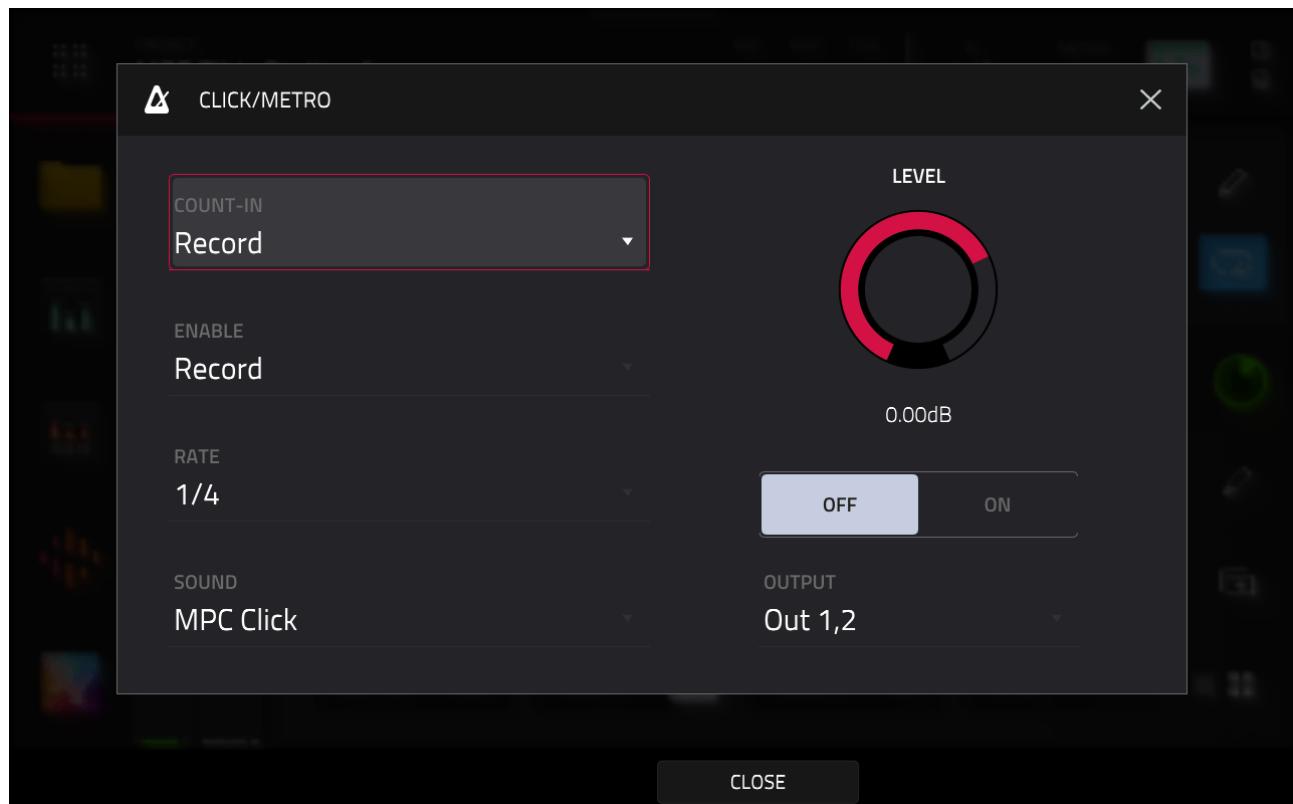
Alternatively, you can hold down **[NOTE REPEAT]** and tap on the currently selected TC value so it turns black instead of white.

CONFIGURING THE METRONOME

Before we record anything, tap on the **METRONOME** icon at the top right of the toolbar:



This brings up the **CLICK/METRO** screen.



The metronome is a repeating 'click' that can play in the background whenever you record in the sequencer and will help you keep time with the tempo of the sequence. It's the MPC version of one of these:



The default configuration will give you a one bar count in (very handy if you want to start recording precisely on the first beat) and will play a classic 'MPC click' sound 4 times every bar. With these default settings, the metronome is only heard when recording and is disabled during normal playback.

You can change the metronome sound to a number of preset percussion sounds if you wish – just tap **MPC Click** and turn the (DATA WHEEL) anticlockwise. The other settings you can change at a later date should you need to, but I tend to prefer these defaults.

Why use a metronome when we are already using Timing correct? Well, timing correct is there is fix *small* timing errors – larger timing mistakes will likely get 'corrected' to a completely incorrect location.



Use the shortcut [SHIFT] + [PLAY START] to quickly switch metronome on/off. Alternatively, hold down [SHIFT] and tap the white metronome icon in the top tool bar so it turns red.

ARMING THE TRACK

Before you can record to any track, it must be 'armed'. This means it is primed and ready to record any incoming performances. Your track should already be armed by default, but to check, make sure the **REC ARM** button at the bottom of MAIN is red, not black:



If it isn't red, simply tap it to 'arm' the track.

RECORDING THE DRUMS

With our sequence now fully set up and ready to capture your performance, it's time to record some drums to this track. There's often two schools of thought when it comes to recording drums in real time. Some people love to go for the full finger drumming option, literally playing all the drums like a real drummer would.

The other option is to record drum parts individually, or in smaller, more manageable groups of instruments. For beginners, this is usually the easiest method as it avoids having to coordinate multiple drum parts across both hands simultaneously. Let's try this method, by first laying down some closed hats, and then overdubbing a boom bap' kick/snare pattern.

CREATING A HI HAT PATTERN WITH NOTE REPEAT

The simplest hi hat patterns consist of a closed hat repeated at regular intervals, which we could play manually by repeatedly tapping the closed hat pad [A03]. However, the MPC has a cool little function that makes creating these types of basic hi hat patterns really easy.

Hold down the [**NOTE REPEAT**] button – we discovered previously that this brings up the various timing division options for 'Timing Correct' (which should still be set as 1/8th). However the primary function of note repeat is, you guessed it, to allow us to easily 'repeat' notes.

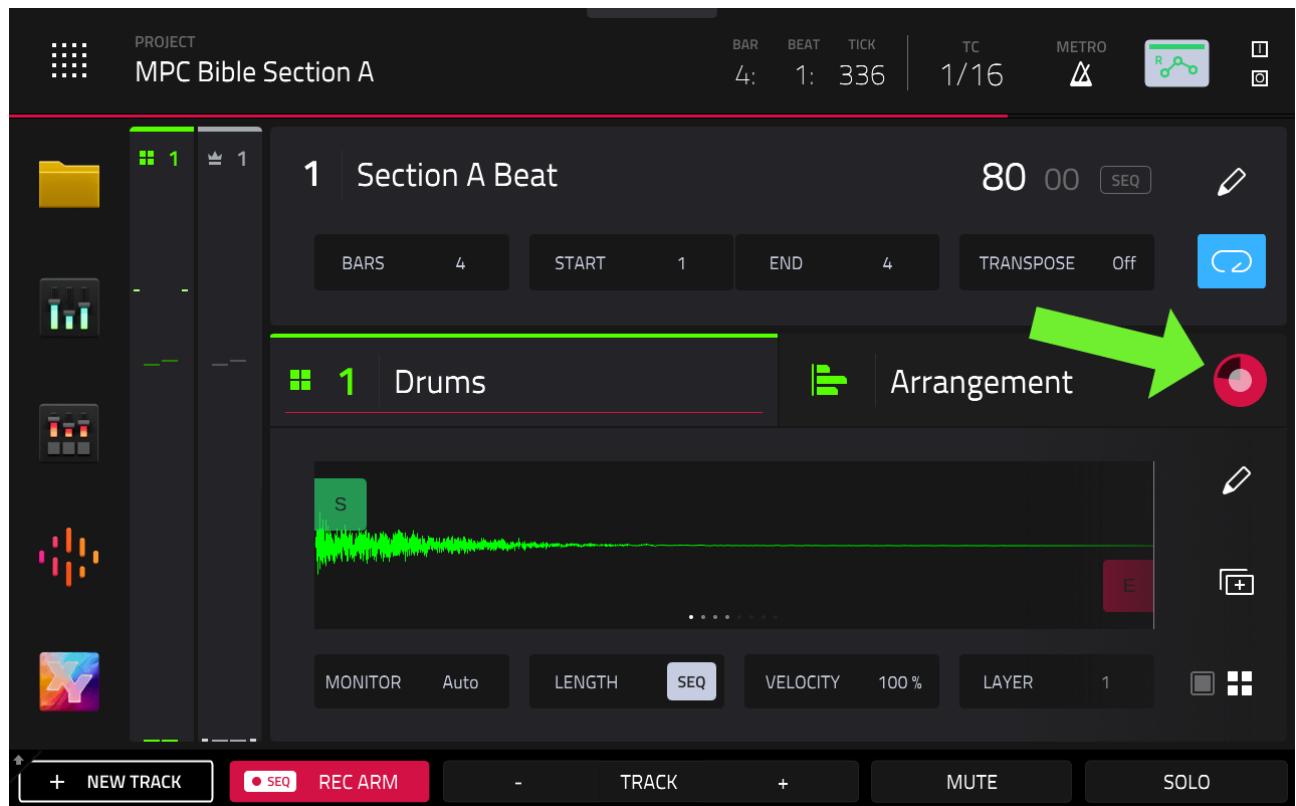
While still holding down [**NOTE REPEAT**], press and hold our closed hat on pad [**A03**]. You should hear the hat continually repeat every 1/8th of a bar, creating a simple repeating hi hat pattern. Let's record that repeated 1/8th hat pattern to our track.

Hit the hardware [**REC**] button to put the MPC into 'record ready' mode – you should see the message '**Recording To: Arrangement**' appear on screen and the [**REC**] and [**PLAY**] buttons begin to flash.

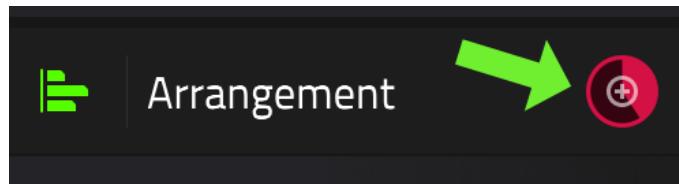
To begin recording, press the [**PLAY START**] button; [**PLAY START**] will always start playing your sequence from the very beginning (time location 1: 01: 000). While this countdown is happening, hold down [**NOTE REPEAT**] and get ready to press and hold pad [**A03**].

As soon as the count down is nearly complete you can now also hold down pad [A03] – it doesn't matter if any of the hats play before the count down is complete as the MPC Will just ignore them. Once the countdown finishes, the MPC starts recording – the [**REC**] remains red and you'll see the

playhead moving onscreen. You'll also see the circular icon next to the word 'Arrangement' turn from the green 'play mode' circle into a spinning red circle to indicate 'record mode':



Your sequence will continue recording until it reaches the end of the 4 bars of the sequence. However, as the sequence is set to the default '**LOOP:ON**', it will at this point return to the beginning of the sequence and *continue* to actively record. However at this point, the sequencer has now entered '**OVERDUB**' mode, so you should now notice that the REC button is no longer lit, instead the [**OVERDUB**] button is lit and the 'record mode' circle have turned into an 'overdub mode' circle:



In OVERDUB mode the MPC retains all the events you recorded in the initial 'REC' pass and lets you *add* (or 'overdub') further events on top of that existing recording. Once the MPC enters OVERDUB mode it remains looping in overdub mode until you press [STOP], so you can add many layers to your performance if you wish, simply by overdubbing in multiple 'passes'.

While the MPC continues playing in 'overdub' mode, you should now hear the hi hat pattern you previously recorded, along with the metronome click. To leave OVERDUB mode you can either press the [OVERDUB] button (in which case normal playback will just continue), or you can just press [STOP] and then press [PLAY START] to listen back to what you recorded.

ADDING KICKS & SNARES

The kicks and snares provide a strong 'backbeat' for your drums. I find it easier to lay down the kick and snare together in one 'pass', with my left index finger playing the kick on pad [A01] and my right index finger playing the snare on pad [A02]. Alternatively just use two fingers on the same hand.

This time, let's record the kick and snare using a 1/16th timing correction (quantise) which will give us a bit more freedom than the 1/18th T.C. Hold down [NOTE REPEAT] and tap on the [1/16] button.

Before recording, practice the pattern you are going to play until you feel comfortable performing it. Don't stress about the recording though, we can easily fix or erase any mistakes or even completely undo everything and start again, completely hassle free.

This time we will not use the [RECORD] button, because if we do it will erase existing notes as plays through the sequence. Instead press the [**OVERDUB**] button – this time you'll see the OVERDUB and PLAY buttons start blinking, along with the message 'Overdubbing: To Arrangement'.

Press [**PLAY START**] and you will hear the 1 bar count-in (1, 2, 3, 4). As soon as the count down is complete you can begin recording your kick/snare backbeat using pads [**A01**] and [**A02**].

DEALING WITH MISTAKES

One advantage of a MIDI sequencer is that it is very easy to fix mistakes or to even re-record everything all over again.

If you don't like the drum pattern you just recorded, then no problem. Just hit the physical [**UNDO**] button:



Pressing the [UNDO] button once will 'undo' the last 'thing' you did. In UNDO terms, the entire act of recording that kick/snare pattern is considered one UNDO step; that is, the entire recording session from pressing [OVERDUB] + [PLAY START] until you pressed [STOP].

We can undo multiple 'events' by pressing UNDO multiple times. As long as 'UNDO' is still lit, then there are still 'undos' available to perform.



Changed your mind about an undo? Hold down [SHIFT] and hit [UNDO] to perform a {REDO}. Just like UNDO, you can 'REDO' multiple actions by continually pressing REDO.

Alternatively if you really don't like your sequence and just want to start all over again, another option is to simply hit [REC] and [PLAY START]. This will put the MPC back into standard recording mode – now as the sequence plays through, it will record any new events you play but any existing events the MPC comes across will be deleted; including the original hit hat pattern!

OVERDUBBING INDIVIDUAL EVENTS

So far we've been using NOTE REPEAT to make it easy to add multiple, perfectly timed events to our track. Now let's now try overdubbing an individual **crash** event. This time we will not need to use NOTE REPEAT, we'll simply hit the crash pad [**A08**] when required.

However we'll still continue to use 'Timing correct' to ensure the crash we do add is still 'in time' with the rest of the beat. We'll continue using the existing **timing division of 1/16**.

This time instead of using [FULL LEVEL], double tap the **[FULL LEVEL]** button so it turns yellow – this means it's now set to **{HALF LEVEL}** so each pad hit will be registered at a velocity of 64 instead of 127, effectively making these crashes lower in volume.

Hit **[OVERDUB]** and **[PLAY START]** and hit pad **[A04]** to insert a crash at the very beginning of the sequence and then another at the start of bar 3.

Remember, if you press '**[STOP]**' before starting any recording session it creates a unique 'undo-able' action. However you can of course just lay down all your drums in one single recording session; just hit **[REC]** + **[PLAY START]** and lay down all the elements in one session, utilising **[OVERDUB]** to add layers of drums (including an open hat and a snare roll from pad **[A05]**) while the sequence loops. Turn off **[FULL LEVEL]** to enter some of the events with a more 'freestyle' velocity.



Later in the course we'll be deep diving into the real guts of the sequencer, learning how to edit and manipulate recorded events using screens like GRID EDIT, LIST EDIT and SEQUENCE EDIT.

REMOVING EVENTS WITH ERASE

Let's say we like the drums but want to take out one or two recorded events, for example removing the crash at the start of bar 3.

Later in the course we'll learn all about 'granular' editing of recorded sequences using screens like GRID EDIT ('the piano roll'), LIST EDIT and the 'Arranger', but for our fast-track overview I'm going to show you a way of removing events that requires no 'deep diving' whatsoever.

Hit [**PLAY START**] (no REC or OVERDUB needed), hold down the [**ERASE**] hardware button, and just as the sequence is about to trigger that crash at the start of bar 3 (**3:1:000**), hold down the crash pad [**A08**] as well. This combination of [ERASE] and pad [A08] ensure that when the sequence 'passes' that particular crash event, the MPC will erase it (but any events from other pads will be unaffected).

Just make sure you release pad [A08] (or release the [ERASE] button) before the sequence passes the other crash (at 1:1:0), otherwise it will erase that one as well!

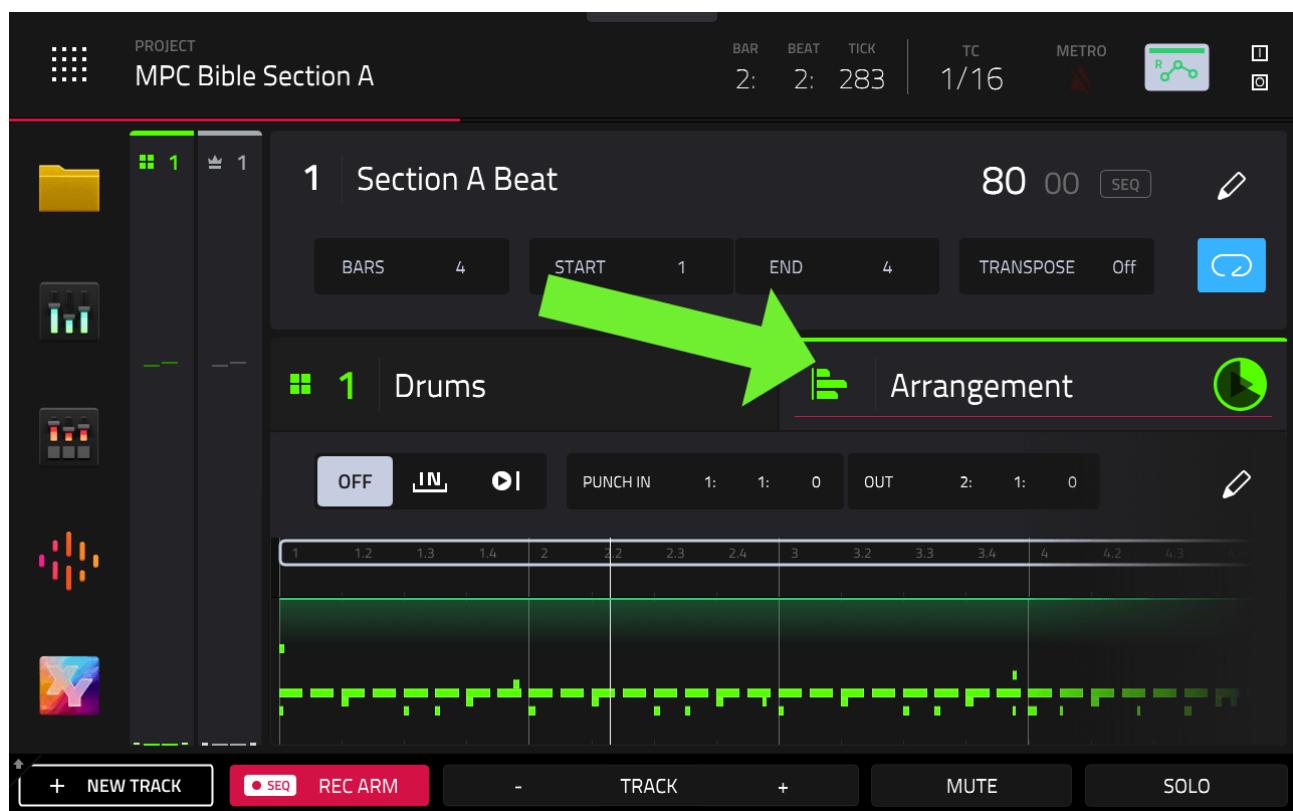
When using the ERASE button like this, you can erase any existing event in real time, you just need to be holding down the pad that relates to the events you wish to remove.

Later in the course we'll look at many other ways to remove or silence events in a track including mutes and automation.

VIEWING MIDI EVENTS IN THE ARRANGEMENT TAB

So far we've been using the **Track tab** which displays the waveform of the sample assigned to the currently played pad. Now tap on the

Arrangement tab:



This shows the MIDI events that make up the performance as coloured 'blocks' within the arrangement tab. Each event in the arrangement represents one of the pad hits you recorded and this is what is triggering the various drum sounds from within the track.

The Arrangement tab is purely 'visual', but in the next section of the course we'll learn how we can directly edit and manipulate this MIDI event data using a number of different 'hands on' tools.

SAVE YOUR WORK IN PROGRESS

At this point, make sure you save all your work by saving your '**MPC Bible Section A**' project. As you already initially saved the project at the start of chapter A03, all you need to do is hit [**MENU**] > **SAVE** > **Project** or if you have one, use the dedicated hardware [**SAVE**] button.

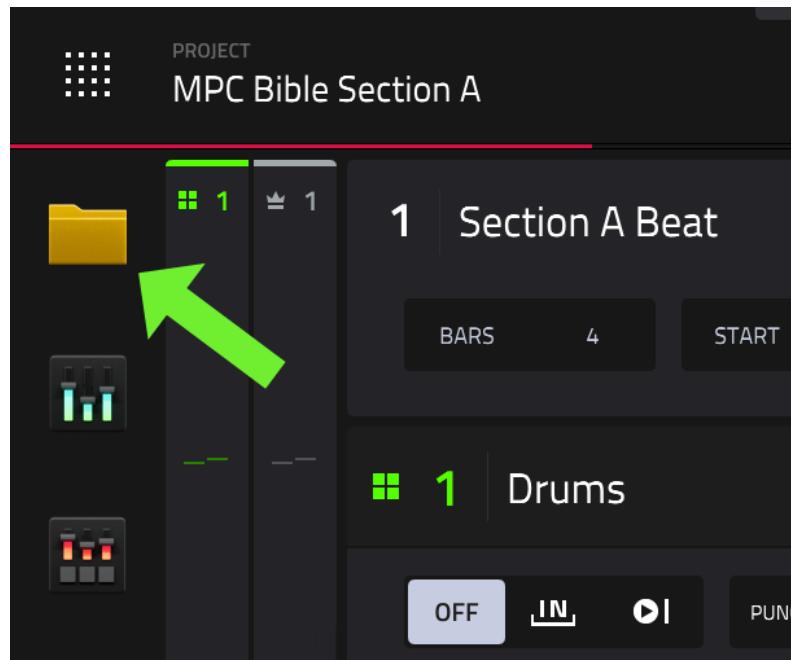
If you didn't initially save the project then remember to save your project inside the '**Projects**' folder on your MPC disk.

LOADING MIDI PATTERNS TO A TRACK

It's also possible to load ready-made MIDI performances directly to a track and I've included an example in the MPC Bible expansion so you can try out the break I personally recorded using the same kit. Remember, if you want to preserve your existing recording, remember to save your project before loading this kit!

We've previously loaded a drum kit from the MPC Bible Expansion using the Sounds Browser, but if you want to load other types of files into your project then you'll need to use the more powerful **File Browser**. This can load 'any' supported file type including samples, kits, instruments, MIDI grooves, plugin presets, and entire projects.

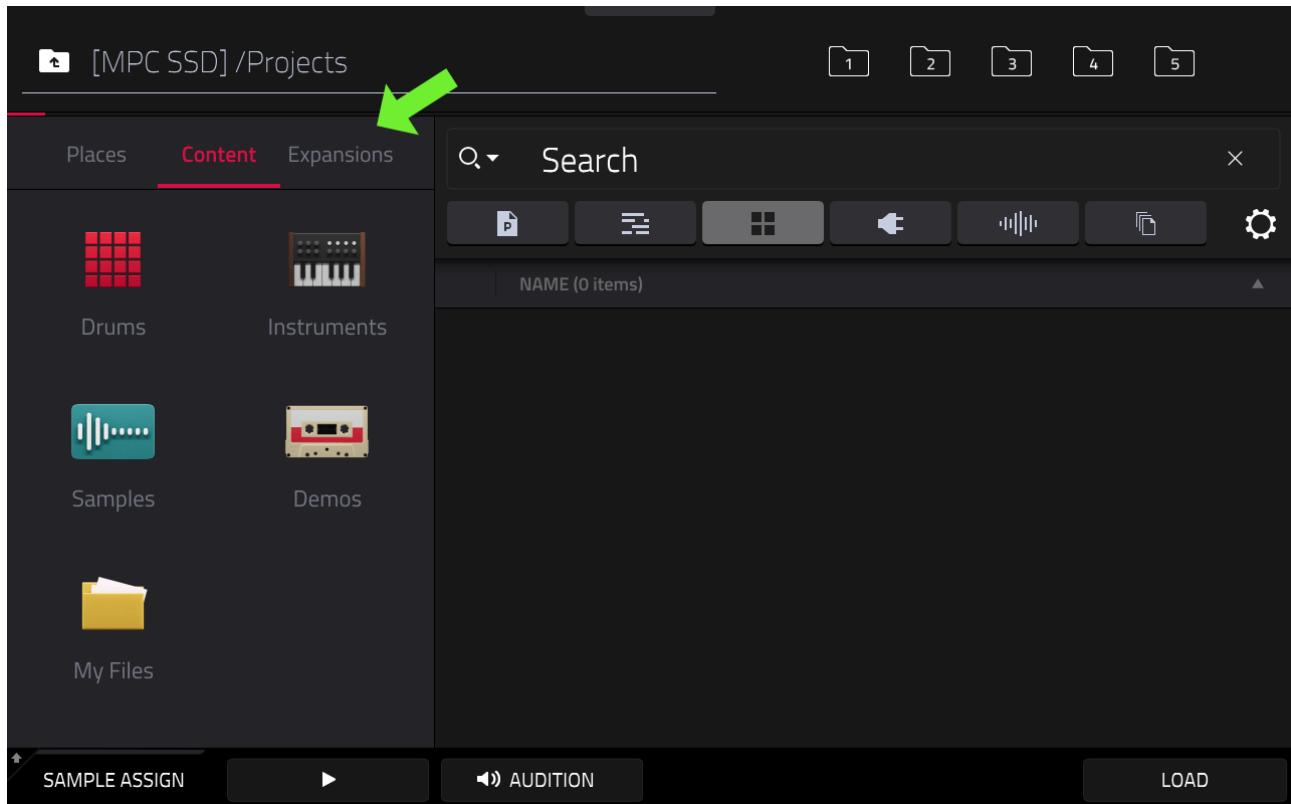
You can access the **BROWSER** directly from MAIN by tapping on the yellow folder icon on the left hand side of the screen:



Alternatively if your MPC model has one, you can use the dedicated **[BROWSE]** hardware button - on some MPCs this is called **[LOAD]**.

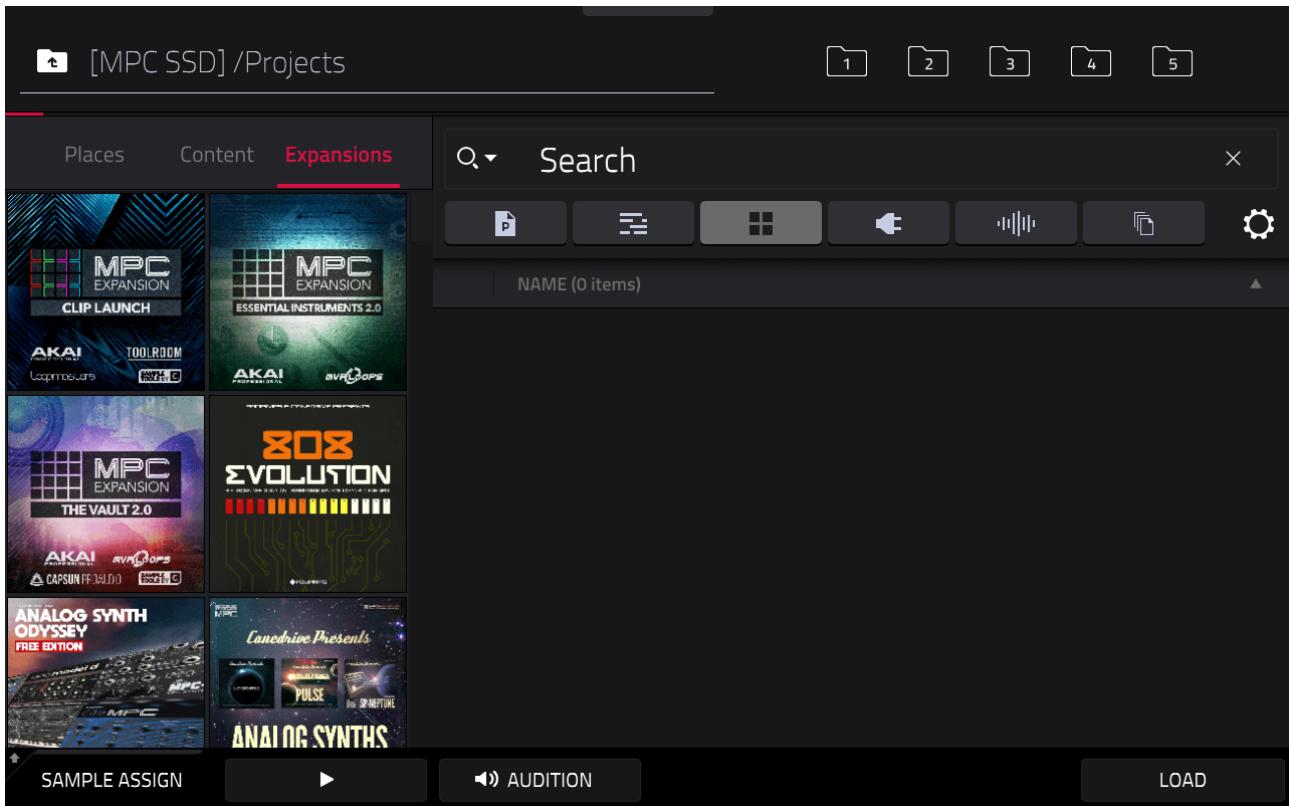


You can also use **[MENU] > BROWSE** (the yellow folder icon).



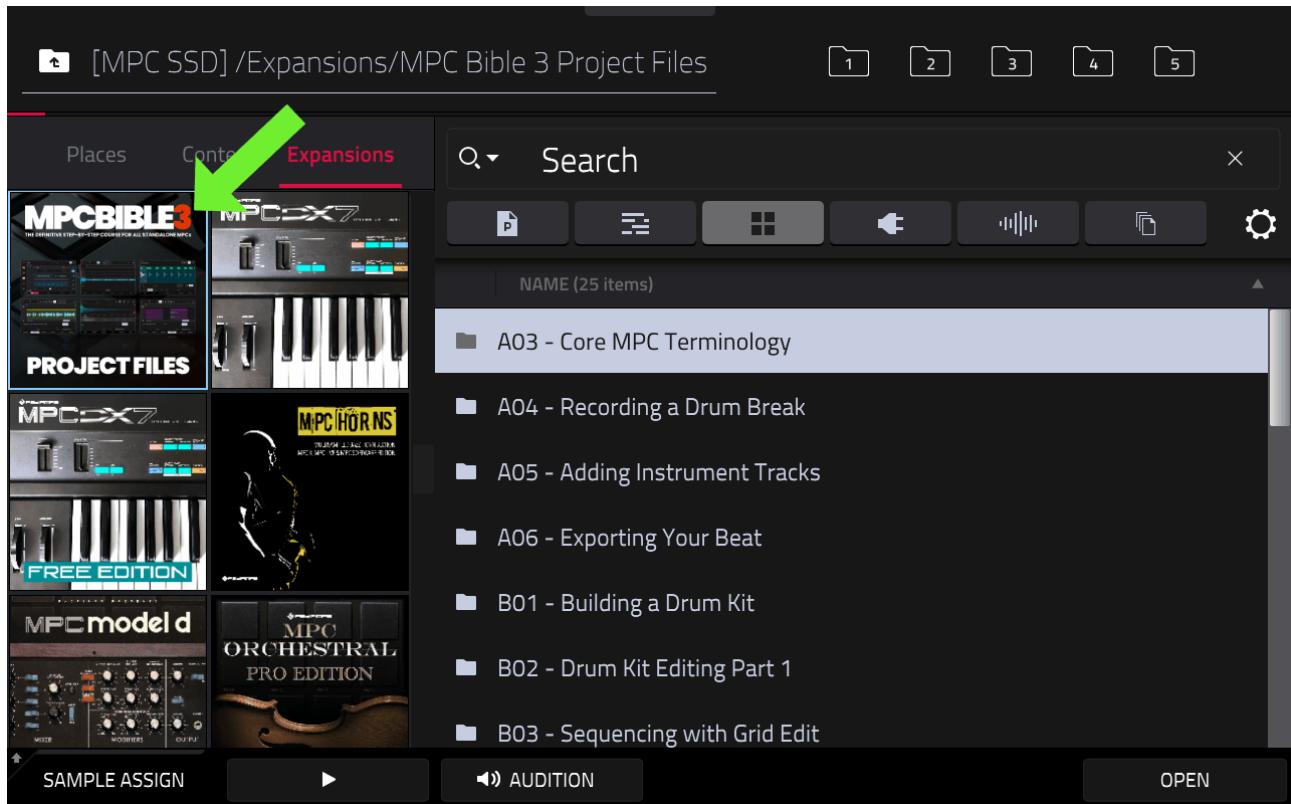
The browser is the MPC's file management 'hub'. We'll use it throughout the course to navigate your MPC disks and load a variety of different file types.

As we want to load a file from the MPC Bible Expansion, click on the '**Expansions**' tab on the left of the screen:



In the Expansions section of the file browser (which many people simply call the '**Expansion Browser**') you'll see all your installed expansions on the left hand side of the screen as image thumbnails – the first expansions will be the 'factory' content for your MPC model, and underneath you'll any third party expansions that you have installed.

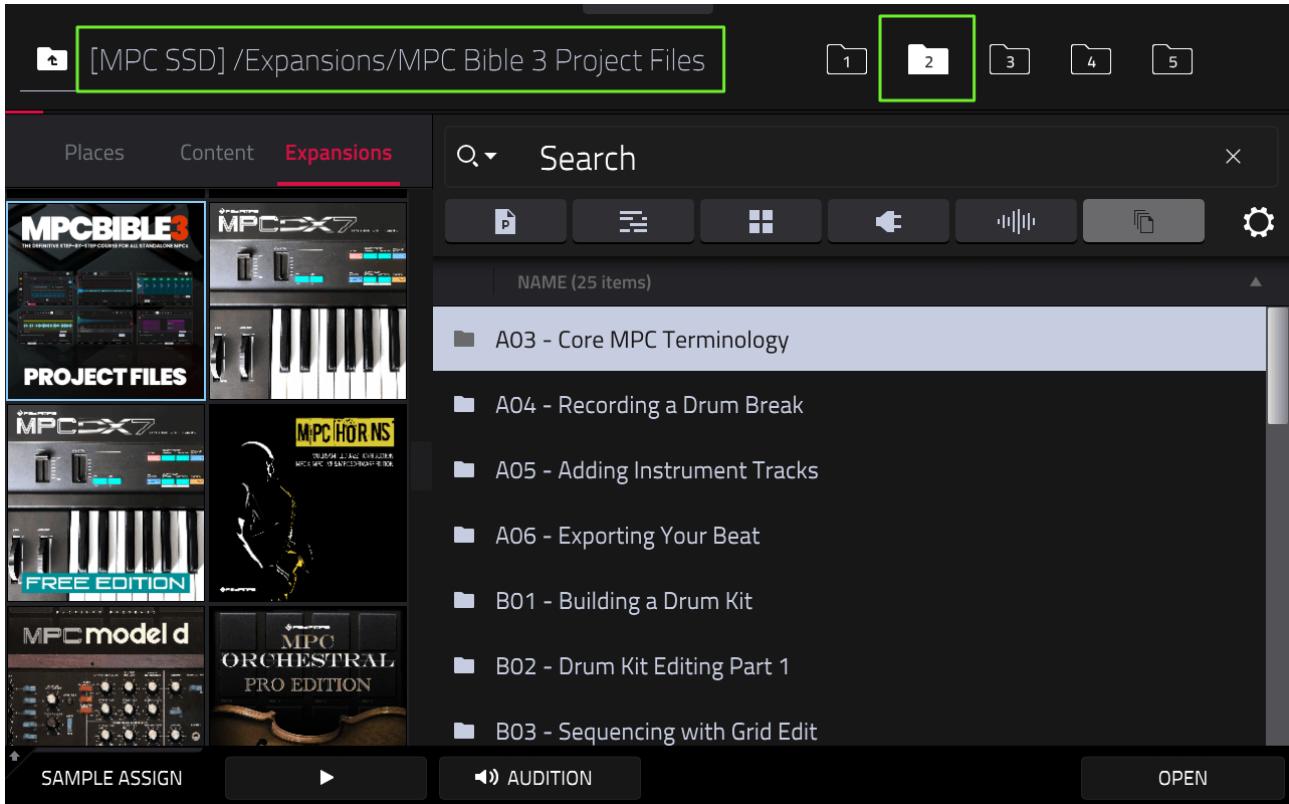
Use your finger to scroll the thumbnails upwards until you see the '**MPC Bible Project Files**' thumbnail and tap on it:



This will take you directly inside the expansion – you can see the full file path at the top of the screen, which on my MPC is '**[MPC SSD]/Expansions/MPC Bible 3 Project Files**'.

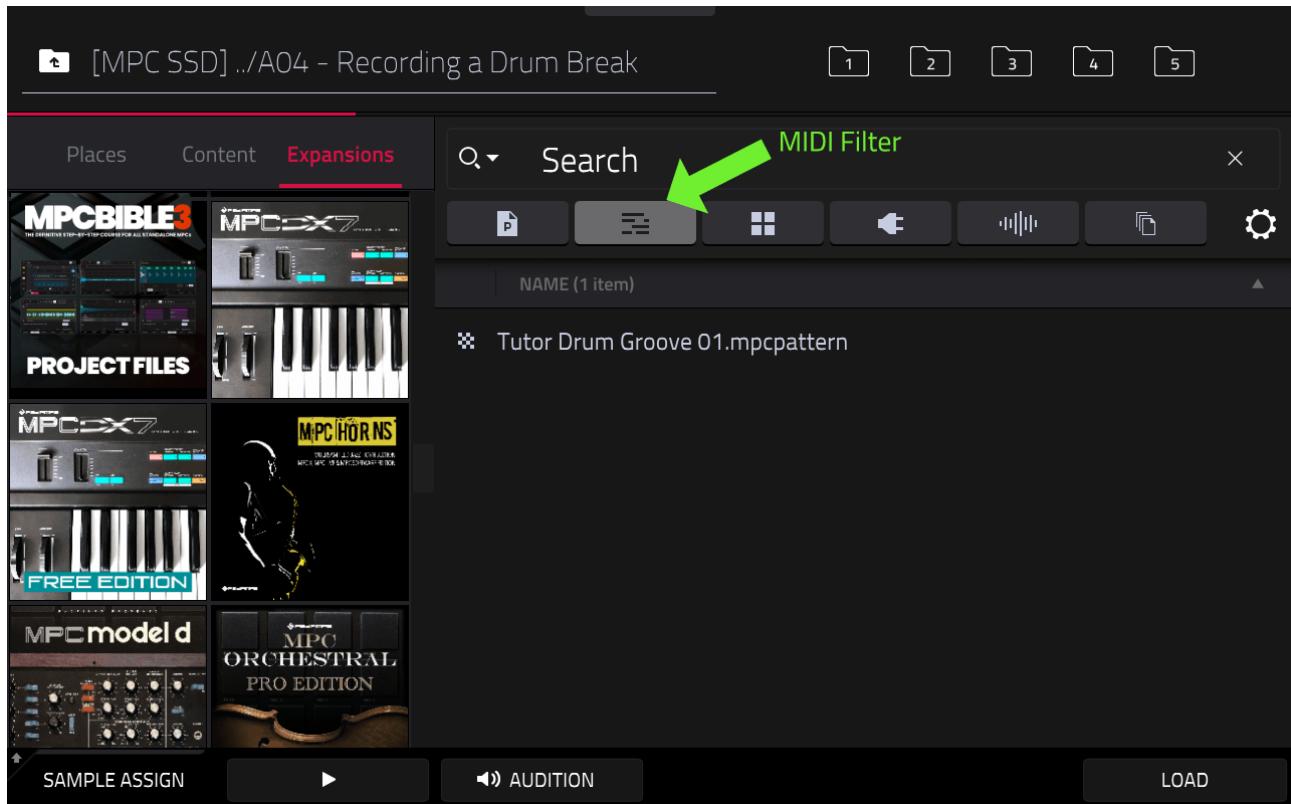
At this point I recommend you set a browser shortcut to the MPC Bible Project expansion; hold down **[SHIFT]** and hit the **'2'** folder in the top toolbar:

A04: RECORDING A DRUM BREAK

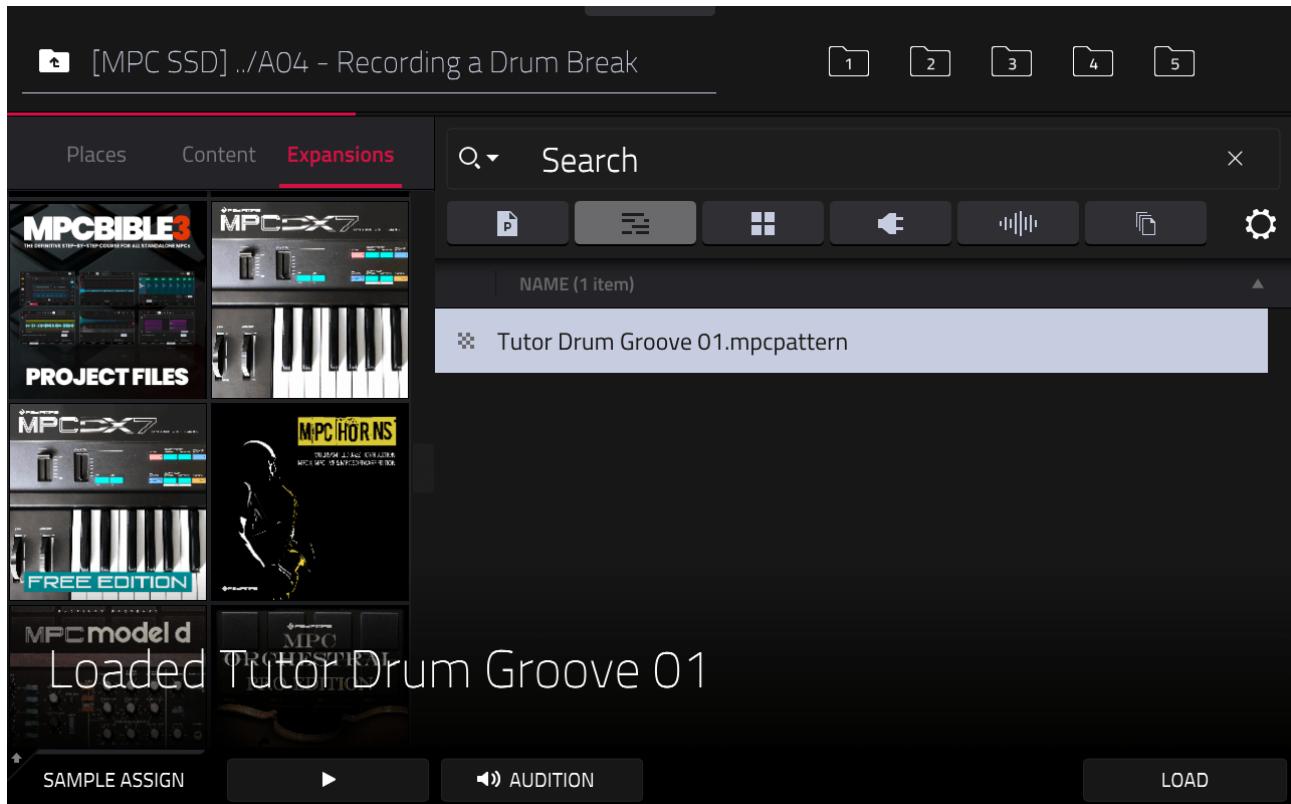


On the right hand side of the screen you can see the full folder structure of this expansion, each folder containing the files used throughout the different chapters in the course.

Double tap the **A04 - Recording a Drum Break** folder to enter it. It might seem empty, but that's because by default the display is 'filtered' to only show kits and instruments. We need select the '**MIDI**' filter to only display the MIDI patterns (or 'MIDI clips') within this folder:



MIDI patterns are ready-made grooves and performances stored as pure MIDI event data which can be loaded directly to a track. Double tap '**Tutor Groove 01.mpcpattern**' to load it to the current track – alternatively you can single tap and hit the **LOAD** button at the bottom of the screen. You'll see a message on screen confirming a successful load:



Hit [**PLAY START**]. As you can hear, the MIDI pattern has now replaced the existing pattern that you have previously recorded. You can easily return to the original performance using [**UNDO**]. And as you saved your project before loading this pattern you can always re-load the entire project to restore it. We'll look at this in the next section.



Loading a MIDI pattern to a track will completely replace all the existing events on that track. It won't change anything else though, so the drum kit and all its settings remains untouched, only the MIDI events are replaced.

A05: ADDING INSTRUMENT TRACKS

So far we've built everything on a single DRUM track, but most MPC sequences contain multiple instruments over multiple tracks, so let's add some instruments to our sequence.

TOPICS COVERED IN THIS CHAPTER

- ✓ Using plugin instruments
- ✓ Recording with Pad Perform
- ✓ Controlling pad velocity
- ✓ Adding keygroup programs
- ✓ File browser vs sounds browser

RETURNING TO A PREVIOUS PROJECT

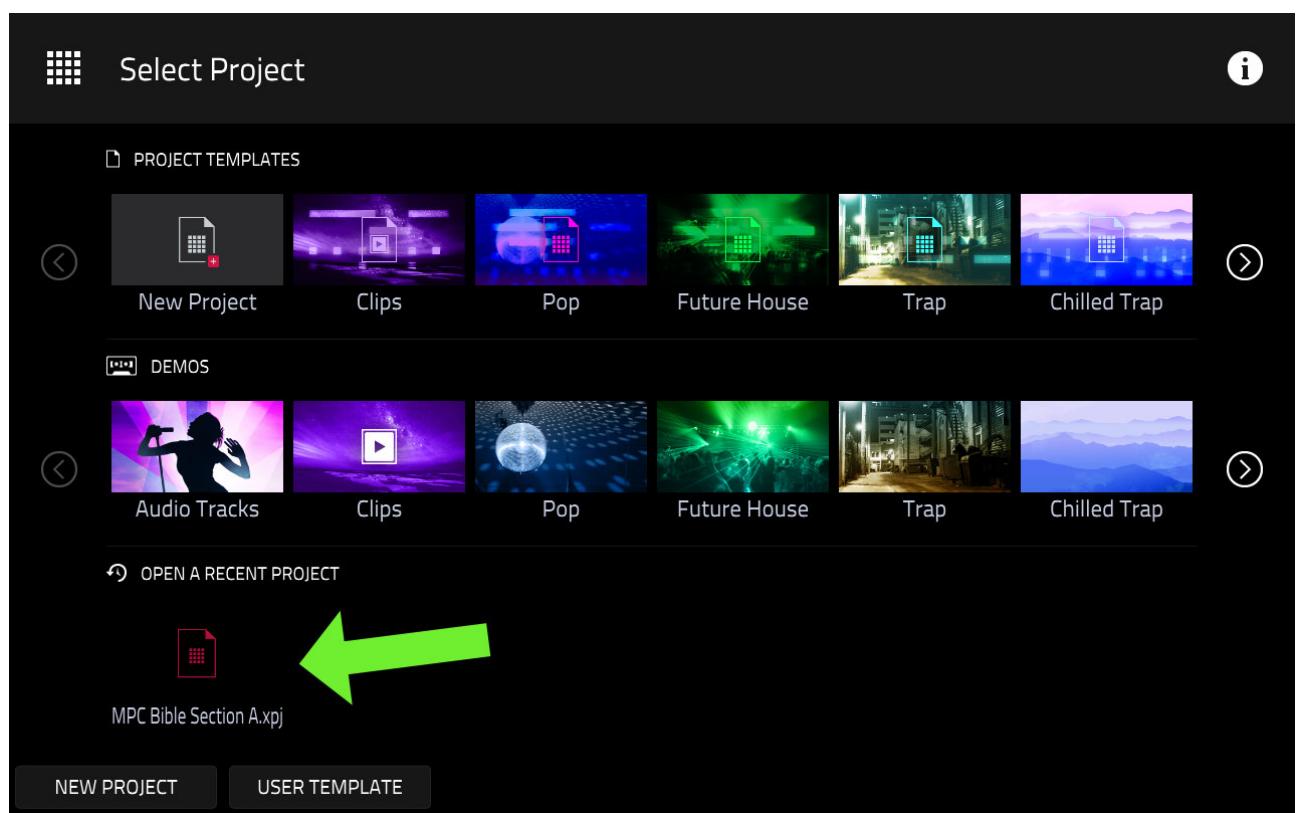
If you've come directly from the previous chapter you are good to just carry on where you were previously – you can either use your originally recorded drum beat or the one you loaded from my MIDI pattern.

However when returning to a project after powering off your MPC, or from working on a different project, then you'll want to re-load that previously saved project back into memory.

Back in chapter **A01**, I recommended you set up your initial project dialog screen in PREFERENCES as follows:

PROJECT LOAD/SAVE > NEW PROJECT DIALOG > Demo/Template/Recent

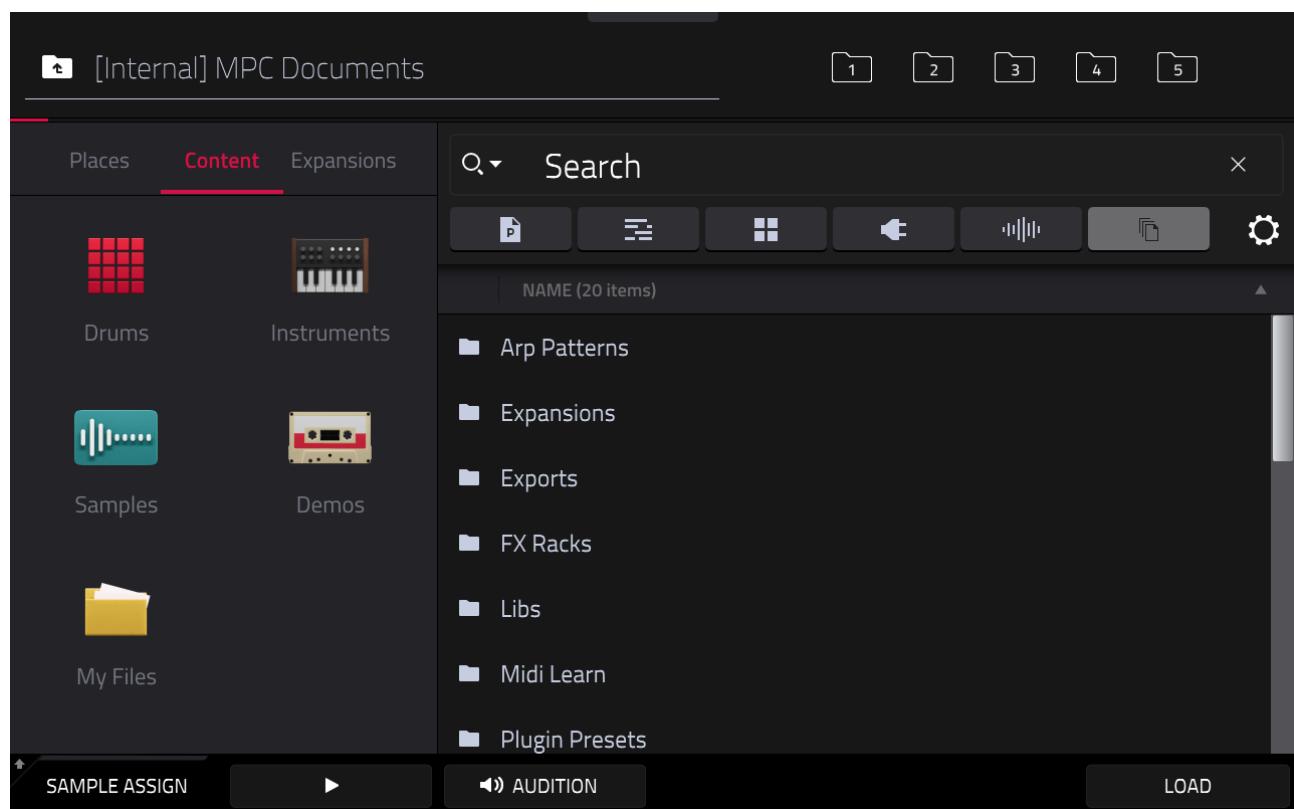
If you did this then you should see your '**MPC Bible Section A**' project listed under '**OPEN A RECENT PROJECT**':



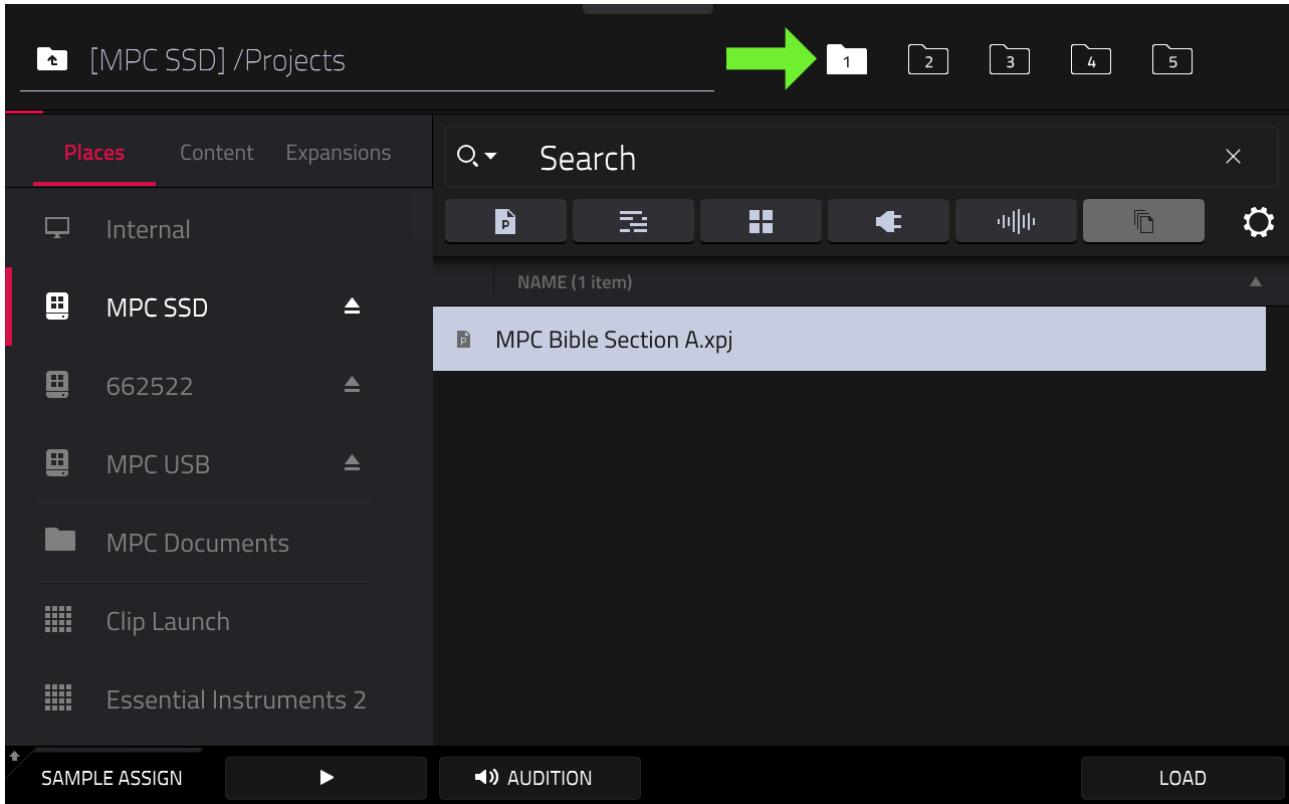
Just tap on '**MPC Bible Section A.xpj**' to load this project into memory.

If you chose not to set up the 'Recent' option in Preferences (or for some reason your recent project is not showing on this page), then you can load the project directly from your MPC disk.

To do this, you need to use the '**BROWSER**' we discovered at the end of the last chapter. First tap on **NEW PROJECT** and then go to the **BROWSER**; remember you can use the yellow folder icon on the left hand side of the screen in [MAIN] (or in [MENU]), or use the dedicated hardware [**BROWSE**] or [**LOAD**] button if you have one.



If you previously set up the browser shortcut to your 'Projects' folder, just hit that **[1]** now:

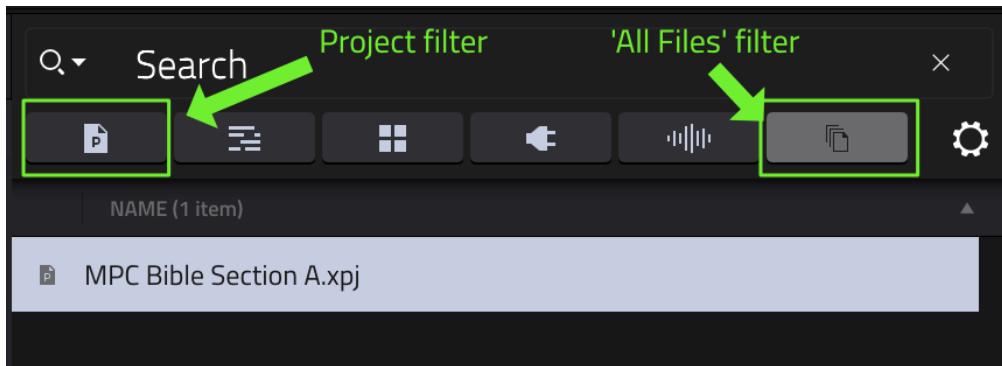


Otherwise, tap on the **Places** tab on the left side of the screen, tap on your MPC disk, and double tap the '**Projects**' folder to enter it.



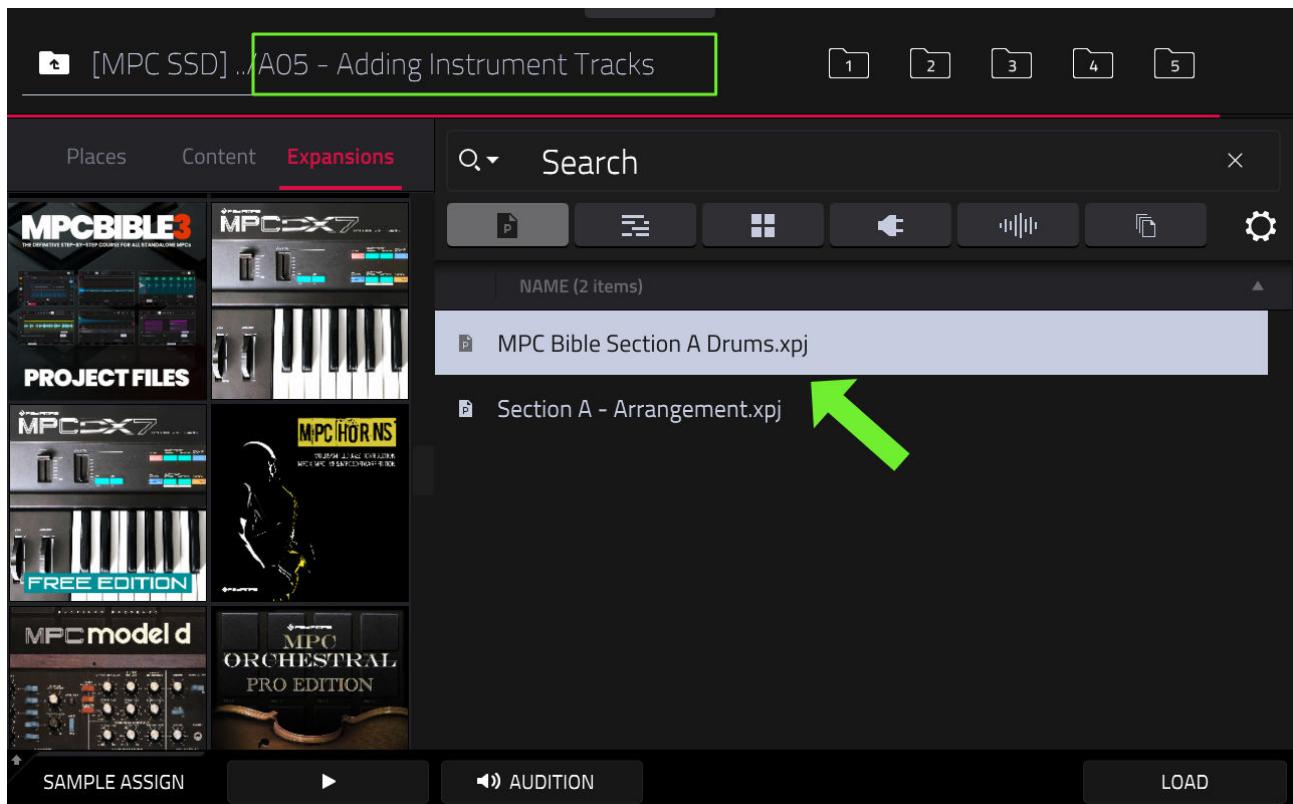
If you didn't set a browser shortcut before, do it now while you are inside your projects folder; hold down [SHIFT] and hit the 'I' folder in the top toolbar.

On the right hand side you should see the **MPC Bible Section A.xpj** project file that you previously saved (**XPJ** is the file extension given to MPC projects files). If you cannot see this project file, make sure you select either the **Projects filter** or the **All Files** filter:



Double tap the project file to load it (or single tap and hit **LOAD**) - you'll now be taken back exactly as the project was when you saved it.

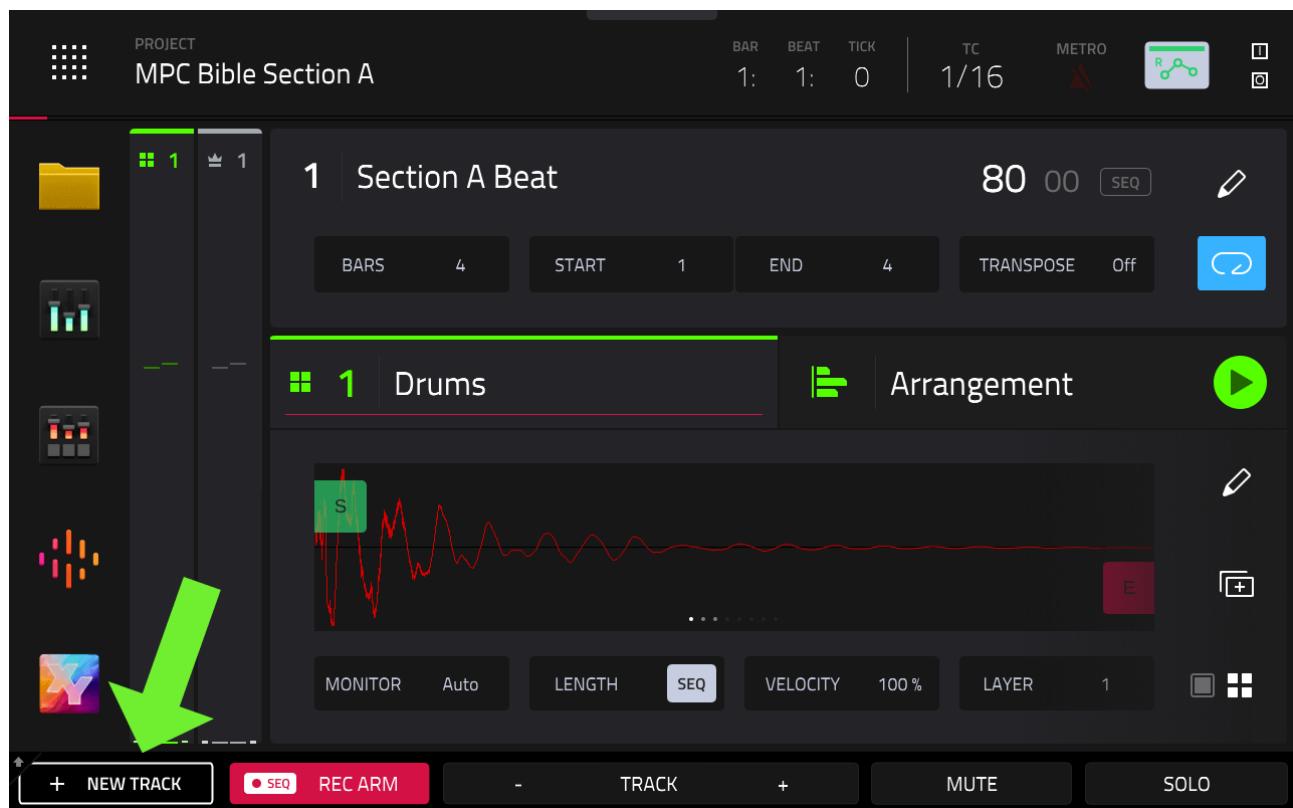
Alternatively, load up my version of the project so far; go to **Expansions** > **MPC Bible 3 Project Files** > **A05** and double tap **MPC Bible Section A Drums.xpj**.



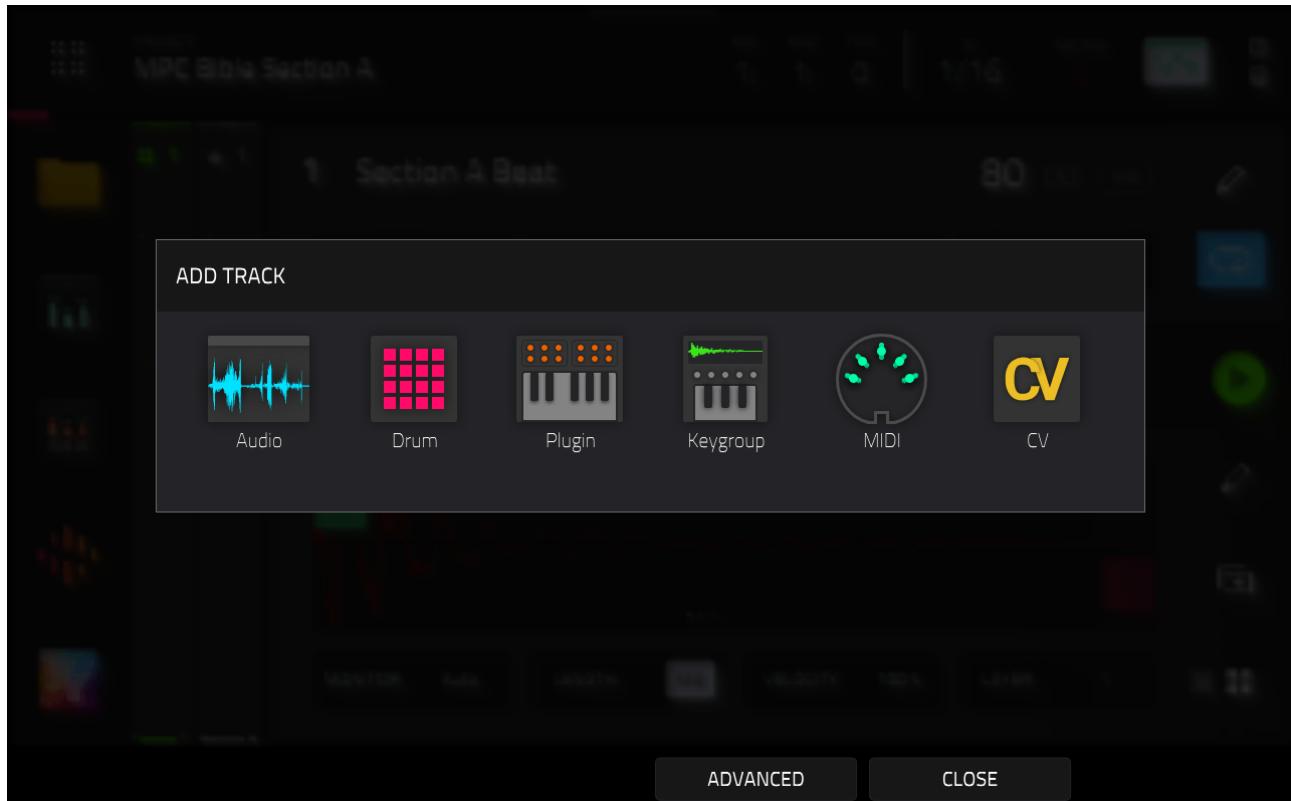
ADDING A NEW TRACK

Head back to [MAIN]. Currently our sequence contains a single DRUM track; we loaded a drum kit to this track recorded a 4 bar drum performance to it using MIDI events to trigger various pads in the kit.

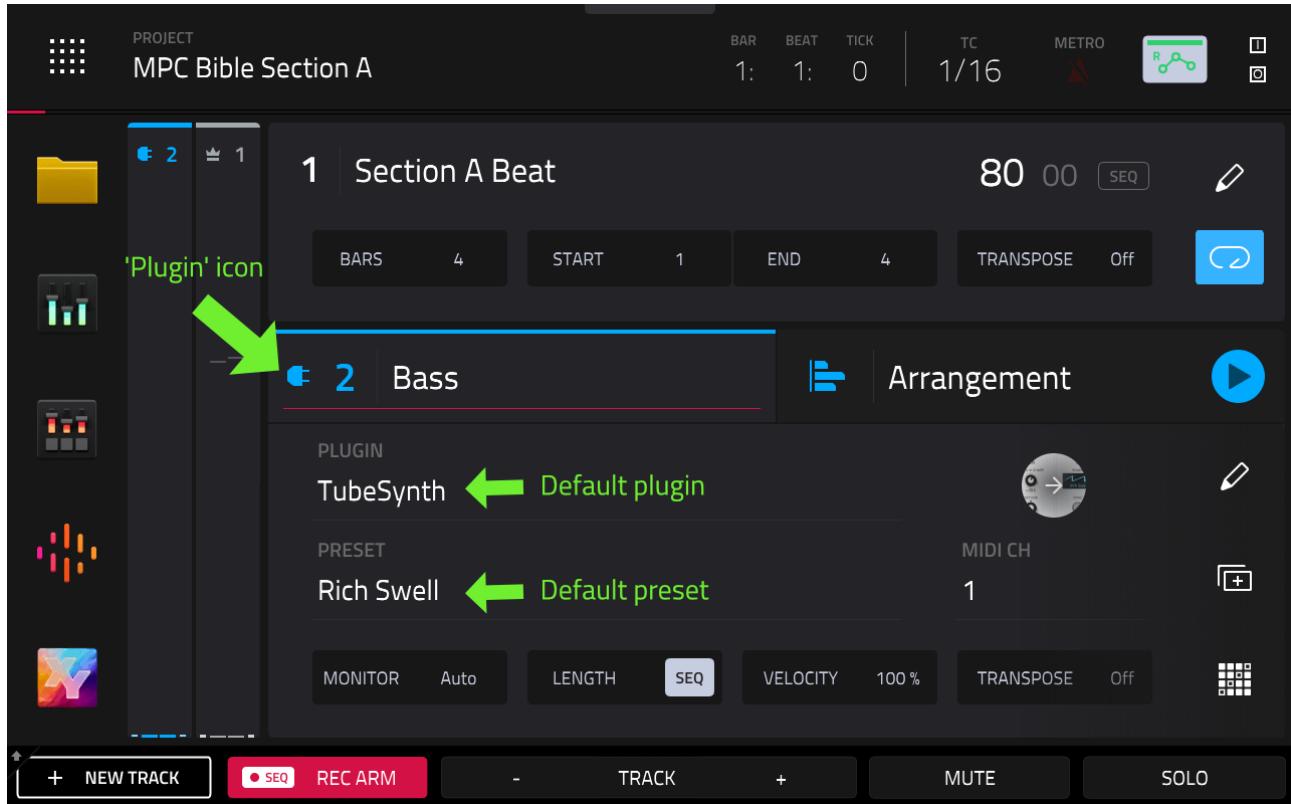
Let's add a bass line to this beat. To add a new instrument to any sequence we normally place it on its own track. To add a new track to your existing sequence, hit the '**+ NEW TRACK**' button at the bottom of the MAIN screen.



We now need to choose a suitable track type:



Tap on **Plugin** and you'll be returned to MAIN. This creates a new **plugin track** which is used to load presets from any of the internal 'synth' plugins. Tap and hold on the existing track name (**Plugin 001**) and rename this track to '**Bass**'.



Notice that the track icon next to the track name has now changed to indicate that this is a 'plugin' track.

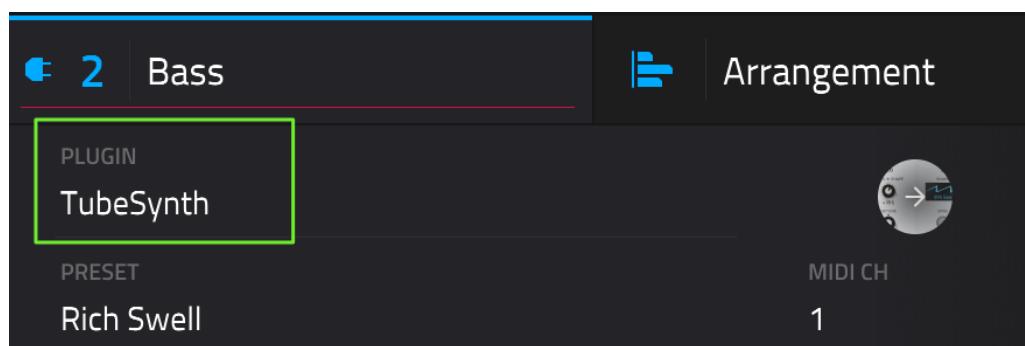
As discussed in chapter **A02**, your MPC comes pre-installed with a minimum of four 'factory' plugins; **TubeSynth**, **Electric**, **Bassline** and **DrumSynth** and one of these will be selected as your default plugin instrument – this is model dependent, typically it's either Tubesynth or Hype.



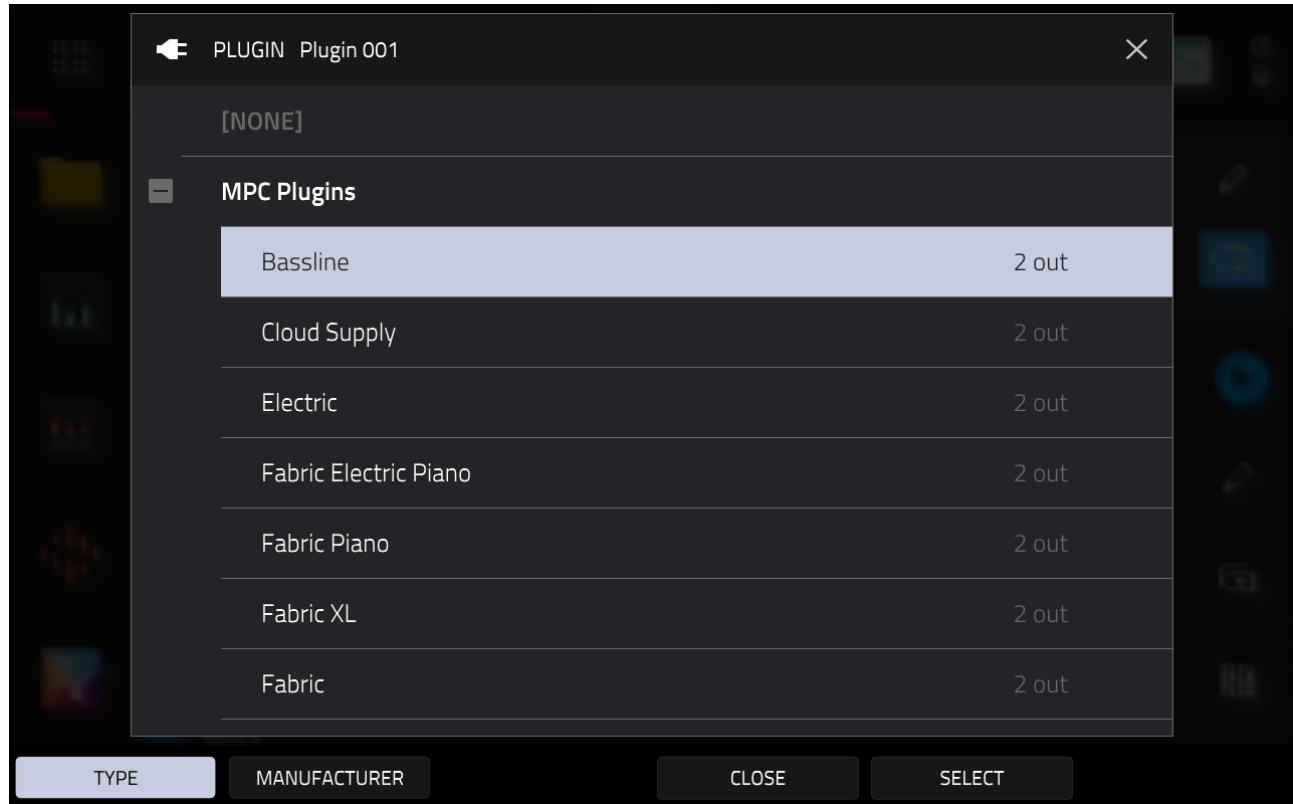
Currently you can have a maximum of 8 plugin tracks in any one project. However in Section C I will show you some ways to 'convert' existing plugin tracks into keygroup instruments or audio tracks which will free up some spare plugin slots.

As you've probably guessed, to create a bass line we're going to use the **Bassline** plugin which entirely dedicated to generating bass sounds – that said, it's worth noting that most of the other free plugins, such as Tubesynth, Hype and Odyssey can be used to make bass sounds as well.

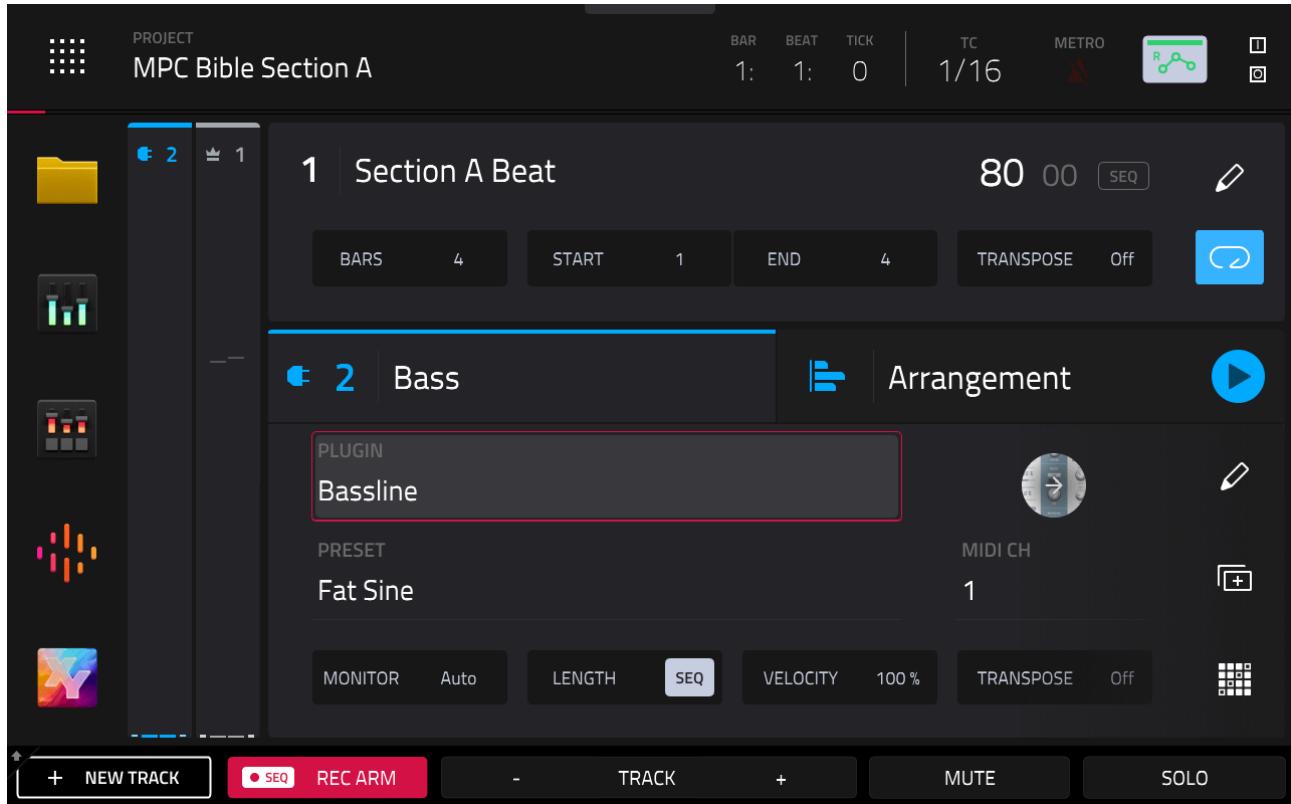
To add a plugin from the **MAIN** screen, double tap the **PLUGIN** parameter:



This will bring up the **PLUGIN** selection dialog. Move to the top of the list (you can use the (DATA WHEEL) or the touchscreen) and locate **Bassline**:



Double tap 'Bassline' or press **SELECT**:

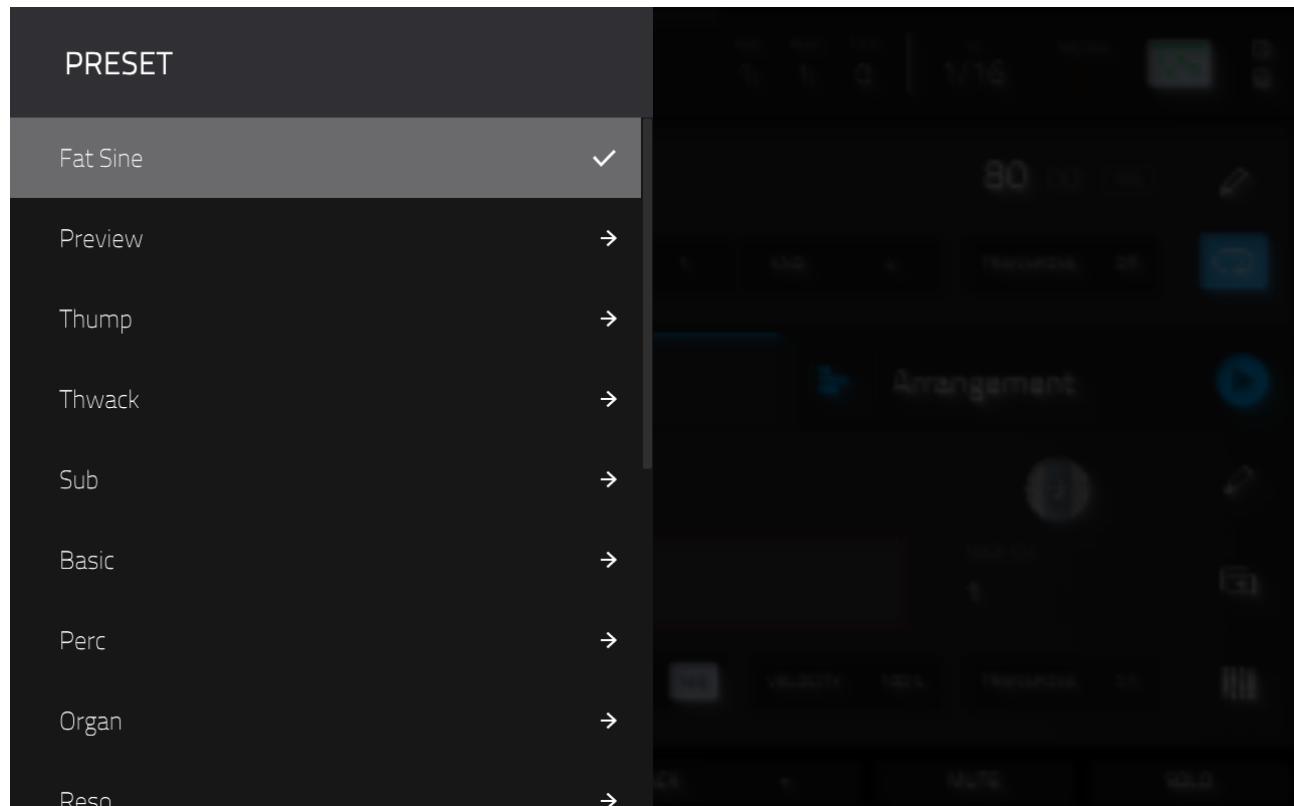


This now assigns the Bassline plugin to this track. Hit some pads (or if you have an MPC Key model you can play the actual keys) – you should hear some bass notes.

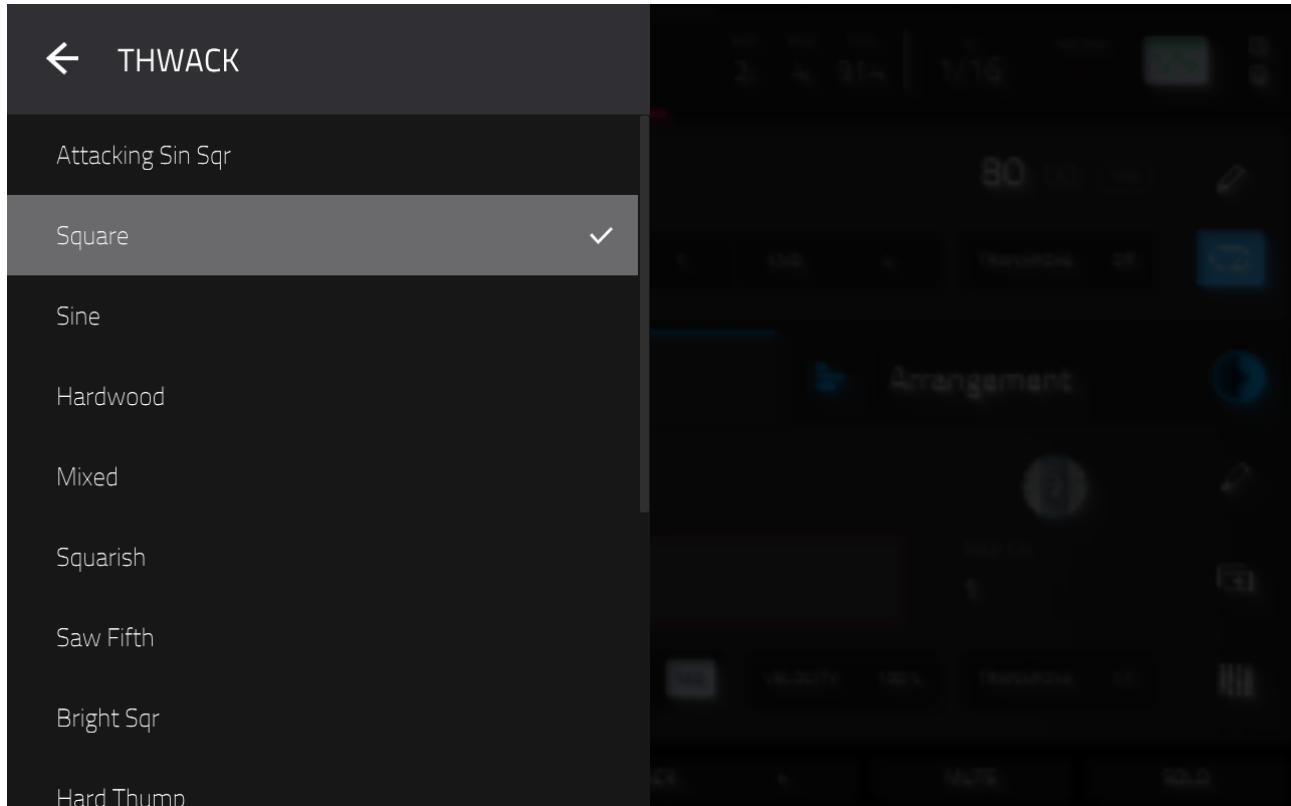
The actual sound you hear is defined by the **PRESET** field in the track panel. When you load a plugin to a track it will assign the 'default' preset, which for Bassline is **Fat Sine**.

To change the selected preset you can single tap the **PRESET** parameter and either turn the (DATA WHEEL) or use the **[+]** button to increment through the list. Each time you select a different preset, you can play some pads to preview the sound of it.

Alternatively, double tap the current PRESET to bring up the **PRESET categories** dialog:



Here you'll see the presets organised by category - select the **THWACK** category and tap on the **Square** preset at the top:



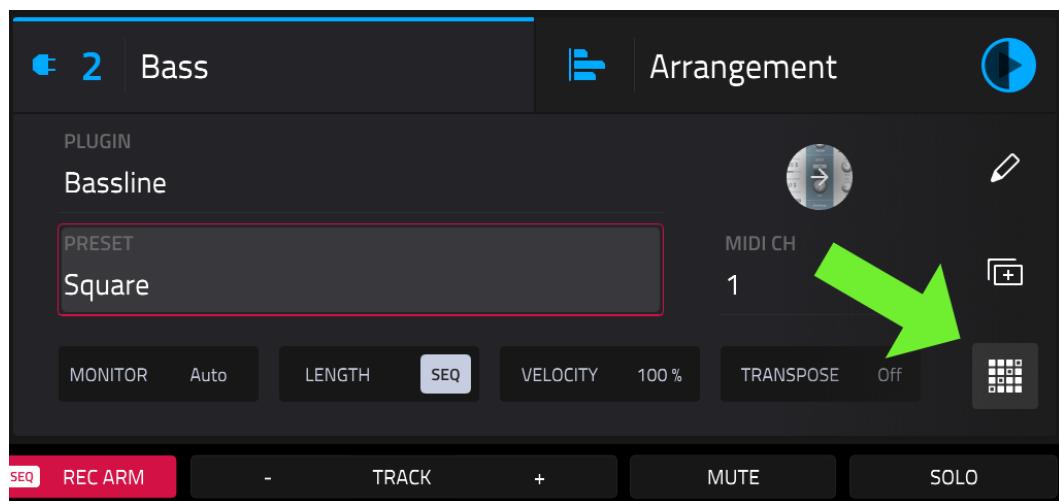
Play some pads or your keys to hear the new preset – If it all sounds too low or too high try selecting a different [**PAD BANK**]. That said, let's take a closer look at how we can configure our pads for performing melodic instruments.

USING PAD PERFORM

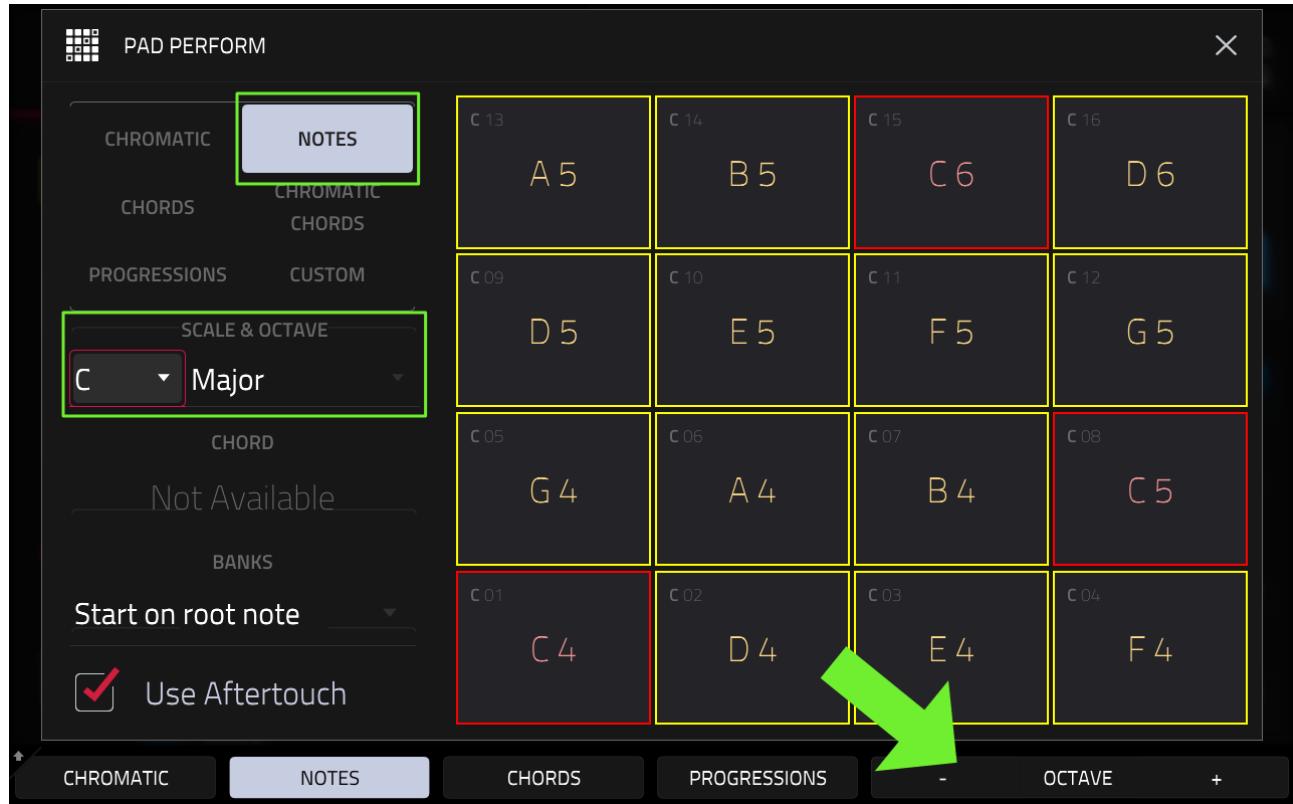
If you have an MPC Key model you can play your bass line using the built in keys, but at this stage in the course we'll use the pads as these are available on all MPC models.

When you are on a plugin track, the pads automatically enter '**Pad Perform**' mode (sometimes referred to as 'Notes' mode). In this mode the pads will only be able to play notes within the specified scale and key.

To configure pad perform you can hit the **PAD PERFORM icon** in MAIN:



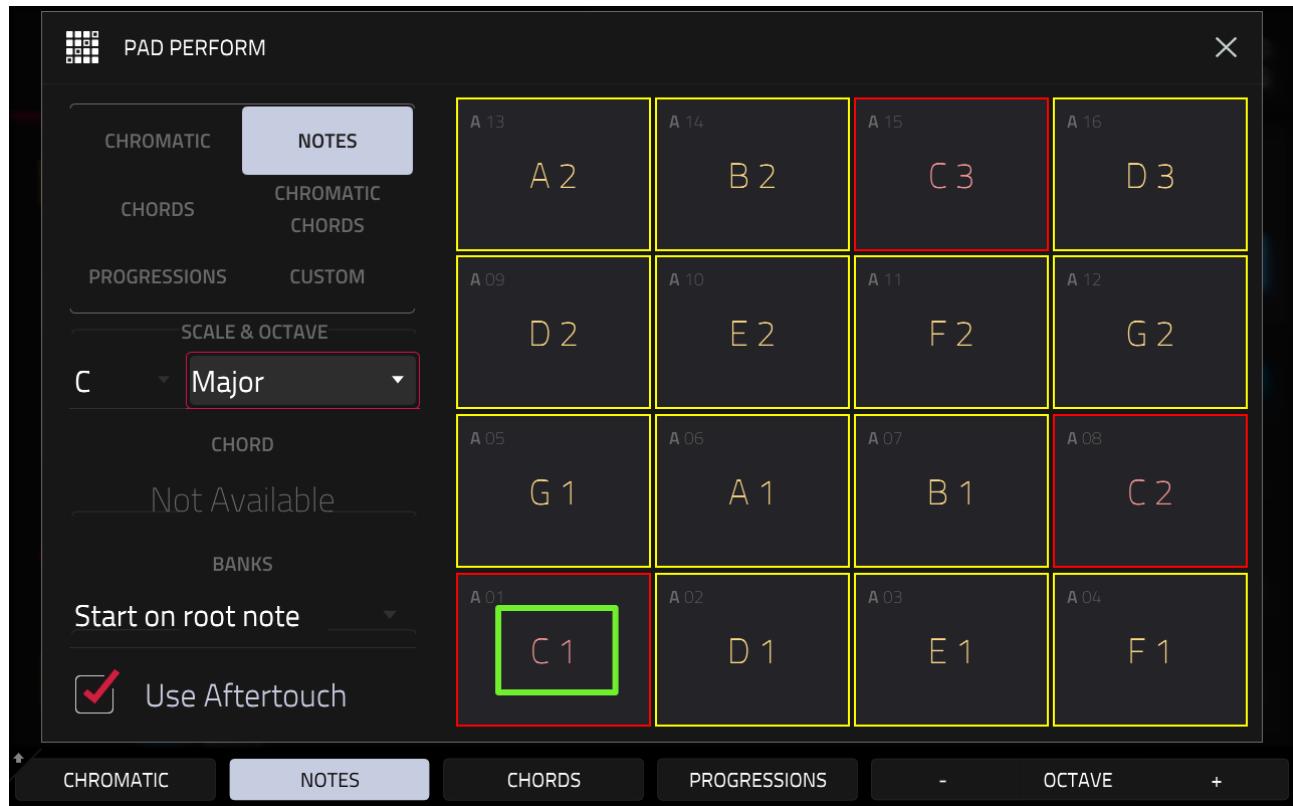
Alternatively you can use [**SHIFT**] + [**16 LEVEL**] hardware buttons.



In the default **NOTES** mode, the pads are configured to only play individual notes within a specific key and scale. You can set the key and scale under **SCALE & OCTAVE**.

Set to this **C Major**. This means that each pad will be assigned a specific note in the 'C major scale'. If you are not familiar with the C major scale, it's all the 'white' keys on a piano (C, D, E, F, G, A, B).

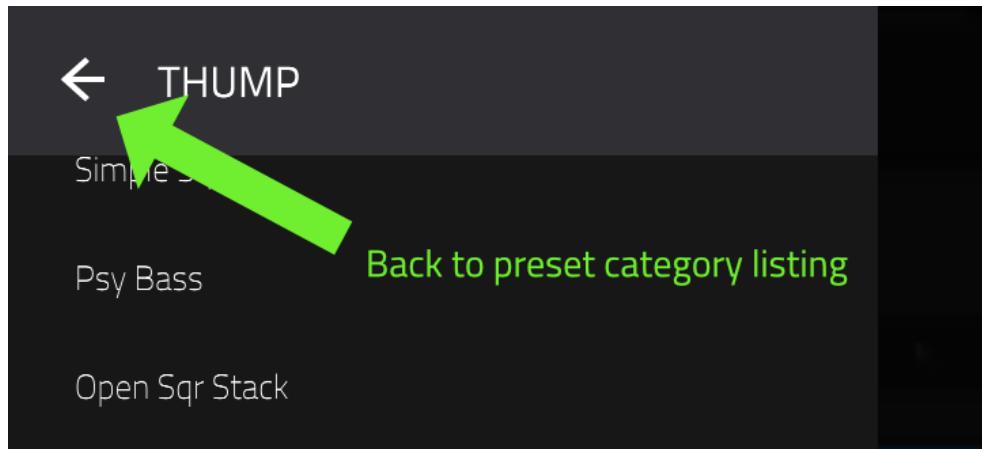
You can use the physical [**PAD BANK**] buttons in combination with the software **+/- OCTAVE** buttons to set the octave range covered by the pads. The octave is indicated by the number on the pad; select [**PAD BANK A**] and use the **OCTAVE** buttons to set pad **[A01]** as **C1** (note 'C', octave 1):



Press and hold pad [A01] to hear what the C1 bass note sounds like.

Now press [**MAIN**], hit [**PLAY START**] and you'll hear the drum break on track 1 begin to play. You can now start playing around with your bass instrument in track 2 while the drums play, with pad perform ensuring all your pad hits are within the defined C major scale.

In addition to scrolling through presets, remember you can double tap the **PRESET** field at any point to bring up the preset select dialogue; if you are inside a specific category, just tap on the left arrow at the top of the screen to take you back to the main category list:



For the moment, just pick any preset you like and we'll quickly lay down a bass line with it.

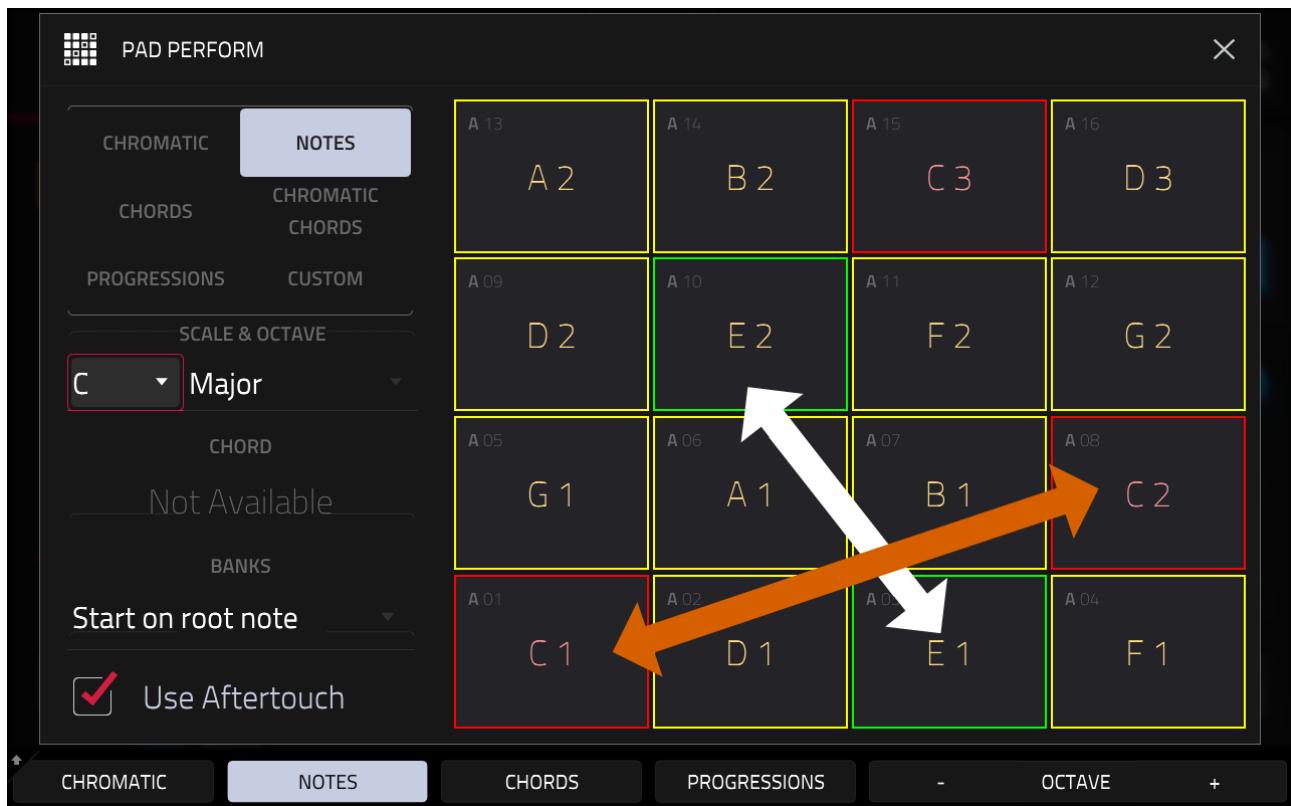
RECORDING THE BASS LINE

A great thing about using plugins is that it's easy to change the preset at any time, even after recording. So let's record a quick bassline and then experiment further with the preset with this recorded bass pattern.

First thing to notice is that your pads are lit in yellow except for three red pads. These red pads represent the 'root' note of the selected scale, which in C Major is a 'C', so this acts as a nice visual aid to always find your way back 'home' for the current scale.

A simple technique for creating bass lines is to use 'octaves'. An octave is simply the same note twelve 'semitones' higher (or lower), so going from C1 to C2 is going 'up one octave'. To perform C1 and C2 octaves with our current pad perform settings, just hit pad **[A01]** followed by the next red pad **[A08]**.

And rather than just playing C notes, also try 'E' octaves on pads [A03] and [A10]. Notice that when you hit pad [A03] it turns green and simultaneously lights up pad [A10] as well?



The MPC does this for all notes, always letting you know where its particular 'octave' notes are located.

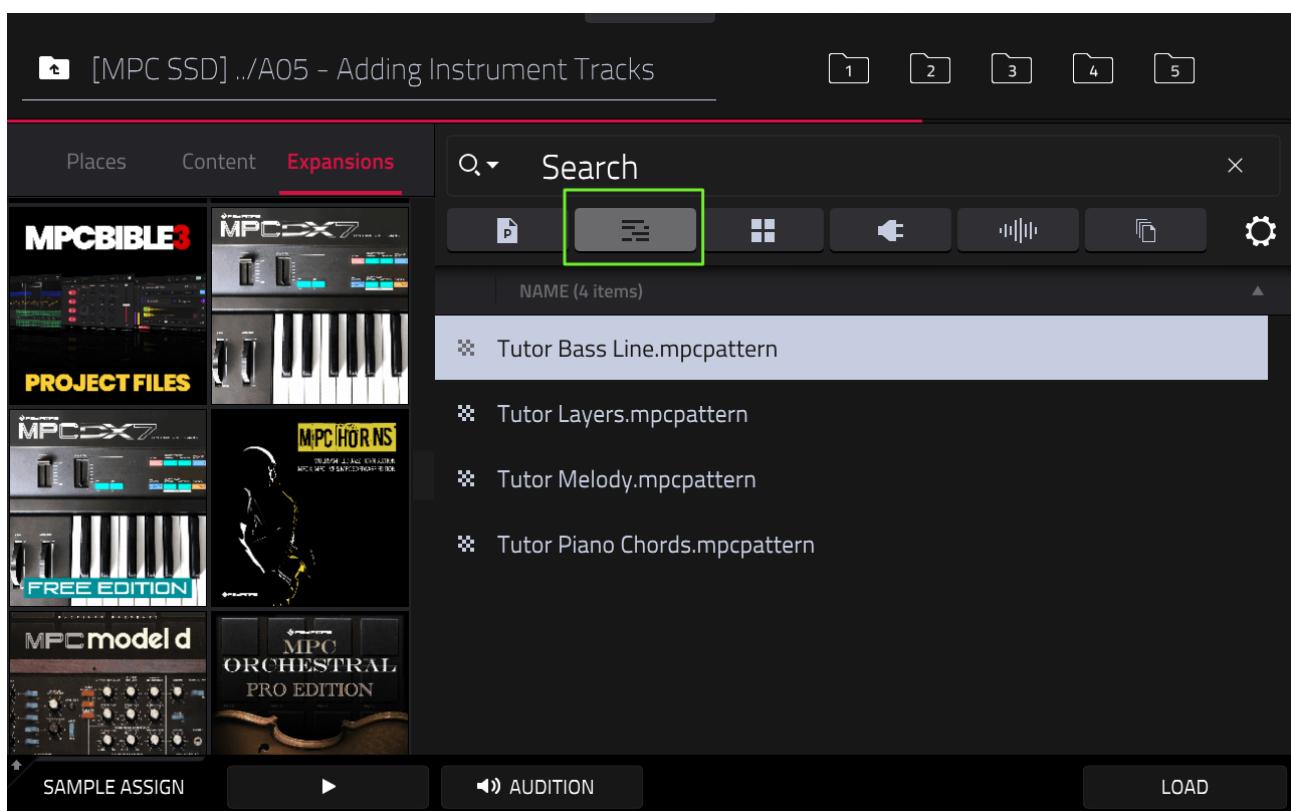
When you are ready to record, follow the recording steps we used previously:

- Ensure **REC ARM** is enabled
- Set a **TC** – for a simple performance like this, a 1/16th timing division (hold down **[NOTE REPEAT]** > **1/16**)

- Choose a **FULL LEVEL** setting – for a synth bass line I suggest using FULL LEVEL 'ON' (a velocity of 127 for every note you play).

Hit **[REC]** + **[PLAY START]** and record your bassline. As before, you can use **[UNDO]**, or just use **[REC]** again to record over your previous performance. Use **[OVERDUB]** mode to add extra notes if required.

You can alternatively load a ready-made MIDI pattern to this track containing my own bass line – it's in the **A05** folder; '**Tutor Bass Line.mpcpattern**'. Remember to use the MIDI filter if you cannot see the MIDI pattern.



Hit [**PLAY START**] to hear my bass line. Here I've used the C1 and C2 notes on pads [**A01**] and [**A08**] for bars 1 and 2, then moved up to notes E1 and E2 on pads [**A03**] and [**A10**] for bars 3 and 4.

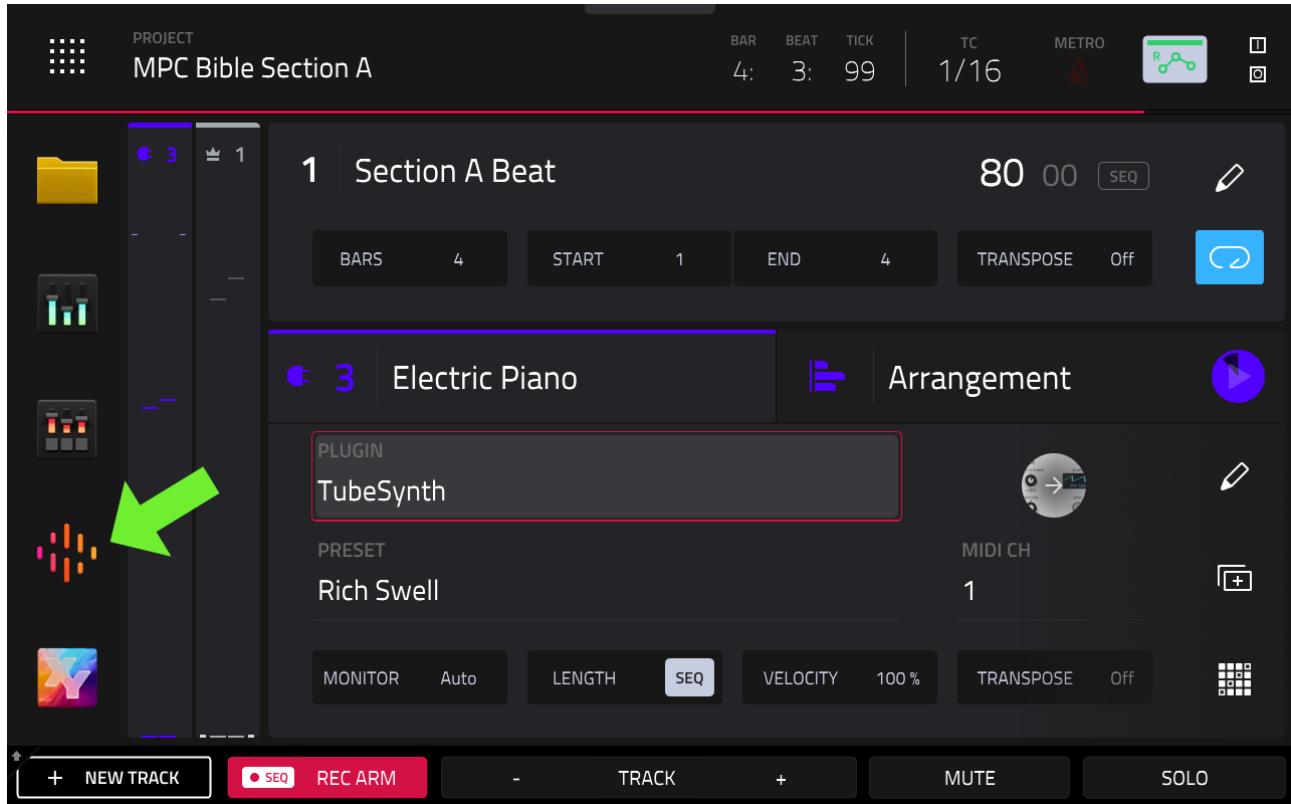
If you prefer your bass line, just hit [**UNDO**] to revert back to your pattern. While the sequence is playing, carry on scrolling through the different bass presets until you hear one you really like.



Later in the course we'll learn how to edit presets to shape them to the exact sound we need.

ADDING A PIANO TRACK

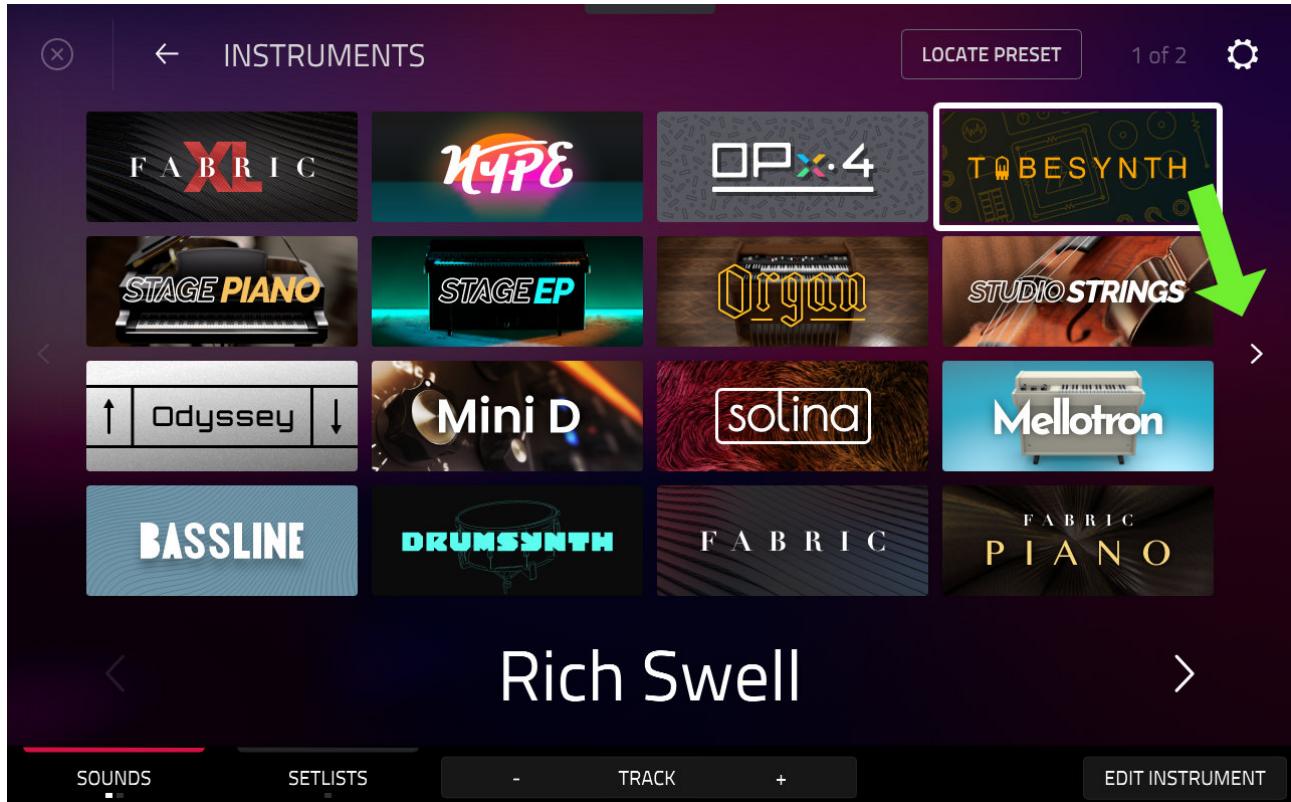
Let's add some chords using a different plugin. From [**MAIN**] hit the **+ NEW TRACK** button and select **Plugin**. As you can see, we'll initially get an instance of the 'default' plugin assigned (Tubesynth in my case). Tap and hold the track name to bring up the track settings dialog. Rename the track to **Electric Piano**.



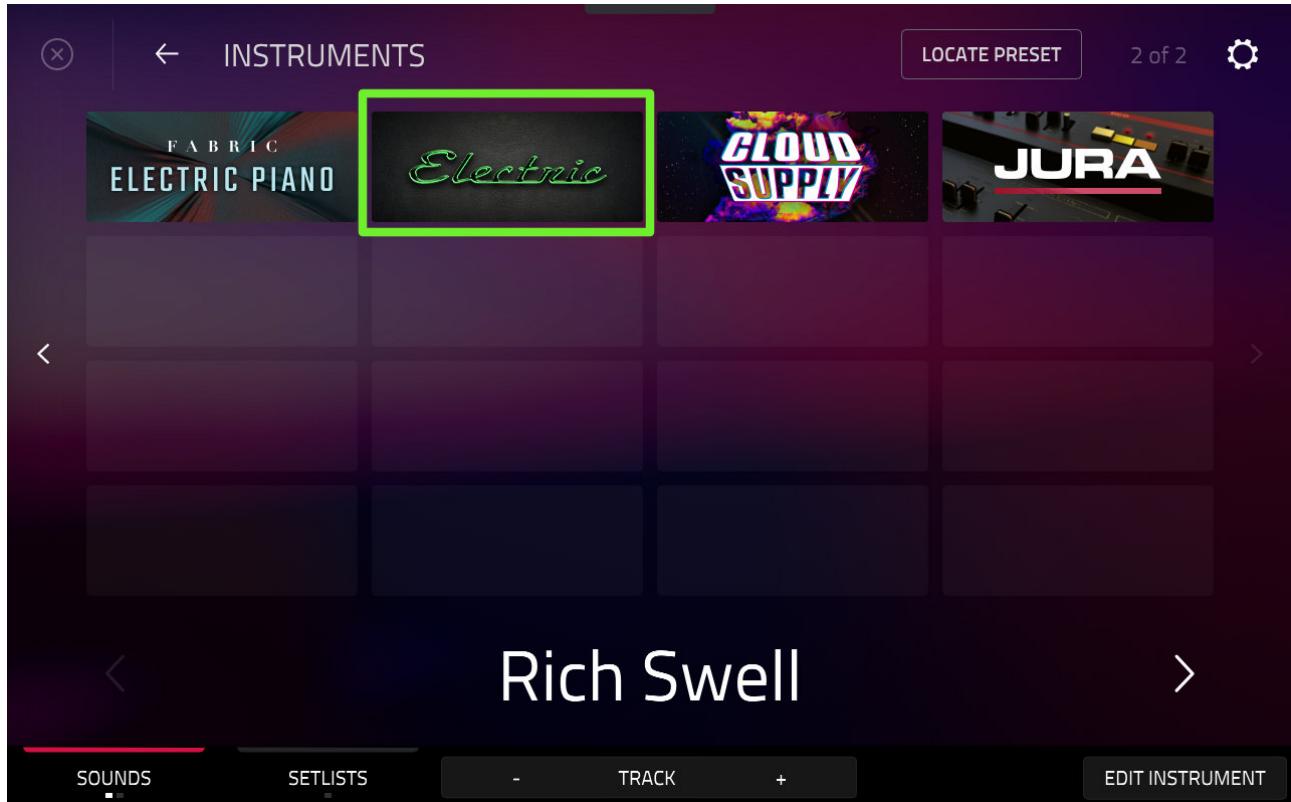
This time we'll use the Electric synth plugin. **Electric** uses physical modelling to create a variety of different electric piano sounds; it's a very efficient plugin using very little memory or CPU.

We could double tap the '**PLUGIN**' field and select the **Electric** plugin from the dialog, but this time let's use the **Sound Browser** - you can use the **SOUNDS icon** on the left side of the screen, or if you have one on your MPC, the [**SOUNDS**] hardware button.

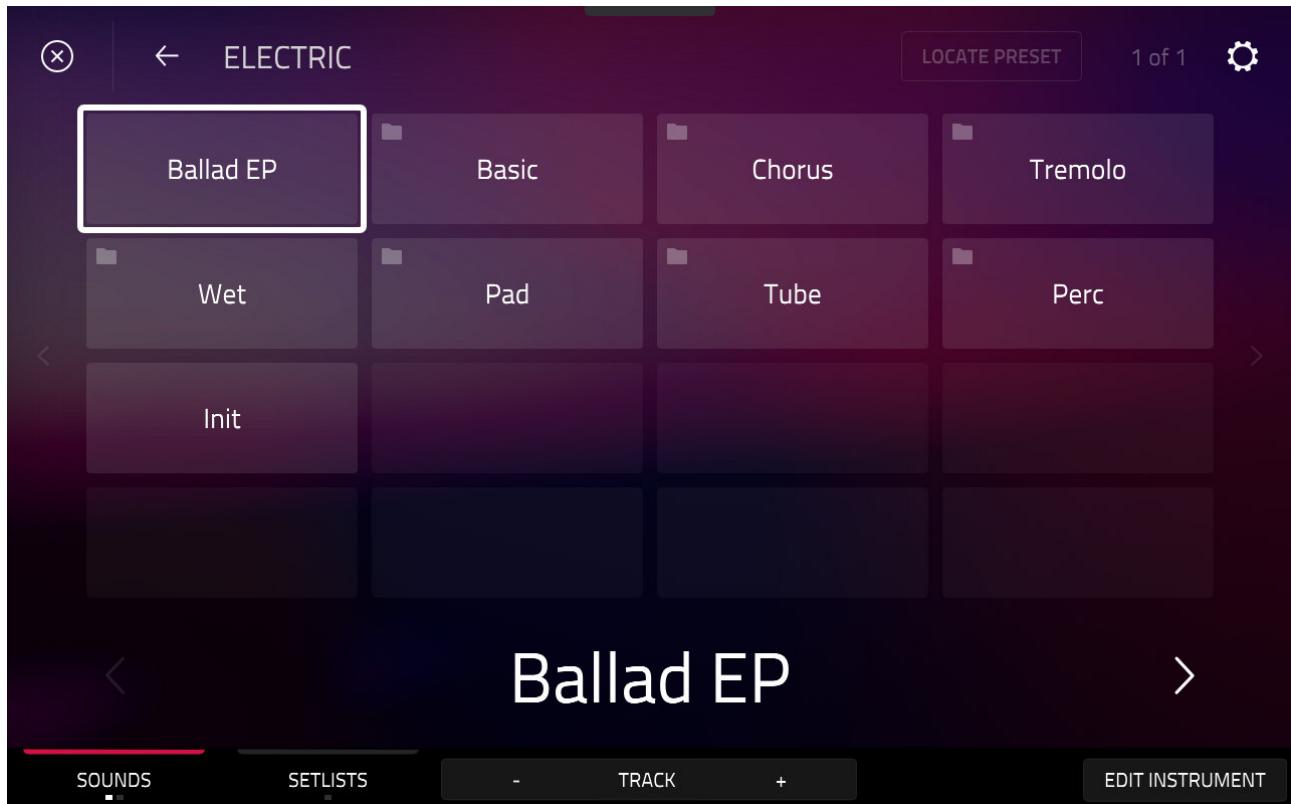
When you enter SOUNDS while on a 'PLUGIN' track, you'll see up to sixteen of your installed plugins:



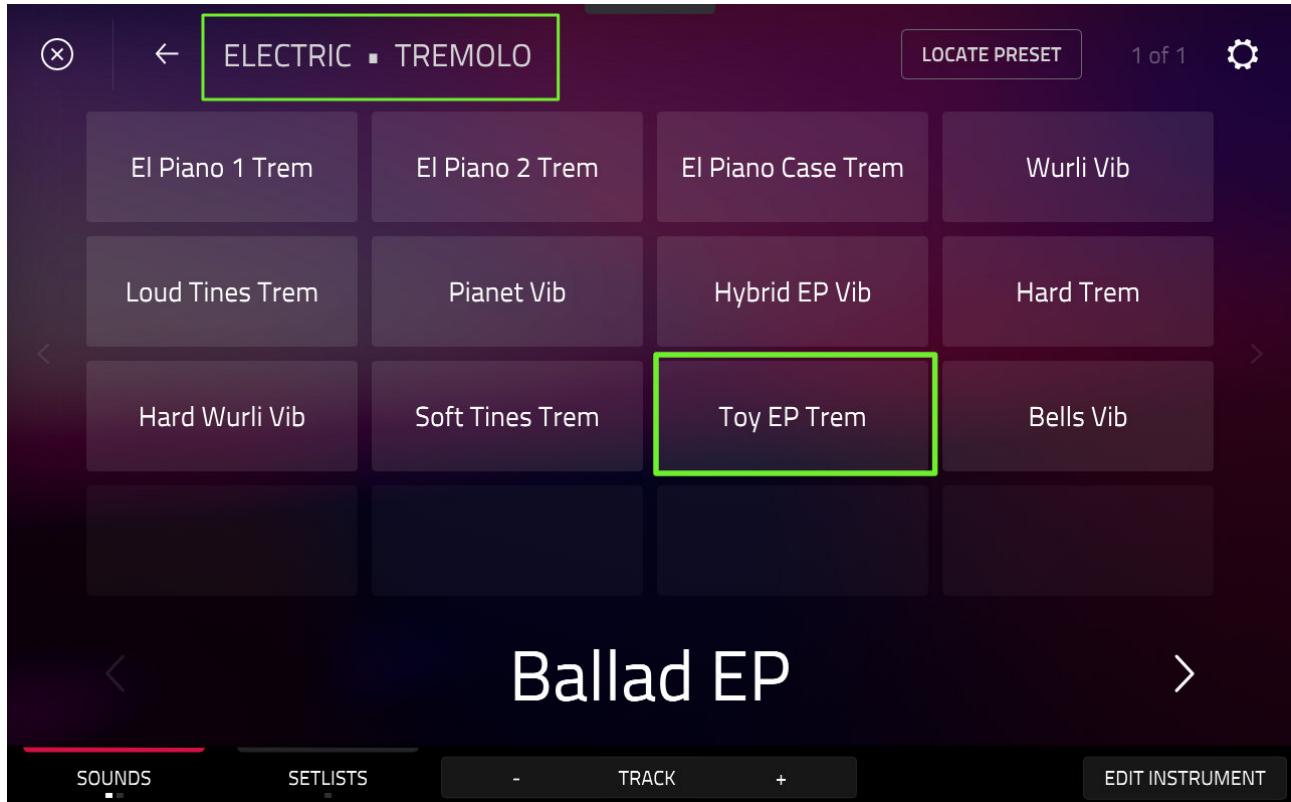
If 'Electric' is not on this screen (as is the case on my system), tap on the little arrow on the right hand side of the screen to reveal the next page of plugins:



Tap on the **Electric icon** – this will assign the Electric plugin to the current track and take you to the available preset categories for this plugin:



Choose the **Tremolo** category:

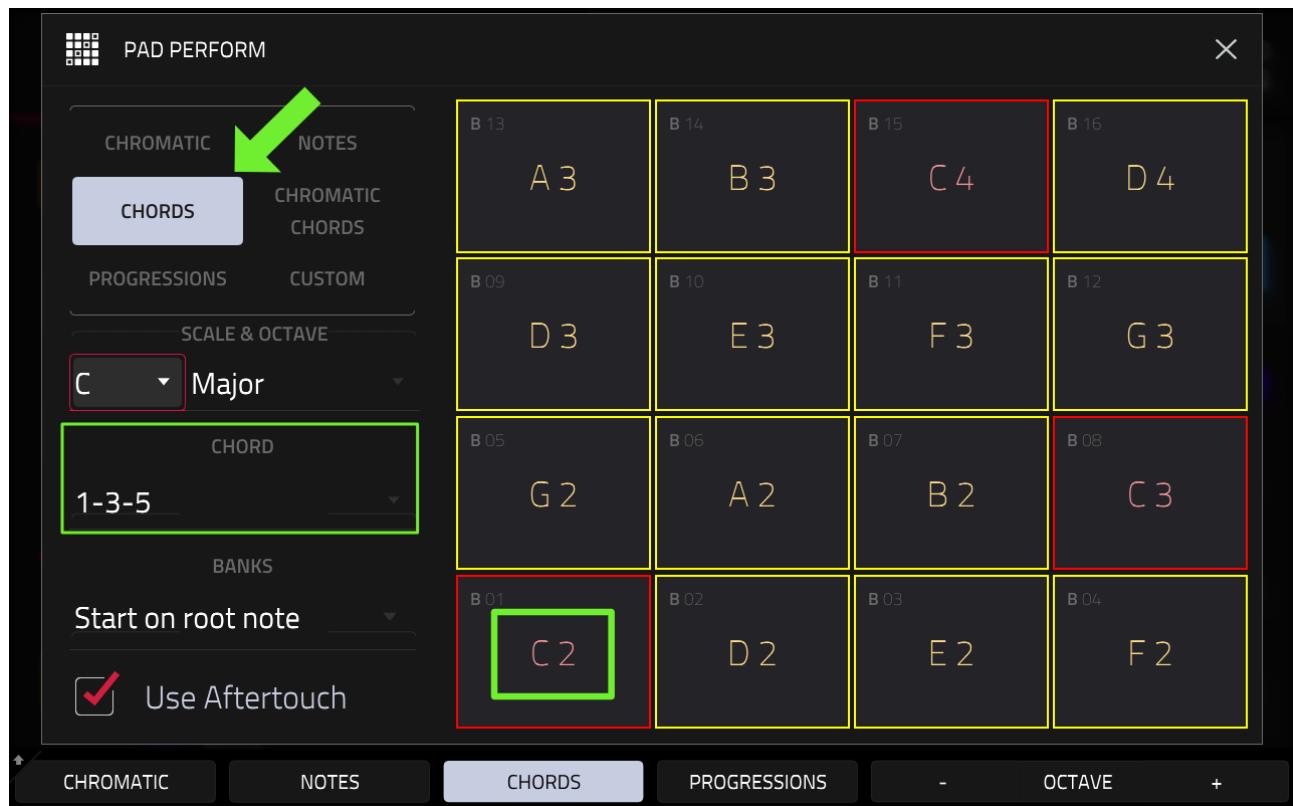


From this screen you can tap on any preset and it will be instantly loaded to your track. You can preview the preset simply by hitting some pads (or use the keys on MPC Key models).

Tap on '**Toy EP Trem**' to load this preset to your track and play a few pads to preview the preset. Sounds good, so let's lay something down with this preset.

Go to [**MAIN**]. Now currently your pads will be set to the configuration you used to record the bass on track 2 (the 'notes' of C major scale). Keeping the same scale is definitely the way to go, and we can play chords using 'notes' mode (i.e. by hitting multiple pads together), but an even easier option is to use CHORDS mode.

Press the **PAD PERFORM** icon or **[SHIFT] + [16 LEVELS]** to open the pad perform configuration. This time select **CHORDS** mode and use the **OCTAVE** buttons to set pad **[A01]** to **C2**:



Now press and hold pad **[A01]**. This time instead of each pad playing a single note it plays a complete chord. A 'chord' is usually made from multiple notes found within a particular scale; if you look at the **CHORD** settings, it states **1-3-5**, which means the root chord is built using the 1st, 3rd and 5th notes from the C major scale (in this case: C, E, G, which is a C major chord).

Now change **CHORD** to **1-4-5** and preview with pad **[A01]**. This sounds very different to the 1-3-5 version. Now try 1-2-5 and 1-3-5-7. Each one gives a very different feel and vibe.

Remember, all these chords are made from the same C major scale, we're just building each chord from different notes within that scale. Let's leave it on the jazzy sounding **1-3-5-7**.

The rest of the pads now take that 1-3-5-7 chord shape and literally transpose it in steps across the scale to produce a whole bunch of chords that just 'work' nicely with our root chord.

RECORDING PIANO CHORDS

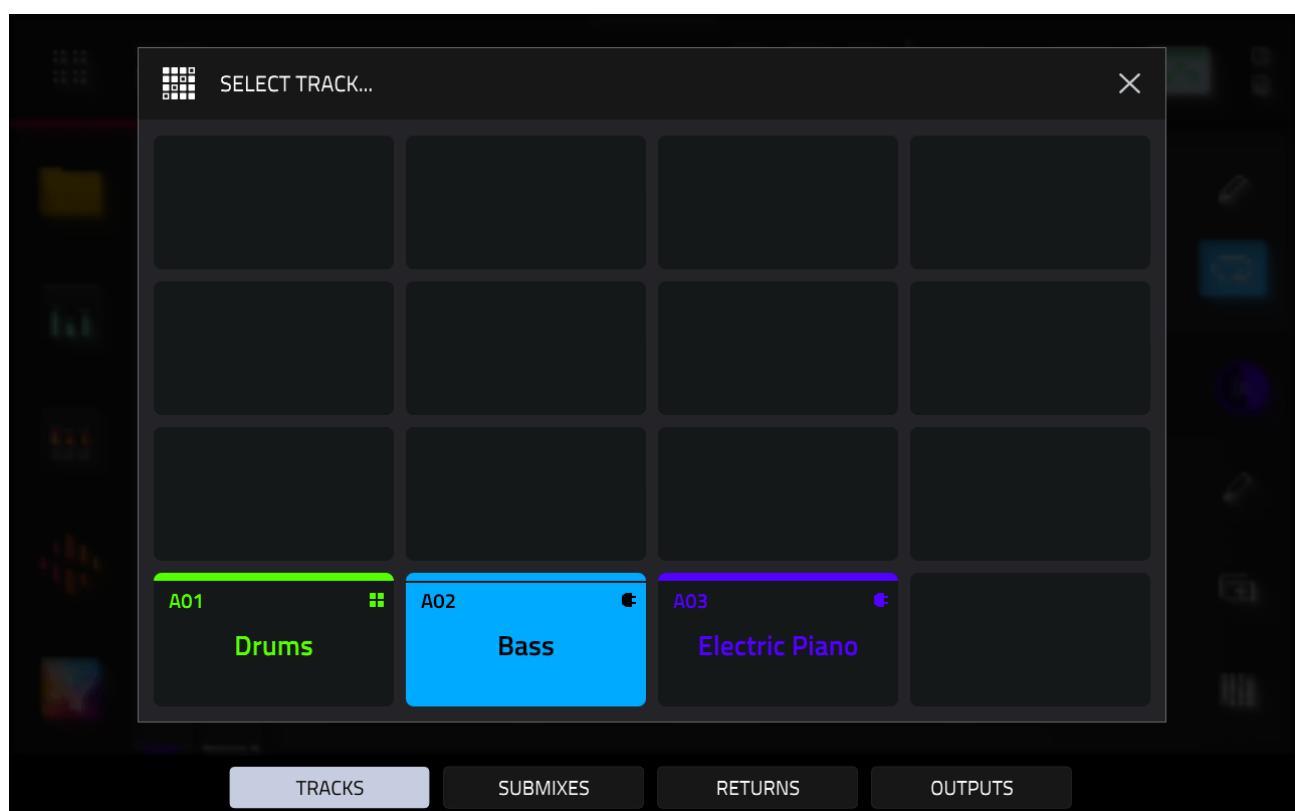
Lay down some chords to match the bass line we recorded earlier; our bass line featured C notes on bars 1 and 2, then E notes on bars 3 and 4, so we can mimic this with our chords by playing pads [**A01**], a C major 7 chord, and then pad [**A03**], an E minor 7 chord, over bars 3 and 4.

You can load my MIDI pattern to track 3, '**Tutor Piano Chords**' from the **Chapter A05** folder.

*Press the **SOLO** button at the bottom of the screen in **MAIN** to 'mute' all tracks other than the currently selected track. This helps you take a closer listen to the finer details of the current track. Press SOLO again to return to normal playback.*

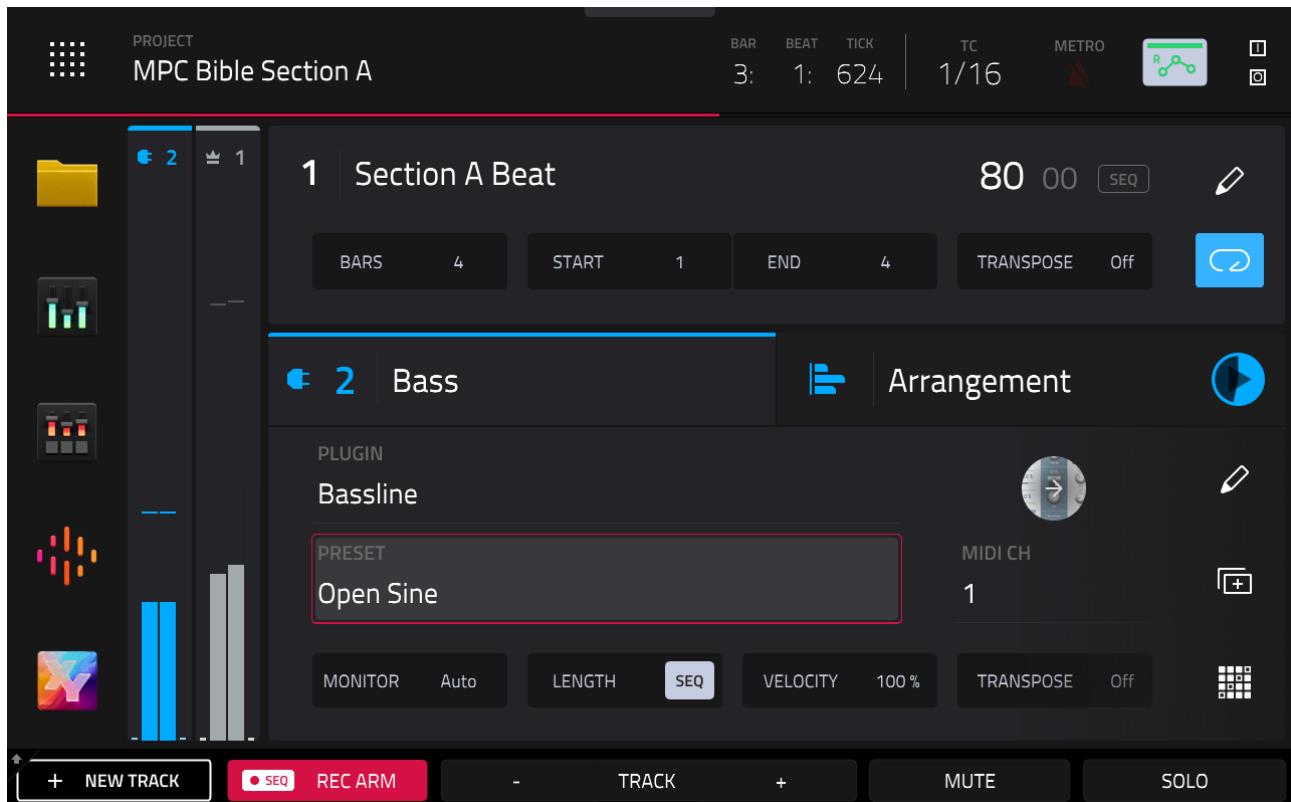
CHANGING THE BASS SOUND

Select your **Bass track** again. You can do this by single tapping the current track name and turning the (DATA WHEEL) anticlockwise, or you can hold down [**MAIN**] and while doing so, tap on the Bass track, either on screen or by hitting the corresponding physical pad, [**A02**].



Hit [**PLAY START**] and with the entire beat playing, start changing the bass preset in real time to preview some alternative bass sounds that

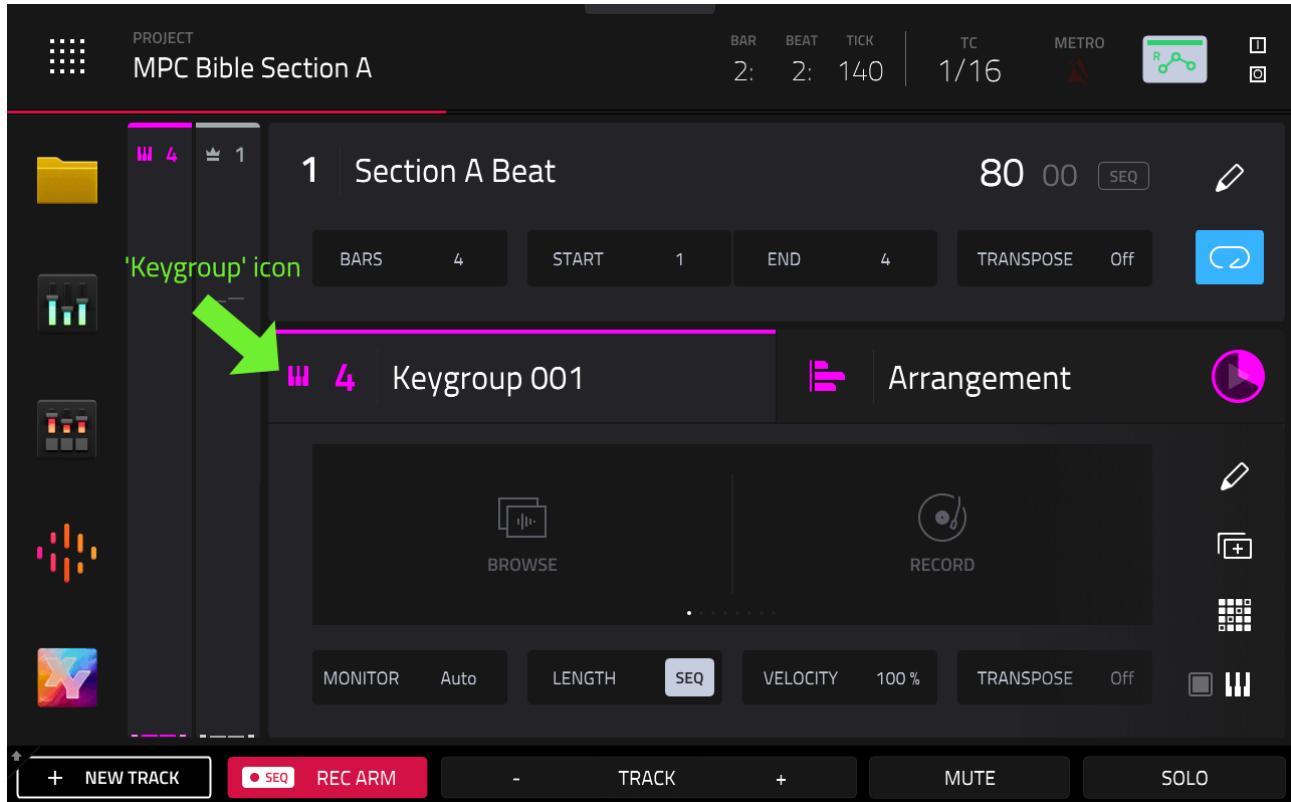
might work a little better with the piano chords. I settled on **Basic > Open Sine** to give the beat a deeper, more mellow vibe.



ADDING LAYERS

Before adding more layers to our beat, hold down **[SHIFT]** and press **[FULL LEVEL]** to select **{HALF LEVEL}**.

Back in **[MAIN]** hit the **+ NEW TRACK** button and this time select a **KEYGROUP** track, which is created as **track 4** in our sequence.

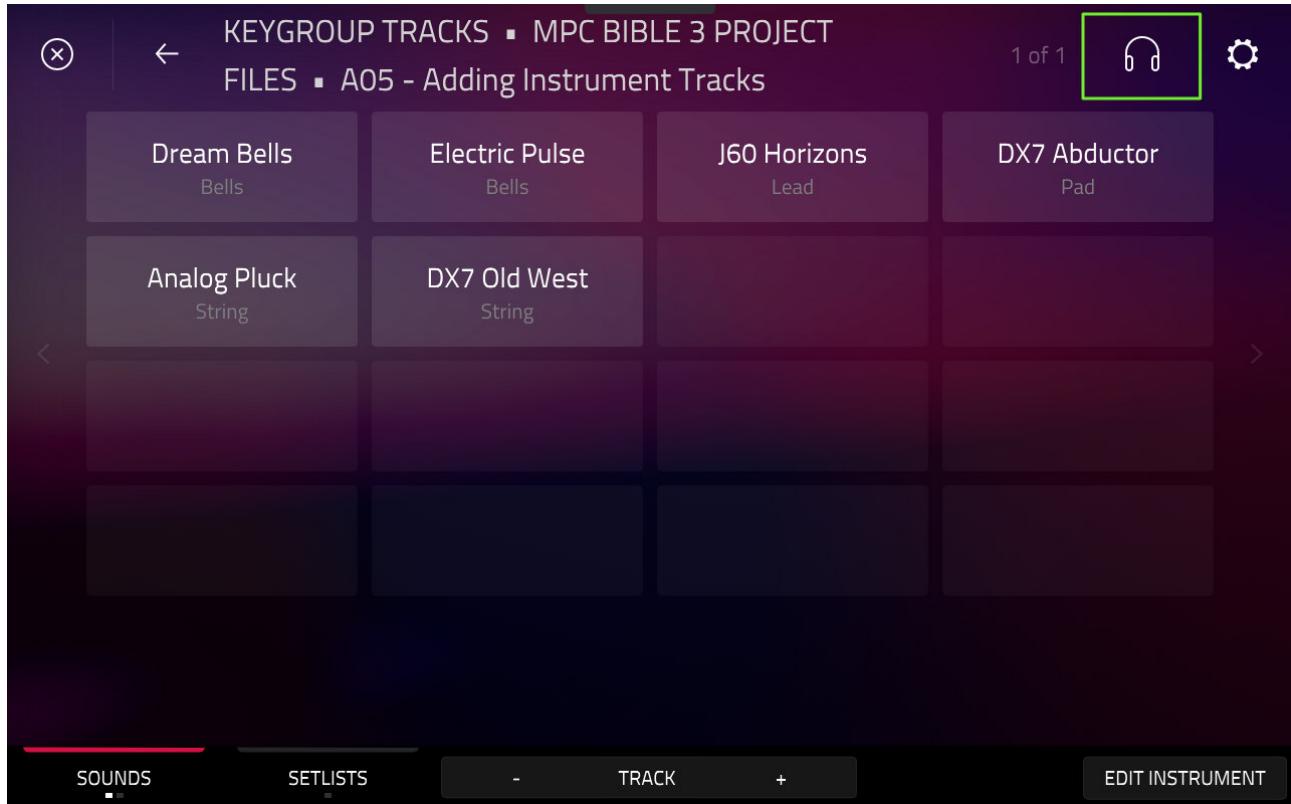


A **keygroup track** is used to hold 'sampled instruments', often called 'keygroup instruments'. These work similarly to plugin instruments, creating a playable instrument across the pads. We can create custom keygroup instruments from our own samples and we'll learn all about this later in the course.

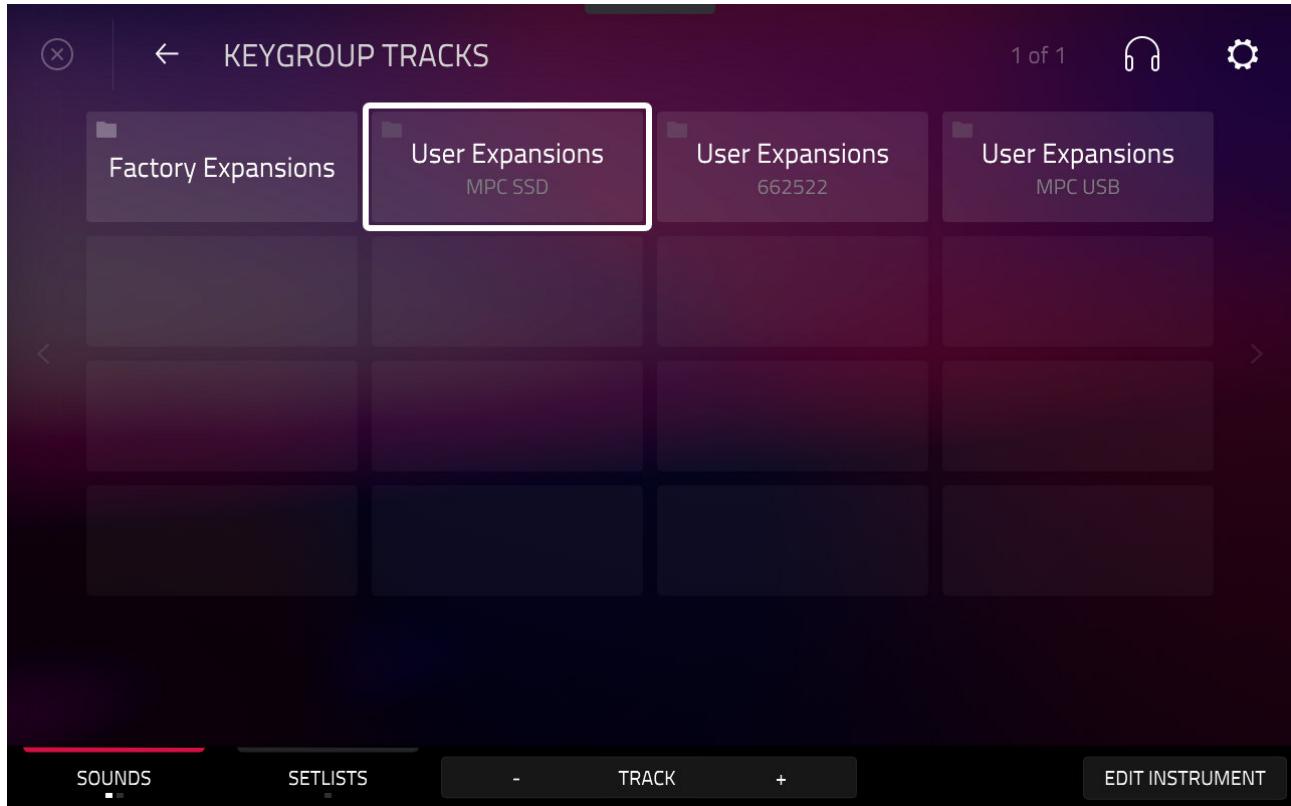


While we are limited to a maximum of 8 plugin tracks, there are no limits to the number of keygroup instruments we can add to a project (memory allowing).

Hit the **SOUNDS** icon in **MAIN** (or use the [**SOUNDS**] button if you have one). This time it will take you to the **KEYGROUP TRACKS** screen:



Here select **User Expansions (your MPC disk)** > **MPC Bible 3 Project Files** > **A05** and the instruments will show – remember to toggle audio previewing using the headphone icon.



Audio previews give you an idea of what the keygroups sound like, but the previews are pre-recorded in a specific key so are unlikely to match the key of your current project.

The easiest way to properly preview a keygroup instrument is to simply load it by tapping on it. Just remember to turn off the audio preview icon first, otherwise the instruments won't load!

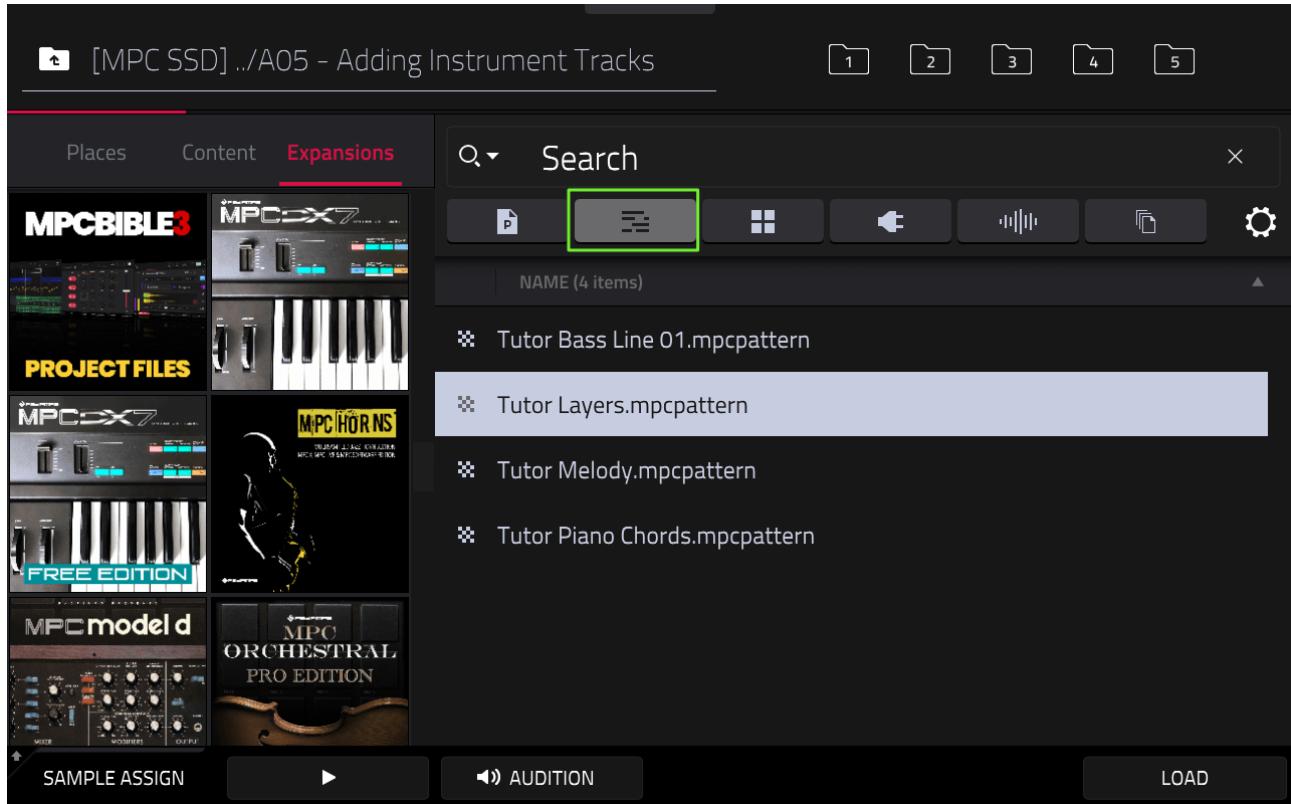
So, tap on **DX7 Abductor** and it loads to the current track. You can now play the pads - notice how they are still locked into your chosen PAD PERFORM configuration, so you can easily play along to the existing beat - so hit **[PLAY START]** and jam around with the keygroup - remember you can use the **[PAD BANK]** buttons to change the current octave.

Want to try another instrument? No need to press 'stop', just let the sequence carry on playing and tap on another keygroup – try '**DX7 Old West**'. This will now load directly to track 4 and replace the previous instrument, all in real time without any pauses or glitches.

You can even record to this track directly from the SOUNDS browser – while the sequence is playing, press [**REC**] and the MPC will jump immediately into 'record' mode, and then after looping will switch to 'overdub' mode, just like it does in MAIN.

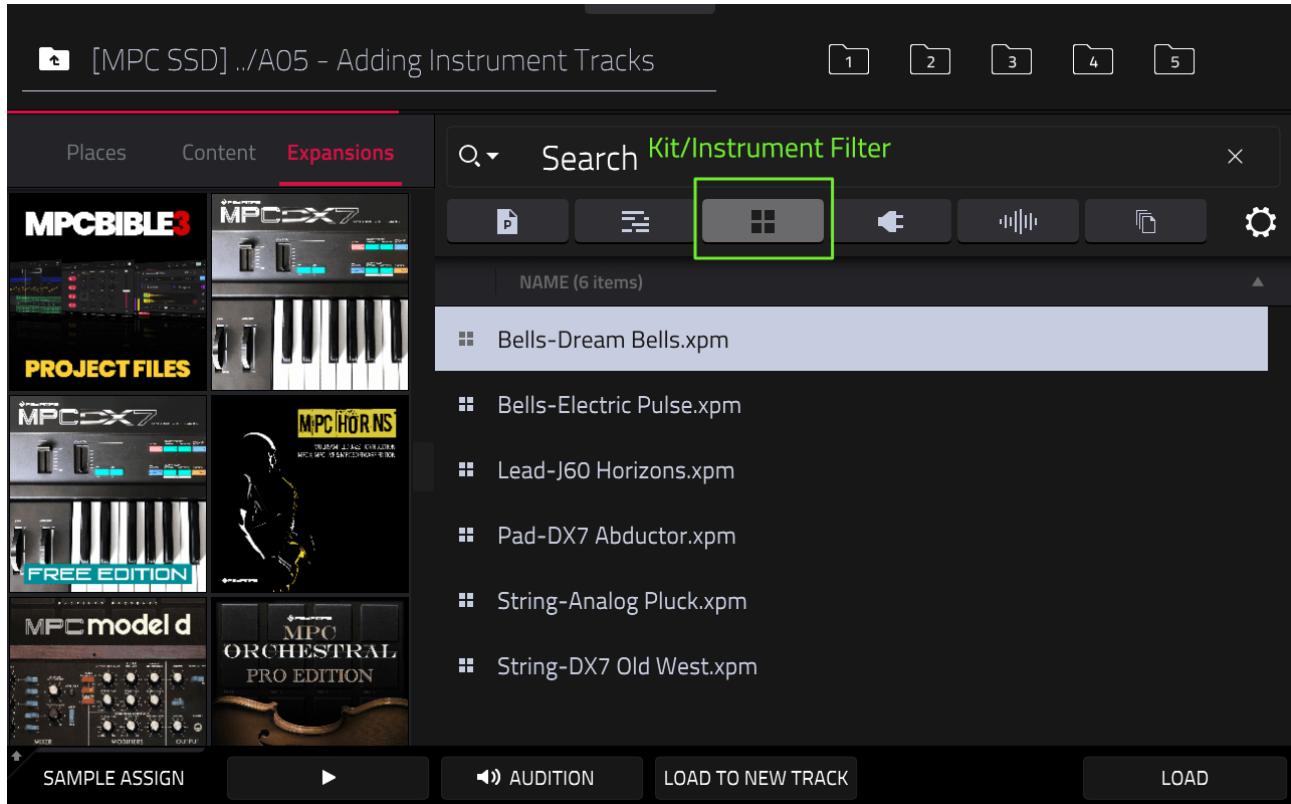
Use the DX7 Old West instrument to add an additional chord layer to the beat – nothing too complex, even just more of the same C and Em chords.

You can load my additional chord layer pattern – but not from the SOUNDS browser as it doesn't support loading MIDI pattern files (only kits, instruments and presets). So head back to the 'file' **BROWSER**, and in the **MPC Bible 3 Project Files > A05** folder, load the MIDI pattern file **Tutor Layers.mpcpattern** (remember to use the MIDI filter):



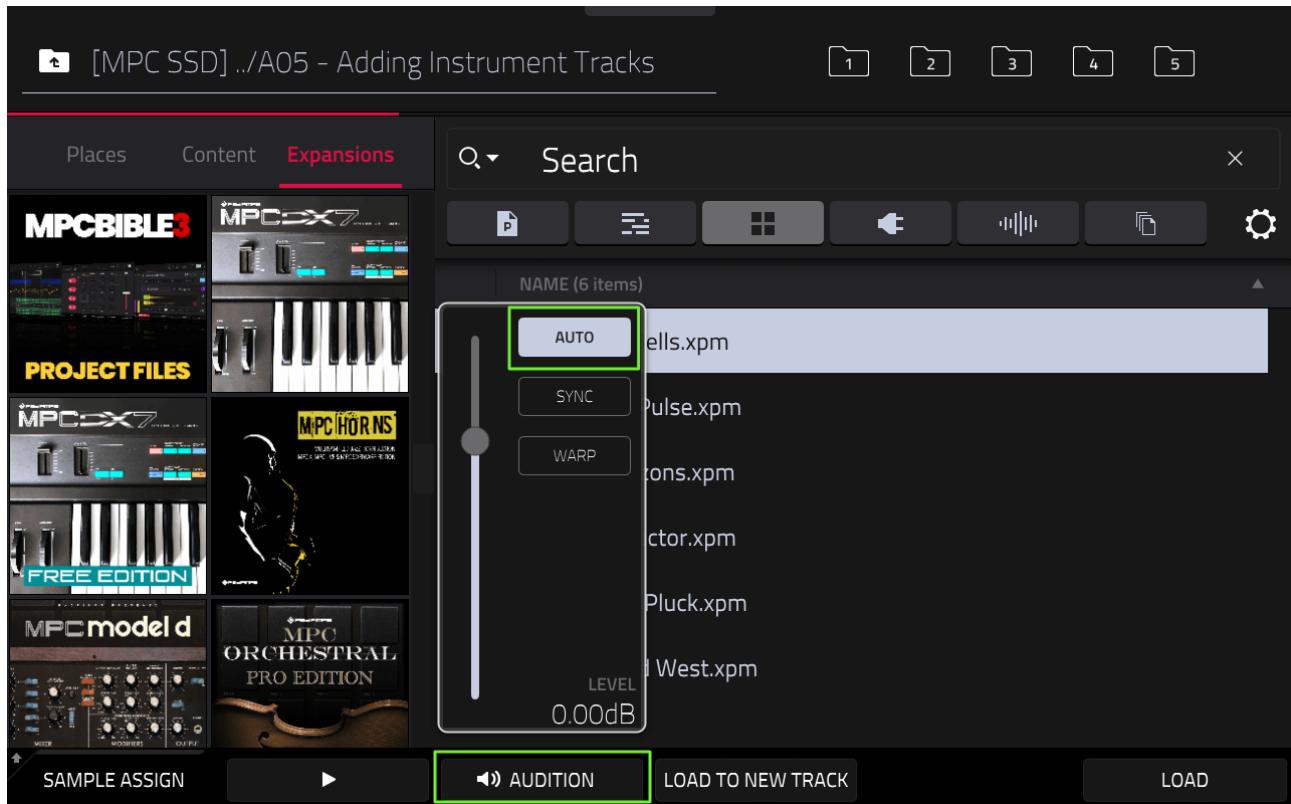
ADDING A MELODY

While you are here in the file BROWSER, let's load another keygroup instrument to a new track in our sequence. Switch from the MIDI filter to the **Kits/Instruments** filter (sometimes called the 'Program' or 'Track' filter):



You'll now only see drum kits or instruments – as you can see, there's the same six instruments in this folder that we saw in the SOUNDS browser.

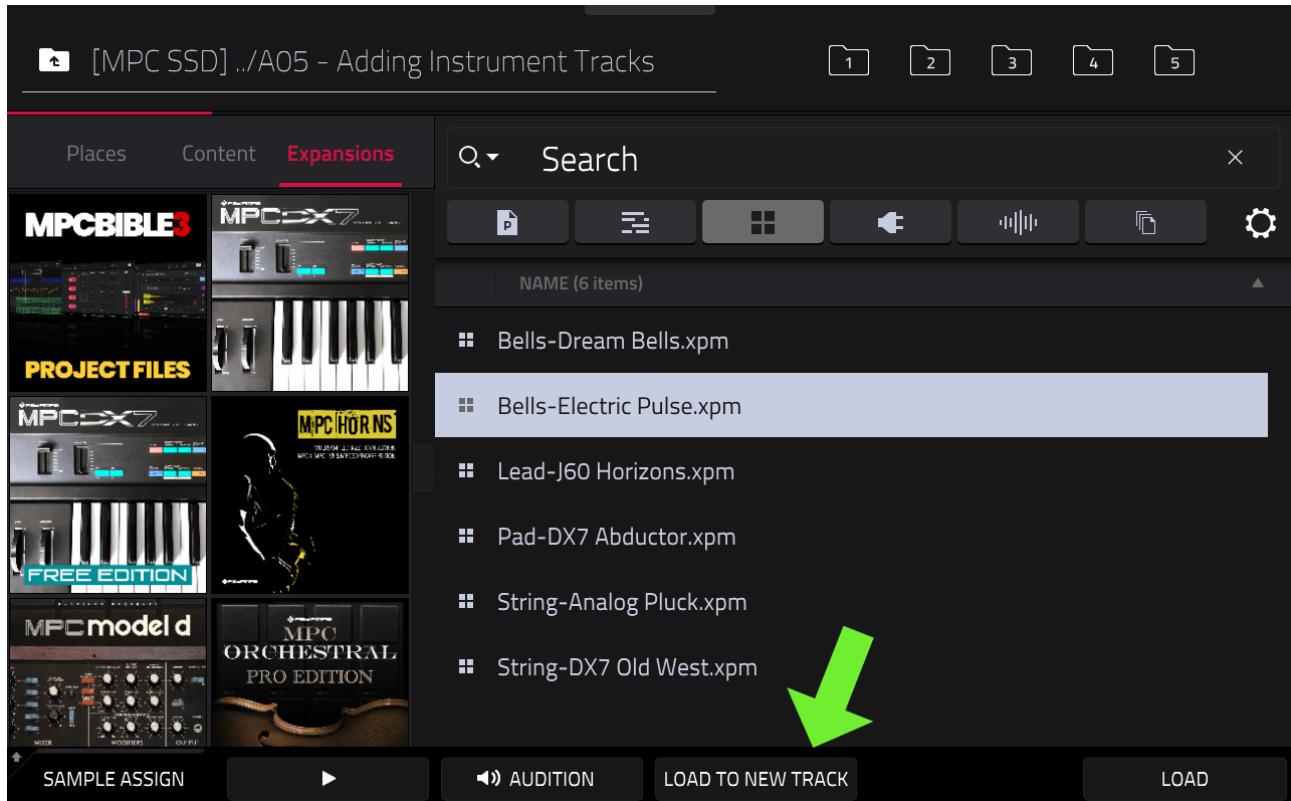
To activate audio previews in the file browser, tap on the **AUDITION** button and enable **AUTO**:



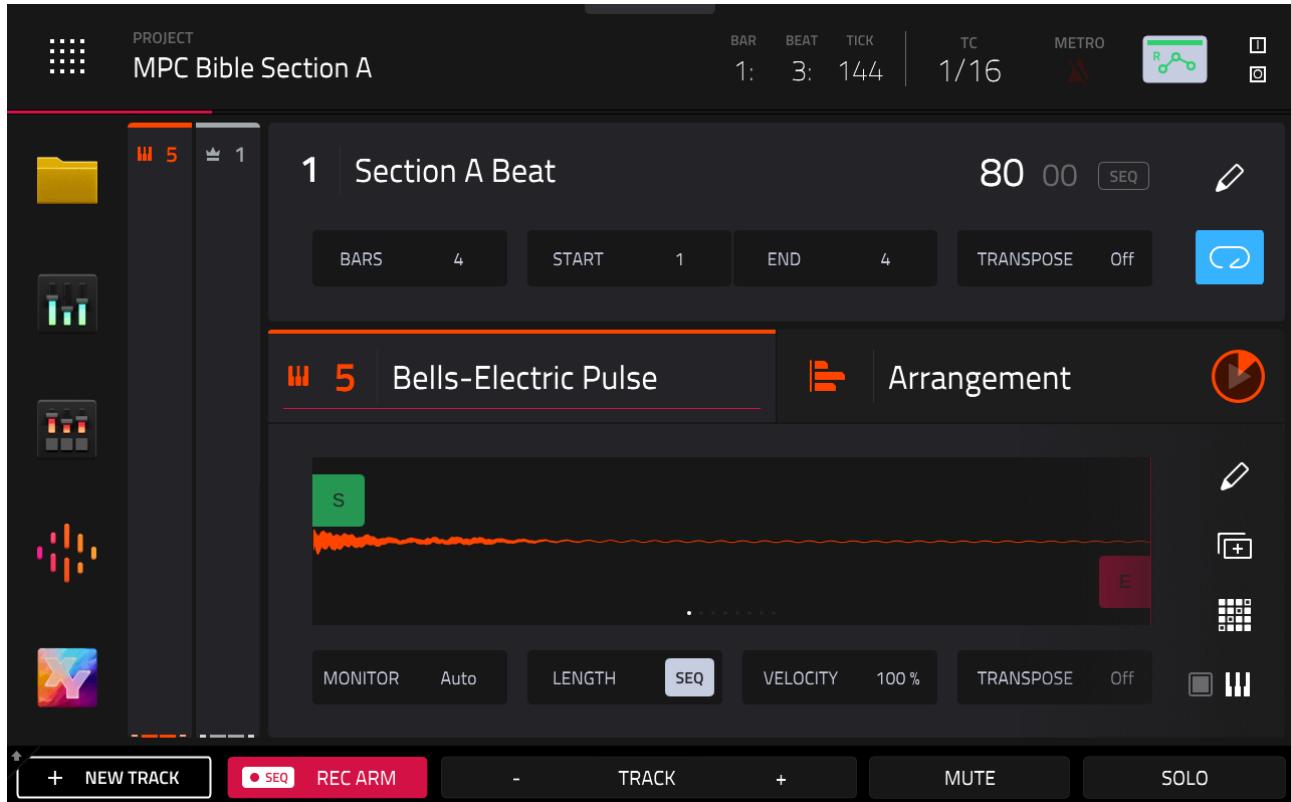
I normally disable the **WARP** option otherwise your browser previews can sometimes sound a little strange, but we'll learn all about warping later in the course. Single tap each of the instruments to hear the preview.

Our currently selected keygroup track is currently populated by our '**DX7 Old West**' instrument track; we don't want to lose this so we need to load our next keygroup to a completely new 'KEYGROUP' type track. We've seen we can add a new keygroup track using the '+NEW TRACK' button in MAIN, but we can also add a new track here in the file browser, while simultaneously loading a new instrument to it.

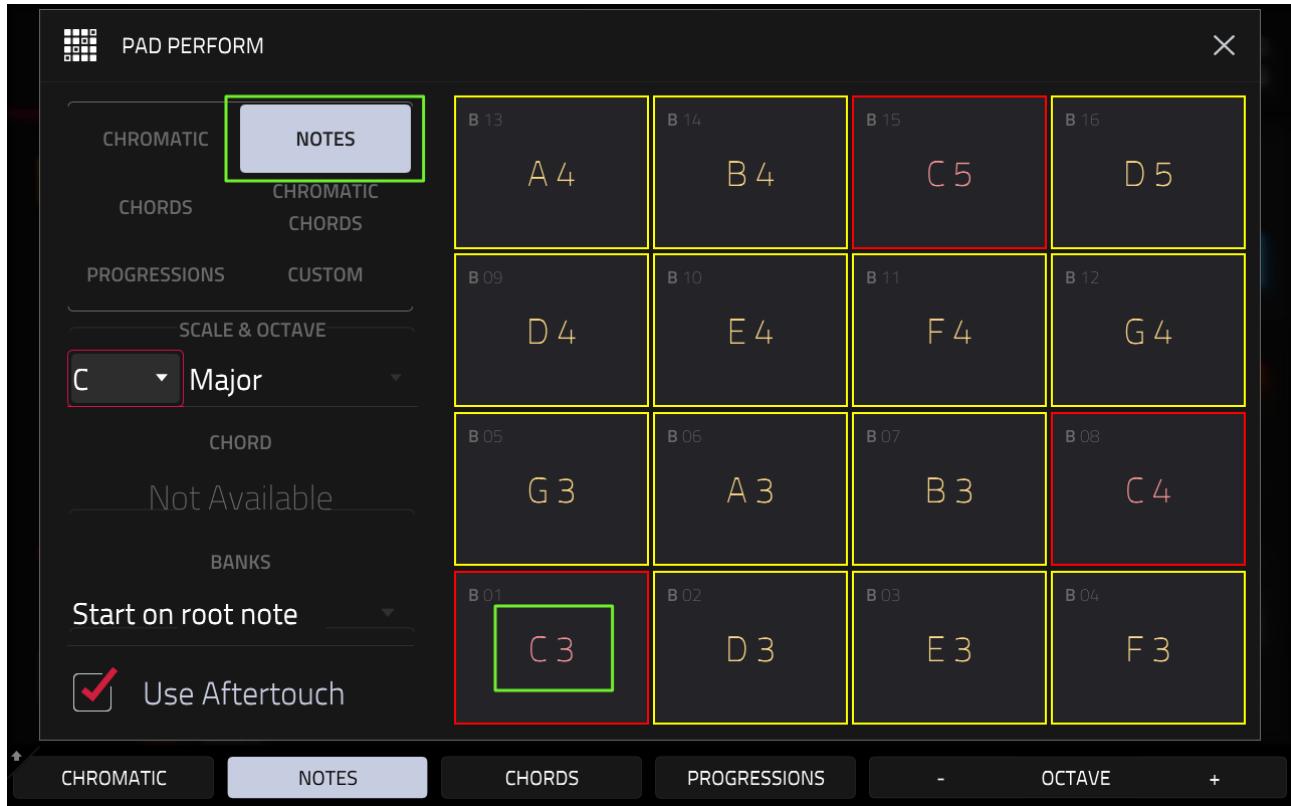
Single tap to select the **Bells-Electric Pulse** instrument file and press the **LOAD TO NEW TRACK** button (if you press the LOAD button it will overwrite our existing track!):



While you are still in the file browser, play some pads and you'll notice that 'PAD PERFORM' doesn't work here, your pads are now in 'chromatic mode' where they play every single note from the very low 'C-2' upwards. To play our new keygroup with PAD PERFORM re-enabled, head back to [**MAIN**]:



Double tap **[16 LEVEL]** and from the PAD PERFORM screen, select '**NOTES**' mode and use the **OCTAVE** and **[PAD BANK]** buttons to set a **C3** note on the bottom left pad; we just want the melody to be at a higher 'register' compared to all the other parts we've created:



As before, hit [**PLAY START**] and begin playing around with the pads to come up with some melody ideas. PAD PERFORM ensures your notes are all 'in key' so just keep on playing until something sounds great. Keep it simple, it's really nice to add lots of layers to a beat but the music still needs to 'breath' so remember to leave some space.

You can load up my pattern from the **A05** folder; **Tutor Melody.mpcpattern**.

Let's see if we can find an even better instrument for the melody. Stay in the **BROWSER** and hit [**PLAY START**]. While the sequence plays, try loading other instruments to this new keygroup track. By loading a new keygroup instrument to the current track the existing MIDI events that you recorded on that track will remain, only the instrument itself will be replaced.

So, select the '**Kits/Instruments**' filter and double tap **String-Analog Pluck** (or single tap and hit LOAD). Do not use LOAD TO NEW TRACK, as this time we **do** want to replace the instrument on the current track!

While the new instrument loads the sound from the current track will briefly become silent, but then the new instrument takes over and you'll hear the melody played with the newly loaded Analog Pluck instrument. What do you think? Not quite there for me, so try the **Lead-J60 Horizons** instrument instead - again, just double tap it, there's no need to stop playback.

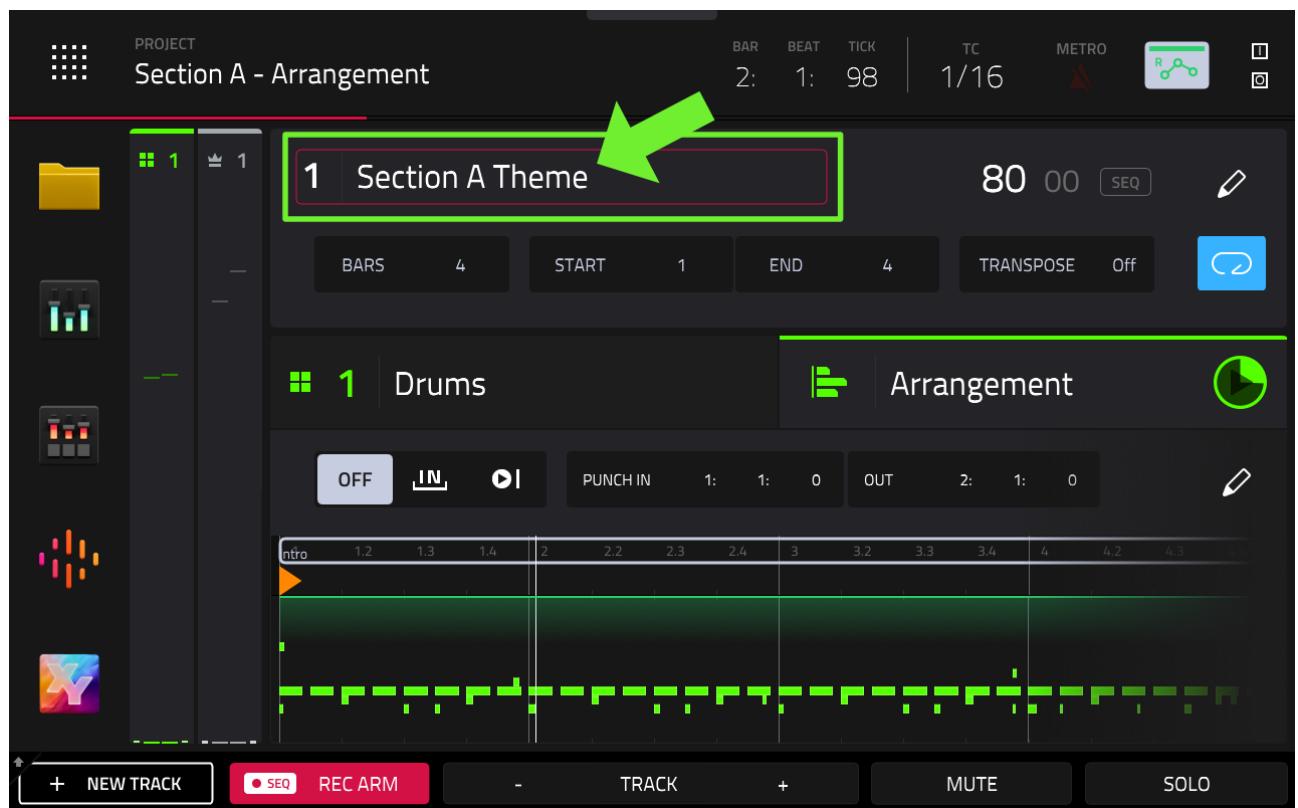
For me, the **J60 Horizons** instrument is the one, but you pick whichever instrument you prefer; and if you simply liked the original 'Electric Pulse' instrument, just re-load it (or hit [UNDO] twice!).

Once you've decided on an instrument for your melody, sit back and listen to all your hard work; you've just finished making your first multi-track MPC sequence!

THE NEXT STEPS

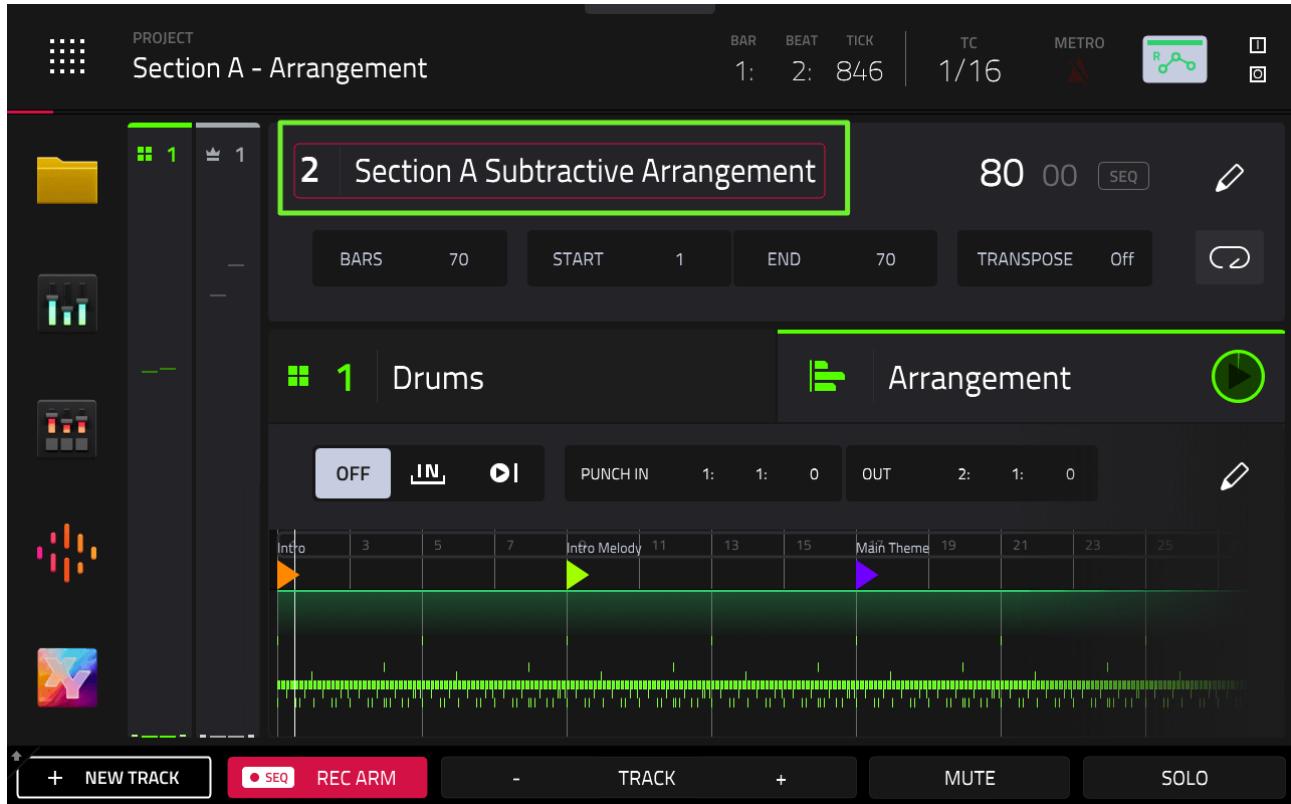
In this section we've created a simple four bar 'theme' using five tracks of instrumentation, all built using nothing more than fairly rudimentary MPC sequencing and performance tools. This multi-track sequence can now act as the foundation to a fully structured 'composition' - and in the next two sections of the course I'm going to cover everything you need to know to accomplish exactly that (along with a whole bunch of essential sound design and production skills!).

In the meantime, save your current project to your 'Projects' folder, and then head over to the **A05** folder in the '**MPC Bible 3 Project Files**' expansion, enable the **PROJECTS** filter and load '**Section A - Arrangement.xpj**'.



In '**Sequence 1**' you'll find my final version of the '**Section A Theme**' but single tap on the sequence name and turn your (DATA WHEEL) one click clockwise (or use the [+] button) – this will take you to '**Sequence 2**' of this project:

A05: ADDING INSTRUMENT TRACKS



Here I've created a very simple 'subtractive arrangement' of this 'Section A' theme which I built using some of the arrangement techniques that we'll be learning in the next section of the course.

Hit [**PLAY START**] to hear it (it's 70 bars long) – all I've effectively done here is duplicate our 4 bar theme multiple times and then muted or erased different parts to create a basic song structure. Enjoy!

SECTION B

CORE MPC SKILLS

Now that you're comfortable with the basics of the MPC ecosystem we're going to deep dive into the MPC's core editing features so you can develop your own sound design & song building skills.

BO1: BUILDING A DRUM KIT

In the previous section of the course we loaded a ready-made drum kit into our project and while you can of course continue using third party kits, most MPC users will eventually yearn to build their own signature kits to help develop their unique sound.

TOPICS COVERED IN THIS CHAPTER

- ✓ Setting up a new drum kit
- ✓ Loading and assigning samples from the BROWSER
- ✓ Setting pad colours
- ✓ Kit mixing with the Pad mixer
- ✓ **Workshop:** Using the Q-LINKS

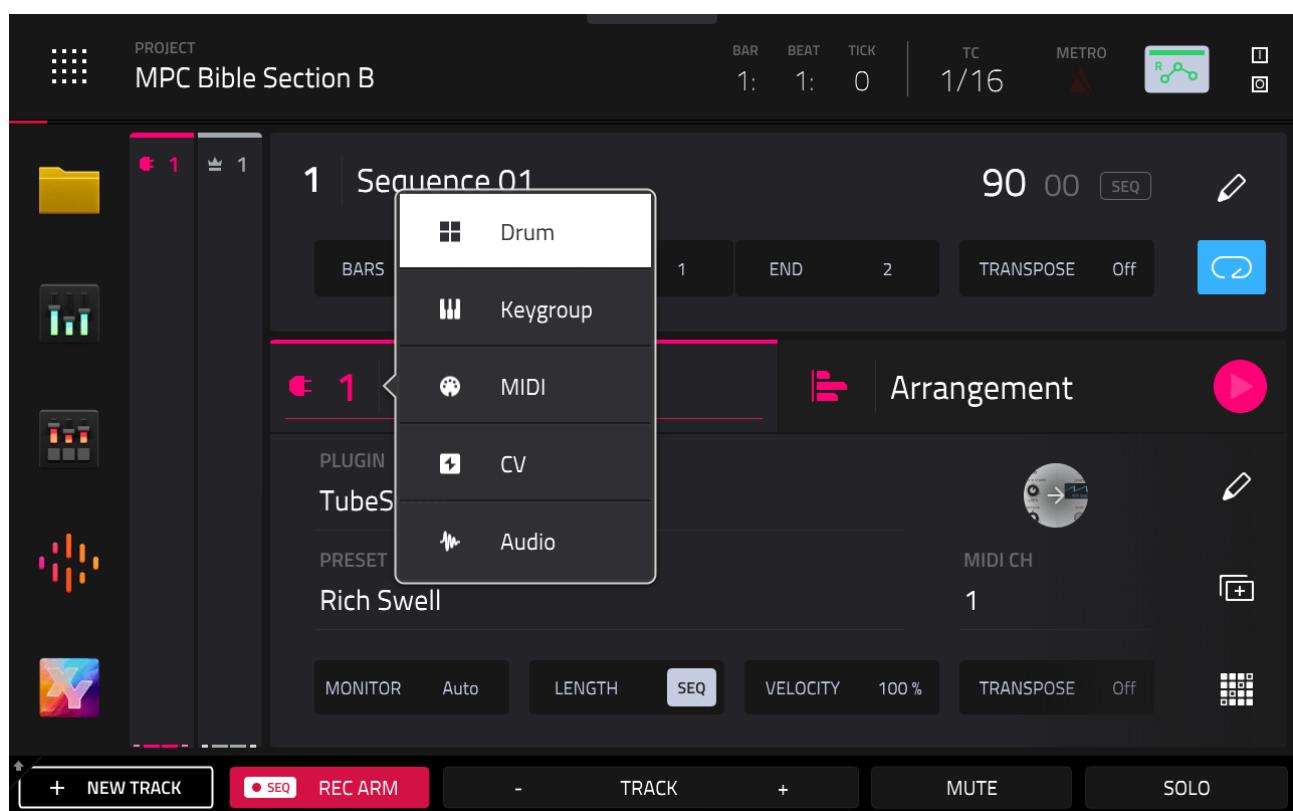
LOADING AND ASSIGNING SAMPLES TO A KIT

Building a drum kit is a great way of learning the ins and outs of the MPC's track editing functionality. First, start with a completely new, blank project. If you've just turned on your MPC you should be good to go, otherwise go to [**MENU**] > **NEW PROJECT**.

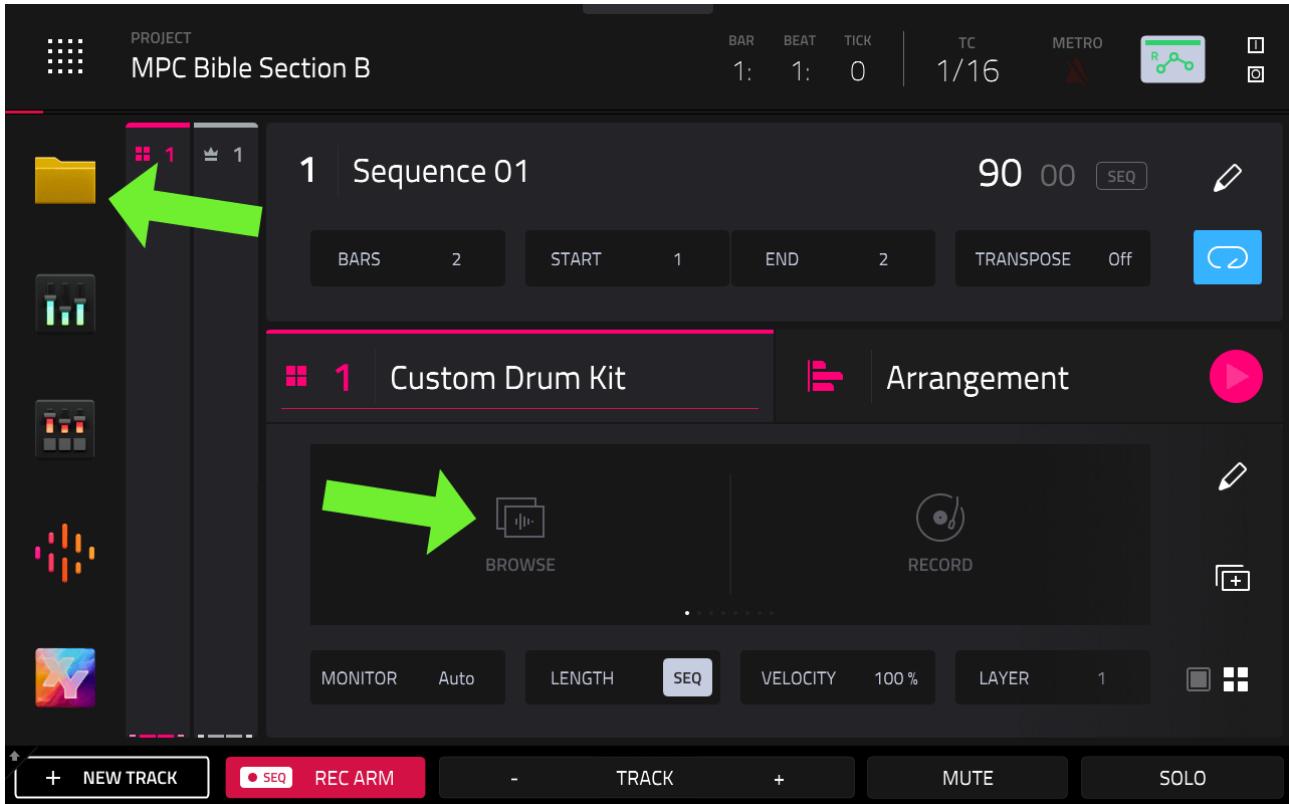


Remember there's a few preference settings that dictate what happens when you create a 'new project', so do ensure you've set them [as per my recommendations earlier in the course](#).

In [MAIN], set **track 1** to be a **DRUM** type track. On some MPC models, it will already be set to DRUM, otherwise 'single tap' on the **track number (1)** until the track type dialog pops up:

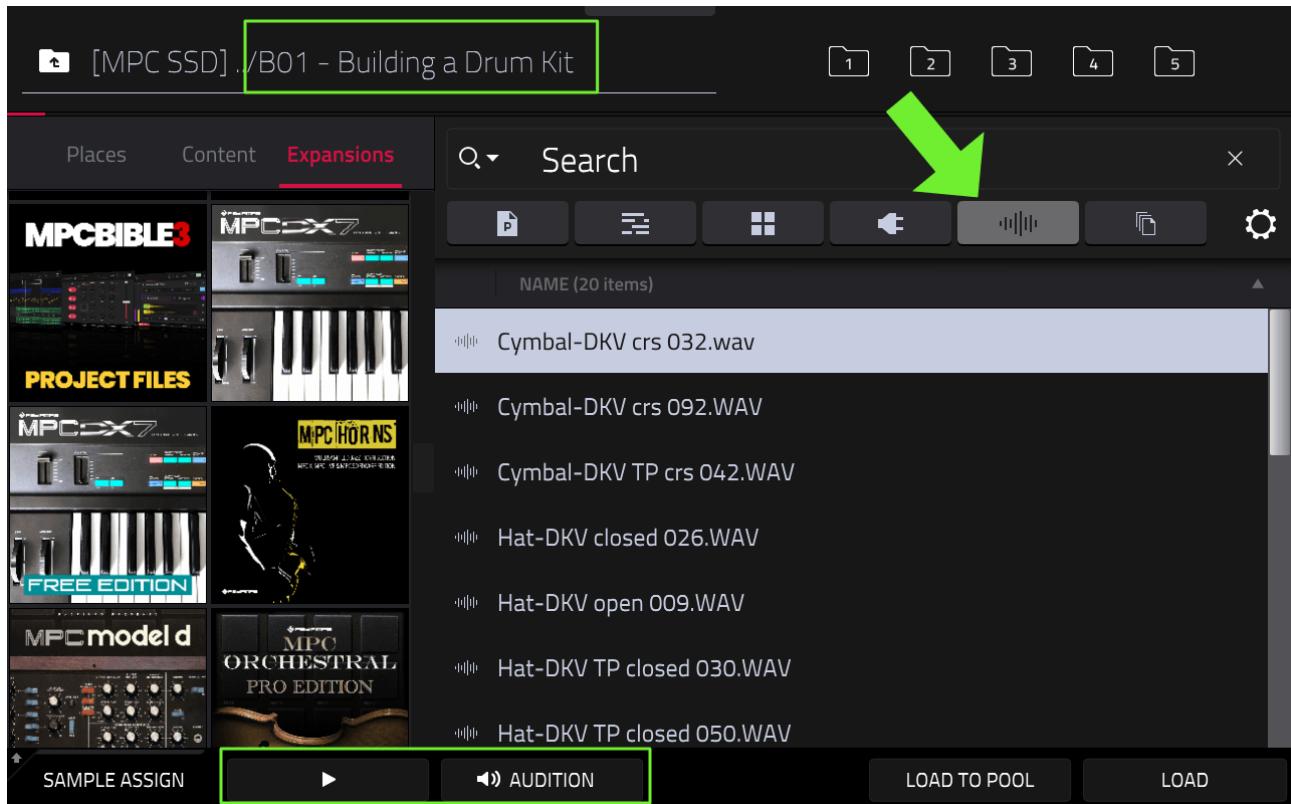


Change the **track type** to **DRUM**. Double tap the track name to bring up the track settings screen and rename our empty DRUM track to '**Custom Drum Kit**':



Hit pad [A01]. As you can see, there is no sample waveform showing the the track tab, but there is an **BROWSE** option. Tap on this to take you to the (file) **BROWSER**. Alternatively you can use the yellow folder icon on the left side of the screen.

Tap on the **Expansions** tab, select the **MPC Bible 3 Projects** Expansion and enter the **Chapter B01** folder. On the right hand side of the screen, select the '**Samples**' filter so that only samples are displayed.



This folder contains a collection of different drum samples, including kicks, snares, hi hats, cymbals and percussion. Let's use the browser to both preview these sounds and assign some of them to the pads in our '**Custom Drum Kit**' DRUM track.

If you didn't enable AUDITION previously in Section A, do so now by tapping on '**AUDITION**' and making sure **AUTO** is selected. If WARP is selected, tap no this to turn it off. Press AUDITION again to close the audition dialog.

Tap the sample at the top of the sample list and start to turn your (DATA WHEEL) to scroll through and simultaneously preview all the samples in this folder – you can also use the 'play' triangle icon in the bottom menu bar to manually preview any sound.

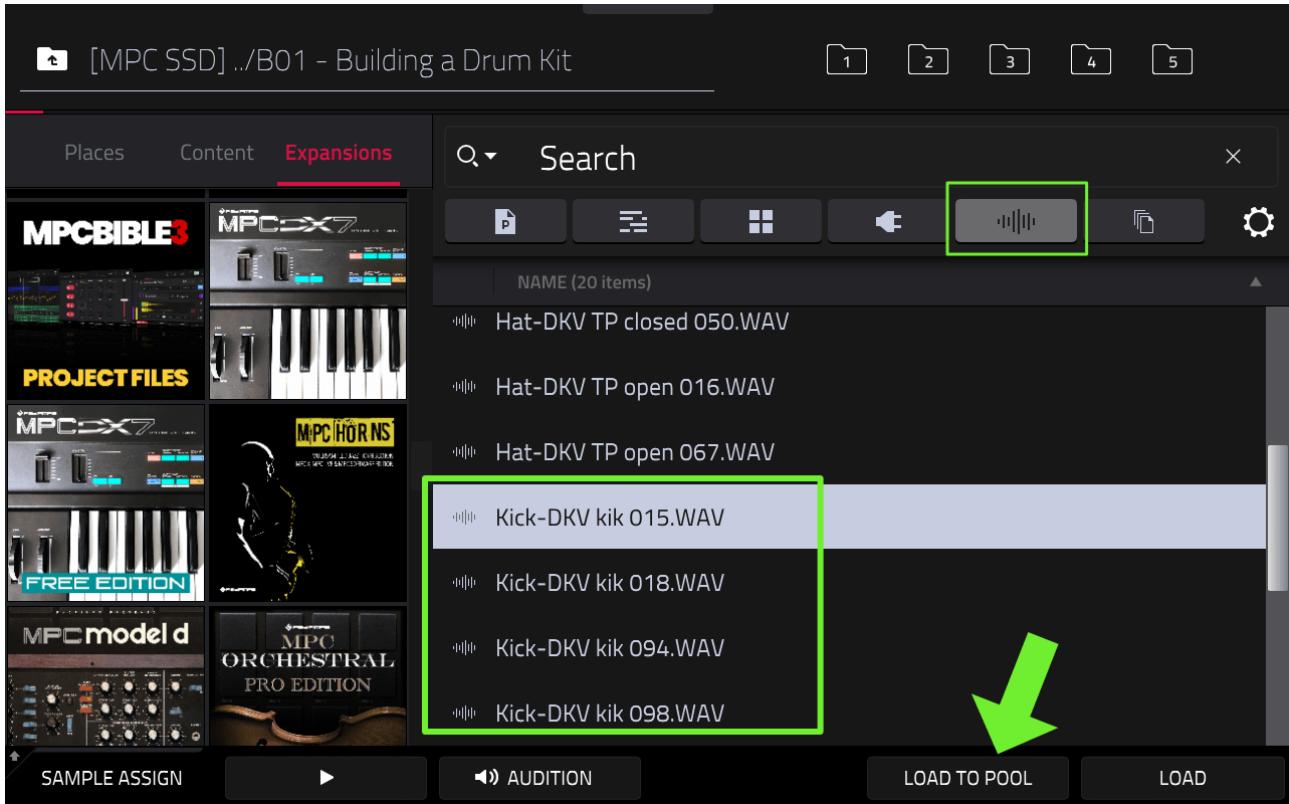


The first sample in the list doesn't usually preview the first time you select it, so you normally have to select the second sample and then go back to the first sample to enable the auto preview – or hit the 'play' button in the bottom menu bar.

LOADING SAMPLES INTO A PROJECT

There's fundamentally two ways we can load samples into a project. One is to load them to a specific pad within the current track. The other is to load them to the '**pool**', which just means the sample is just loaded into memory and not currently assigned to any track.

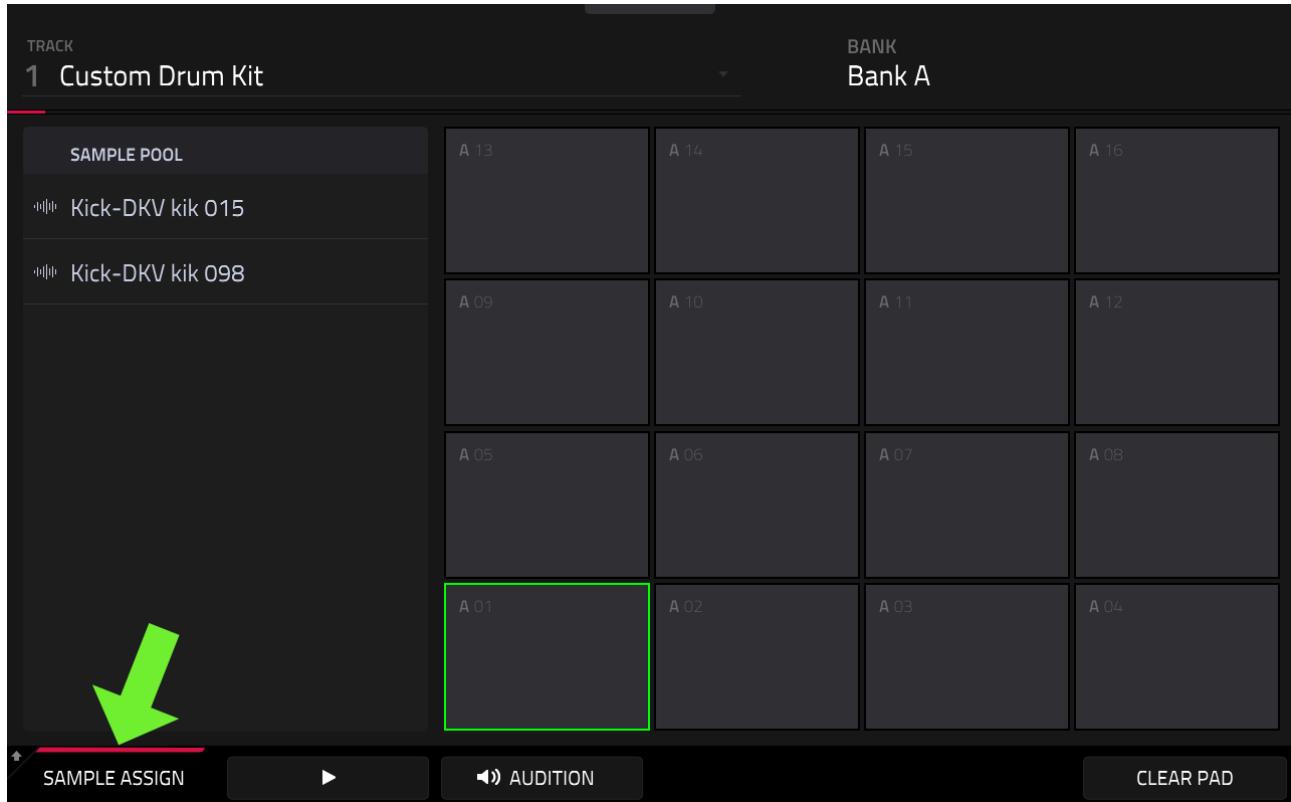
Let's load some kicks into the 'sample pool'. Scroll down the list of samples in folder B01 until you come to samples named with a '**Kick-**' prefix:



Single tap the sample **Kick-DKV kik 098.wav** to simultaneously preview and select it. To load this kick drum sample into 'the pool', tap the **LOAD TO POOL** button at the bottom of the screen.

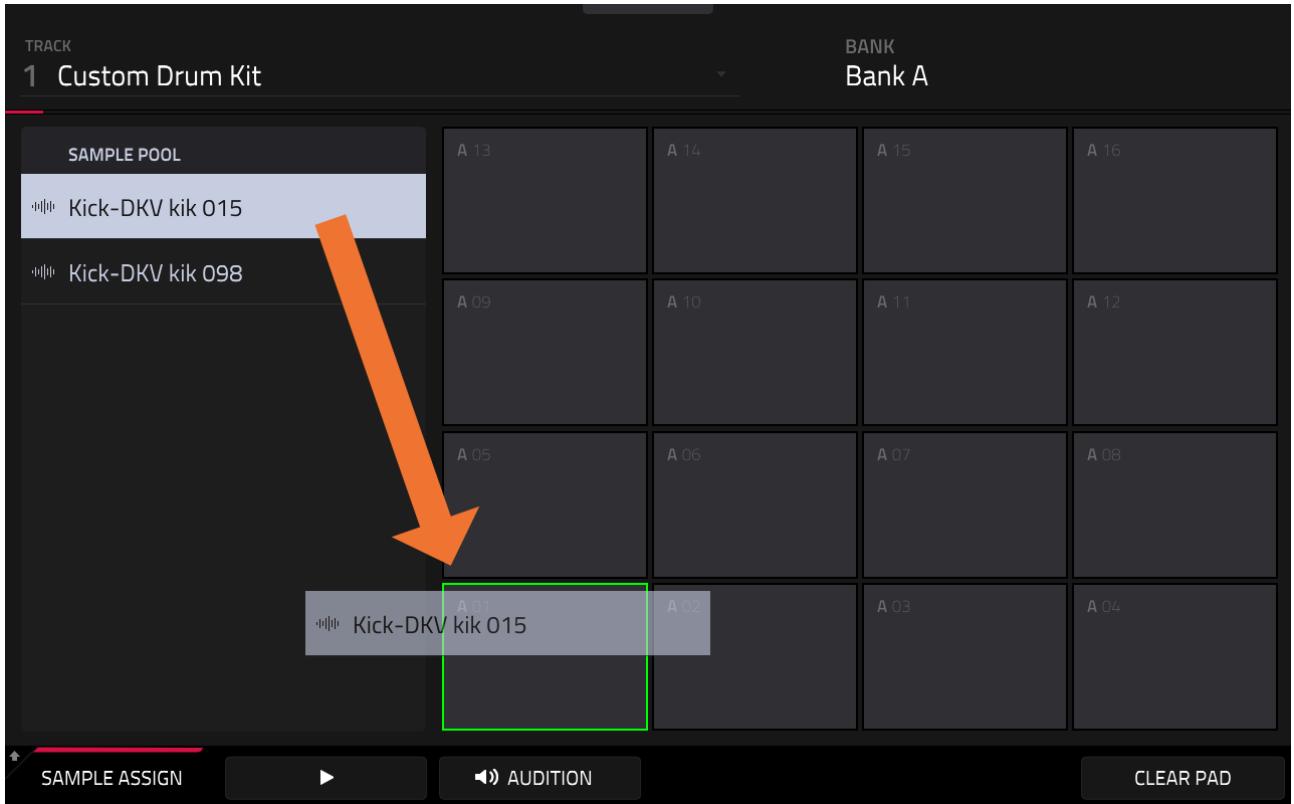
You should see confirmation that loading was successful. Now try loading **Kick-DKV kik 015.wav** in the same way.

To view what's currently in the sample pool for your project, you can hit the **SAMPLE ASSIGN** button at the bottom of the screen:

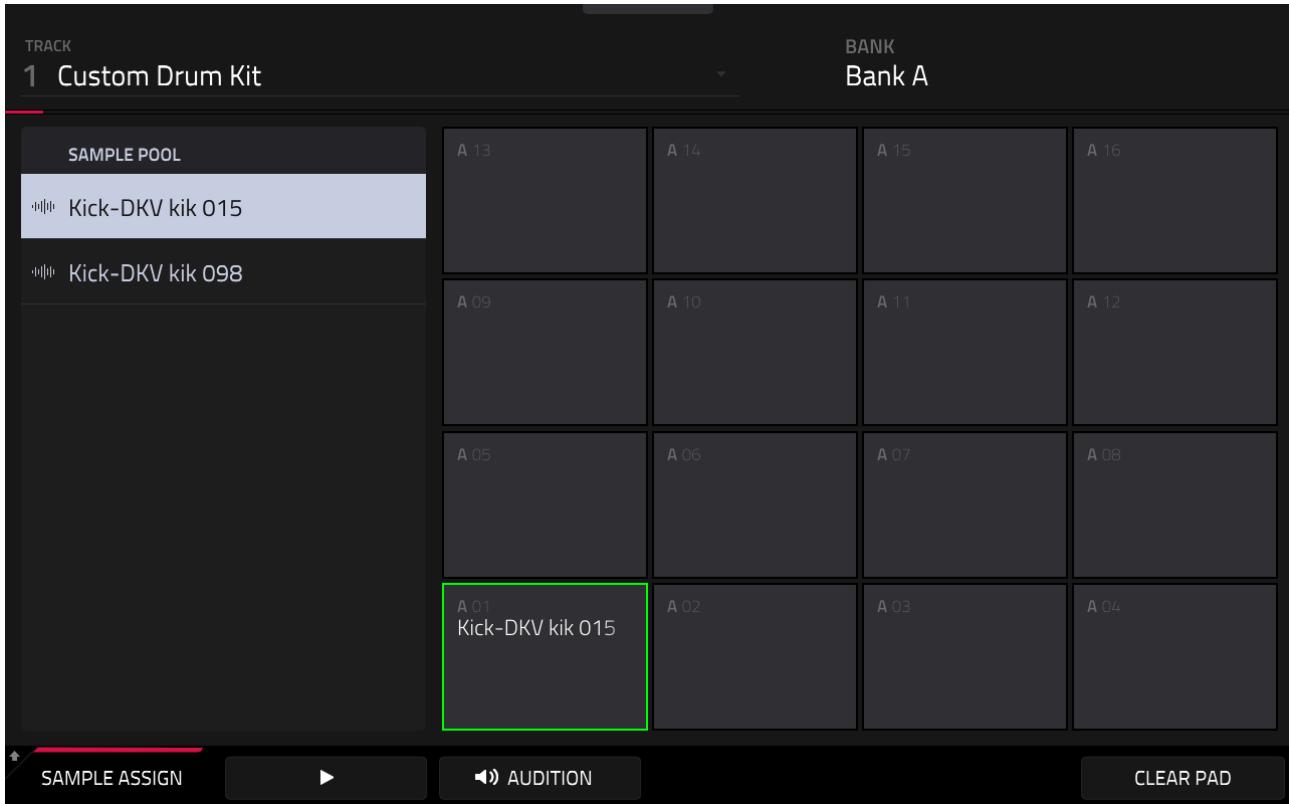


Your **SAMPLE POOL** is on the left; as you can see, there's currently two samples in your project which are now immediately available for editing and assigning to pads in your tracks.

Let's assign one of these kick samples to pad [**A01**] in the **Custom Drum Kit** track. Using the touchscreen, drag the **Kick-DKV kik 015** sample to pad [**A01**]:



Now release it and the sample will be assigned:

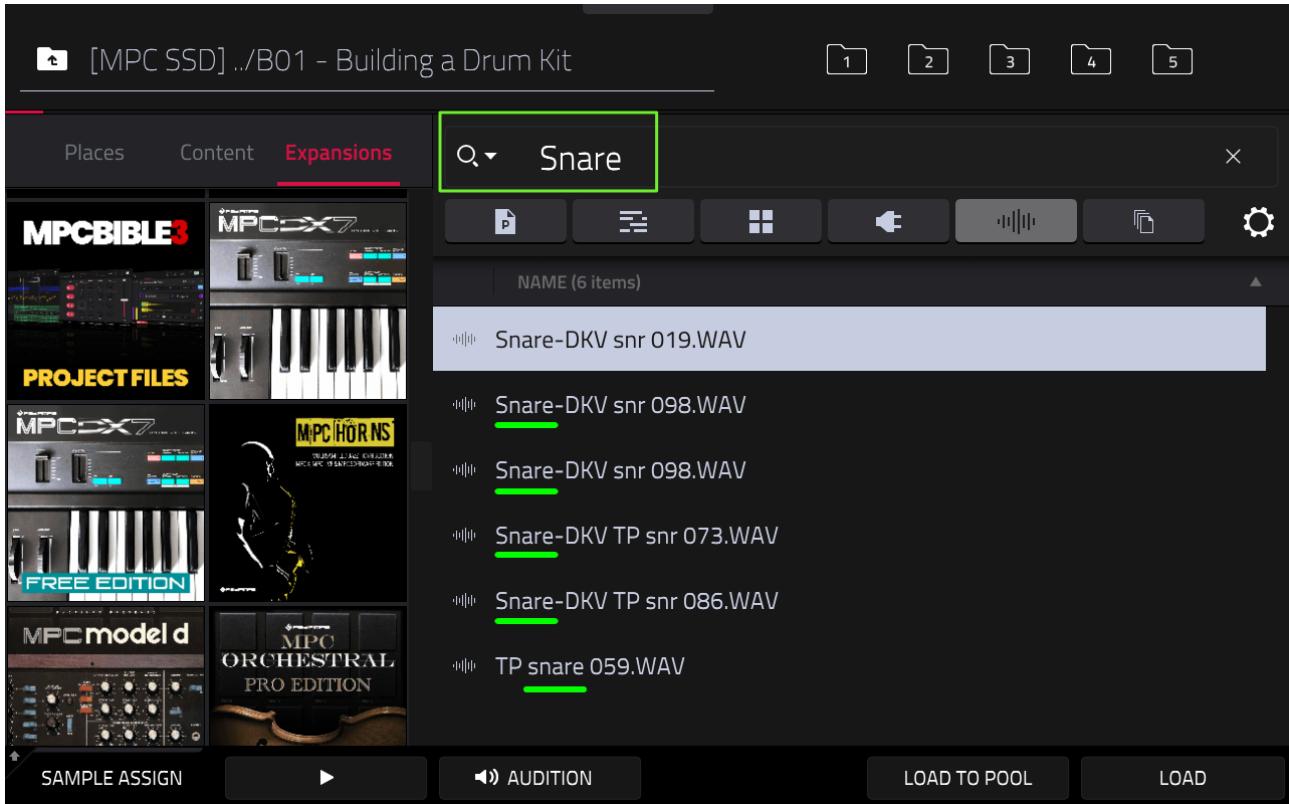


Hit the physical pad [A01] to hear our kick drum in action.

Hit the **SAMPLE ASSIGN** button at the bottom left of the screen to switch back the main BROWSER screen. Let's look at how we can simultaneously load and assign a snare to pad [A02].

You can locate a suitable snare sound by scrolling and previewing through the entire folder like we did previously, however, you'll notice that all the sample names in this folder have been 'tagged' so we can also locate a certain type of sound by keywords in its name.

Tap on the '**Search directory**' box' and enter the phrase '**snare**':



Now you can only see the samples with the phrase 'snare' in their file name. Notice that most of the samples start with the '**Snare-**' prefix. In the MPC, these prefixes are referred to as '**tags**' and you'll see them used in the 'factory' expansions samples, kits and instruments. Here I'm using them to help identify the 'type' of drum sound, but they can also be used to define genre (e.g. HipHop-, 'Trap-' etc).

'Tagging' is optional, it's something that gets used more in the MPC Software but it's good practice and it does ensure your samples are easier to locate, especially if they are not organised into folders.

Notice how the 'snares' search also bring up the 'untagged' sample '**TP snare 059**', so even if your samples are not tagged, they should still appear on a keyword search.

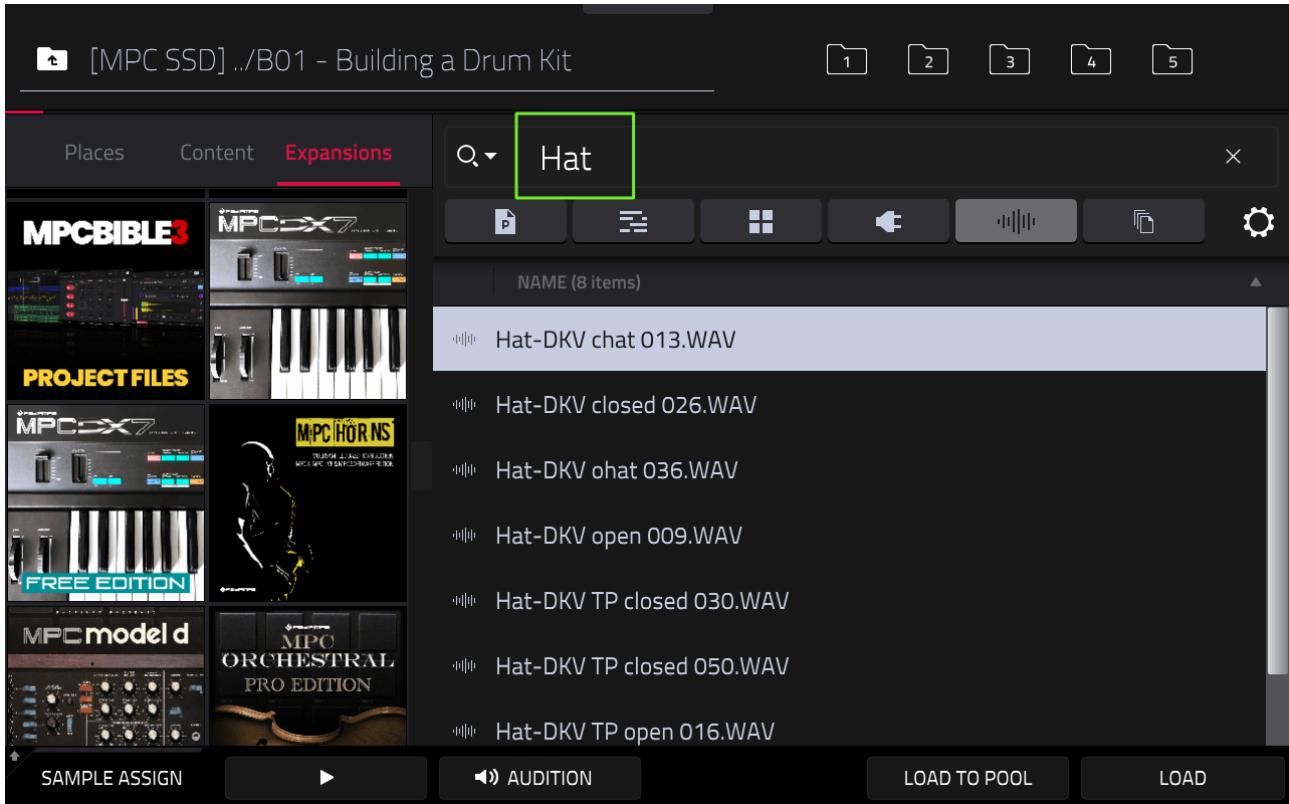


The search feature also displays results from within any subfolders in the current location.

Let's load a snare sample directly to pad [A02]. First tap on pad [A02] so the pad itself turns **green**. This means that this pad is now the 'destination' for the next loaded sample.

Now either double tap on the sample '**Snare-DKV snr 098**' or single tap it and hit the **LOAD** button (not the LOAD TO POOL button). The snare is now loaded into your project and simultaneously assigned to pad [A02]. You can now hit pad [A02] to hear your assigned snare.

Clear the '**Search Directory**' field using the 'X' at the end of the field and enter the term '**Hat**':

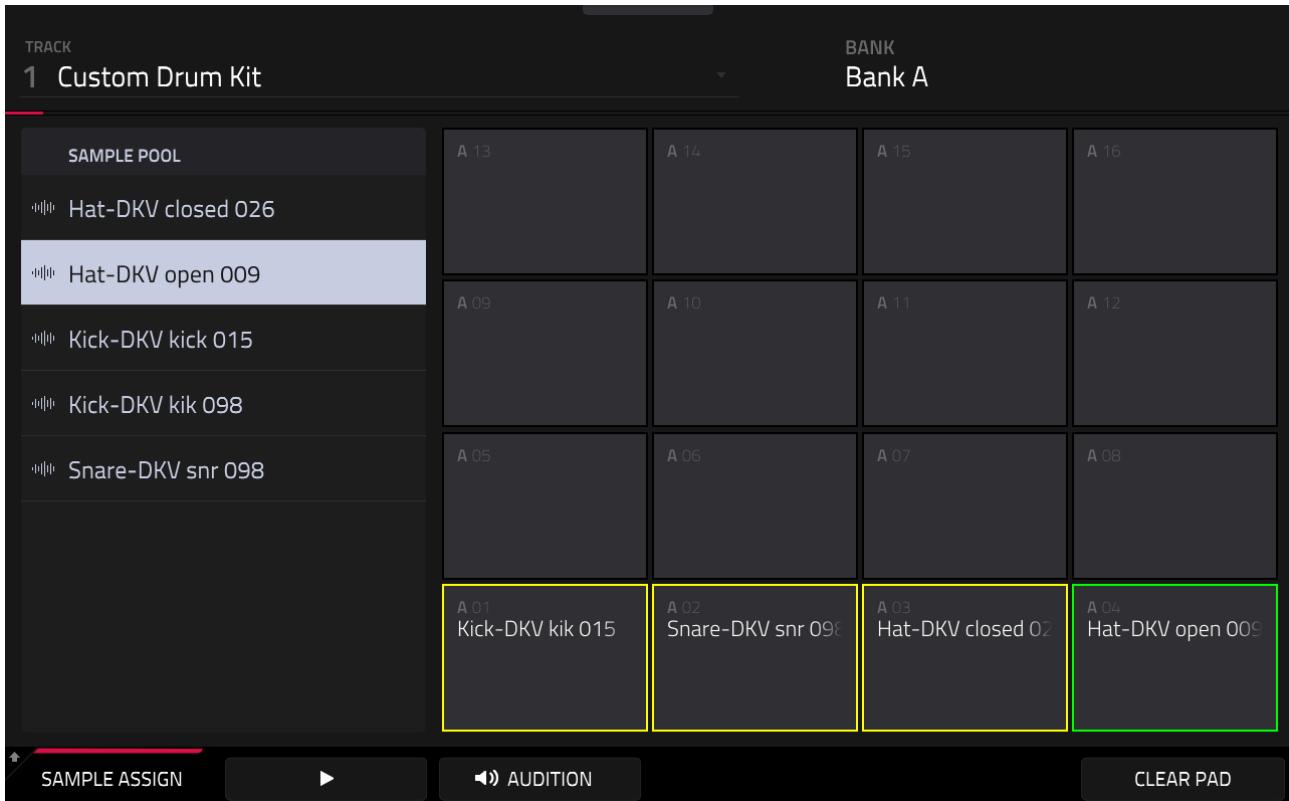


There's quite a few samples tagged as 'hats' – from the file names we can see that some are open hats, some are closed. A closed hat is the sound made when the two hi hat cymbals are kept 'closed' together and the top hat is hit with the drum stick. An 'open hat' is the sound made from hitting the top hat when the two hi hats are separated, often giving a 'sizzle' sound as they rattle against each other.

Tap on pad **[A03]** to set it as the target pad and double tap the 'closed hat' sample **'Hat-DKV closed 026'**.

Now tap on pad **[A04]** so it turns green and then double tap the open hat sample, **'HiHat-DKV open 009'** (or single tap to select and then hit LOAD).

Hit the **SAMPLE ASSIGN** button to see an overview of our kit so far:



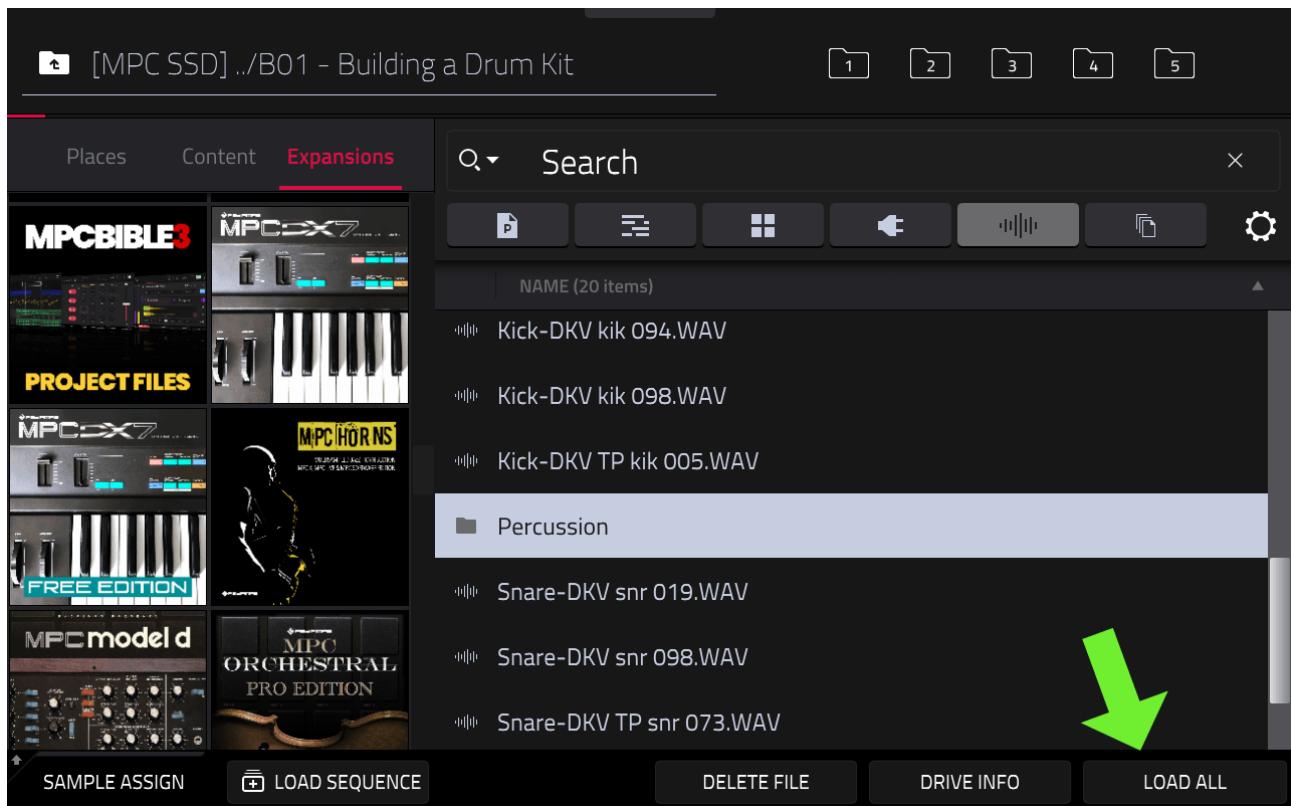
At this point, all the pads with samples assigned to them are now yellow apart from the currently 'selected' pad which is green. And all the samples we've loaded far, regardless of whether they are assigned to a pad nor not, are showing in the **SAMPLE POOL** on the left side of the screen.

LOADING MULTIPLE SOUNDS TO THE POOL

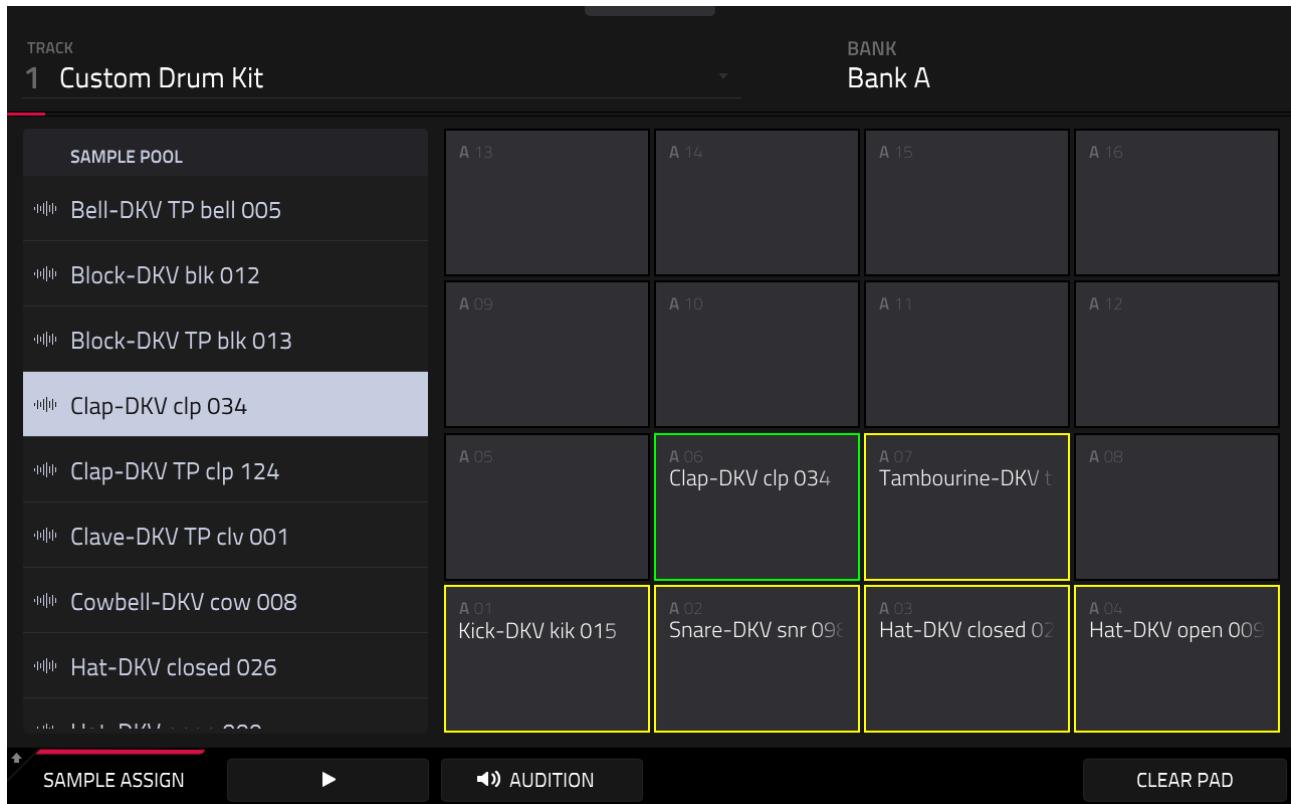
Now let's load some percussion. Back in the **BROWSE** screen, cancel the current 'Hat' filter tapping on the small 'x' at the end of the search box.

Locate the '**Percussion**' folder and single tap to select it (don't double tap, we don't want to enter the folder). Now hold down [**SHIFT**] and notice that

the LOAD button changes to **LOAD ALL**. Press this to load the entire contents of the 'Percussion' folder into the sample pool (14 samples in total, as indicated by the message on screen):



Go to **SAMPLE ASSIGN** and drag **Tambourine-DKV tmb 002** sample to pad **[A07]**. And if you don't want to drag the samples, tap on pad **[A06]** so it turns green and just double tap '**Clap-DKV cap 034**' – this will assign it to the currently green pad **[A06]**:



Give your kit a little play by bashing the pads. Not happy with any of the sounds? It's easy to replace which sound is assigned to a pad. For example, let's replace the tambourine sample on pad [A07] - simply drag the sample **Shaker-DKV shk 008** to pad [A07]; this will instantly replace the tambourine with the shaker (or tap pad [A07] so it becomes green and double tap the shaker).

The tambourine is still there in the sample pool, removing a sample from a track doesn't delete the sample from memory, it just 'un-assigns' it from the pad.

You can also load and assign a sample without using the touchscreen. Tap on pad [A05] to make it the destination pad and turn your (DATA WHEEL) until **Block-DKV blk 012** is selected. To load it to [A05], either press down on

the (DATA WHEEL) so it 'clicks', or on the MPC X (where the data wheel doesn't click!) press the [ENTER] button in the centre of the cursor buttons.

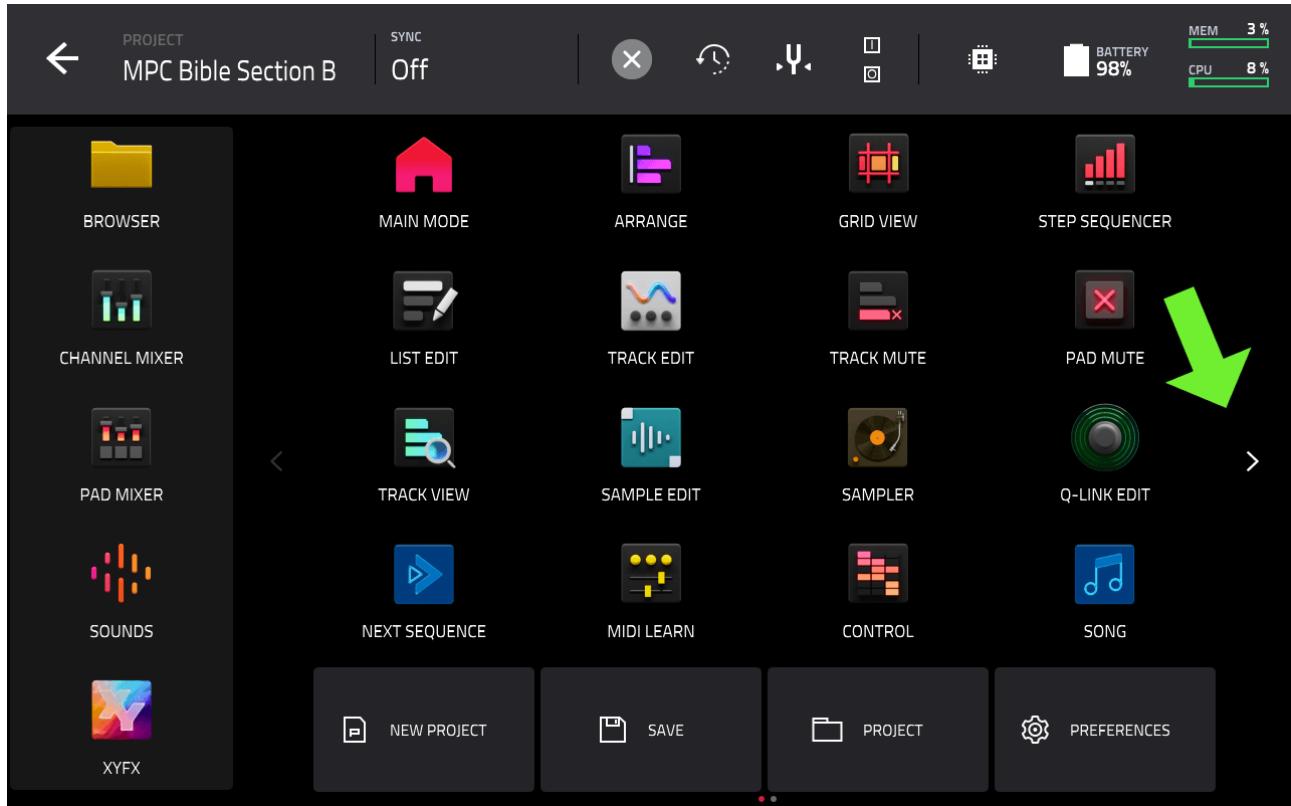


Hit **SAMPLE ASSIGN** to go back to the main BROWSER screen, select pad **[A08]** and use the (DATA WHEEL) to select **Cymbal-DKV crs 092**. Use any of the methods I've described to load this sample to **[A08]**, such as **LOAD**, double tap, or (DATA WHEEL) click/[ENTER].

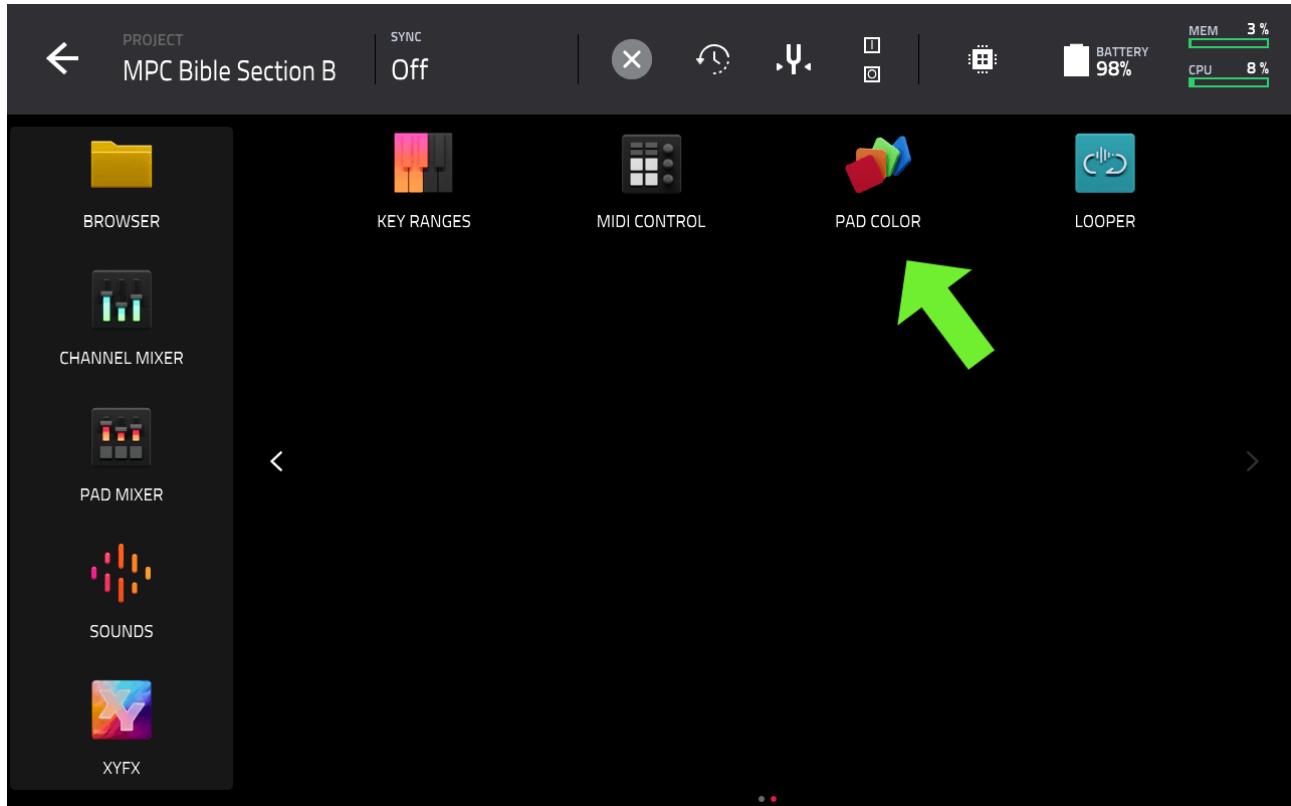
SETTING THE PAD COLOURS

Go to **[MAIN]** and have a play with our kit; notice how the pads with a sample assigned are a 'dimly lit' blue, but when you hit them they get brighter. In fact the brightness is linked to the velocity at which you hit the pad.

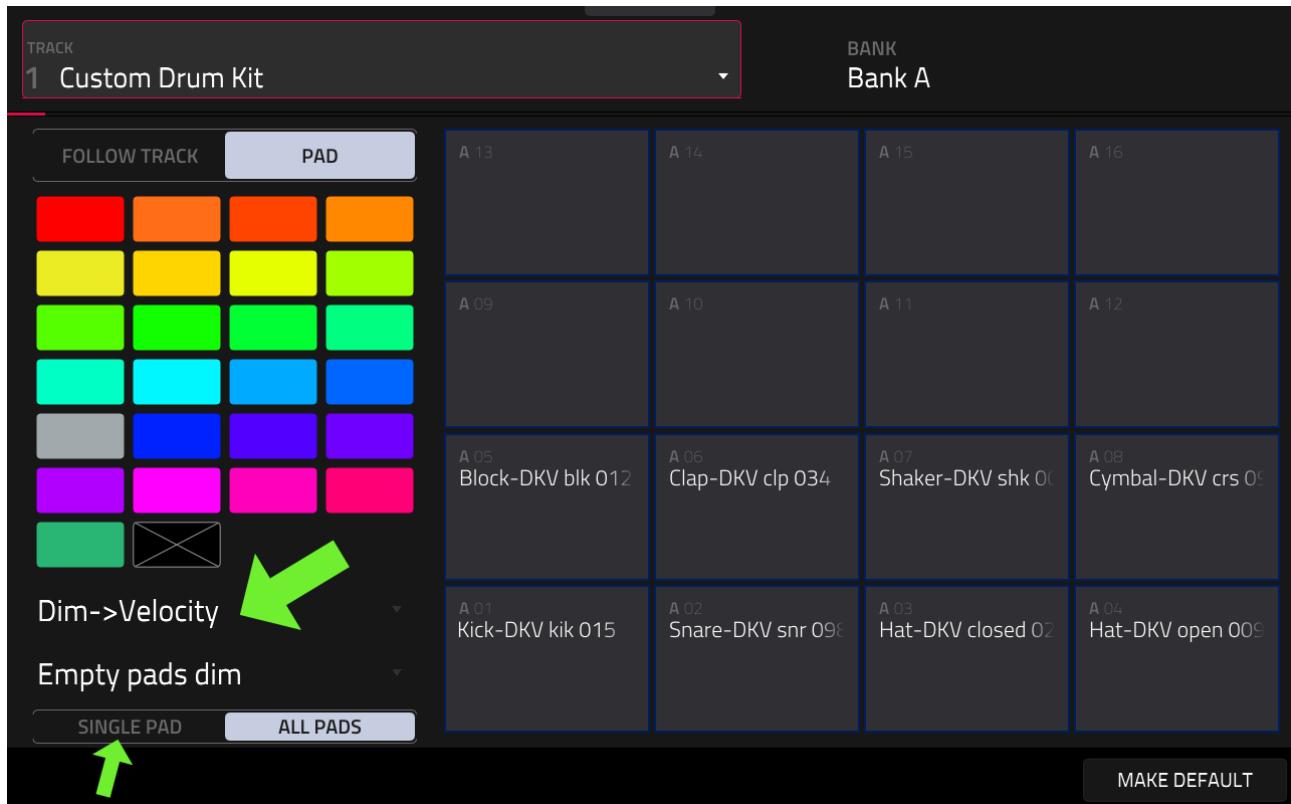
You may have previously noticed that the ready-made kit we used in Section A had unique colours on each active pad which helped to visually identify the type of sound assigned to it, so let's look at how we can configure this. Go to **[MENU]** and on the right hand side of the screen hit the right arrow icon:



This reveals the second page of menu shortcuts. Hit the **PAD COLOR** icon:

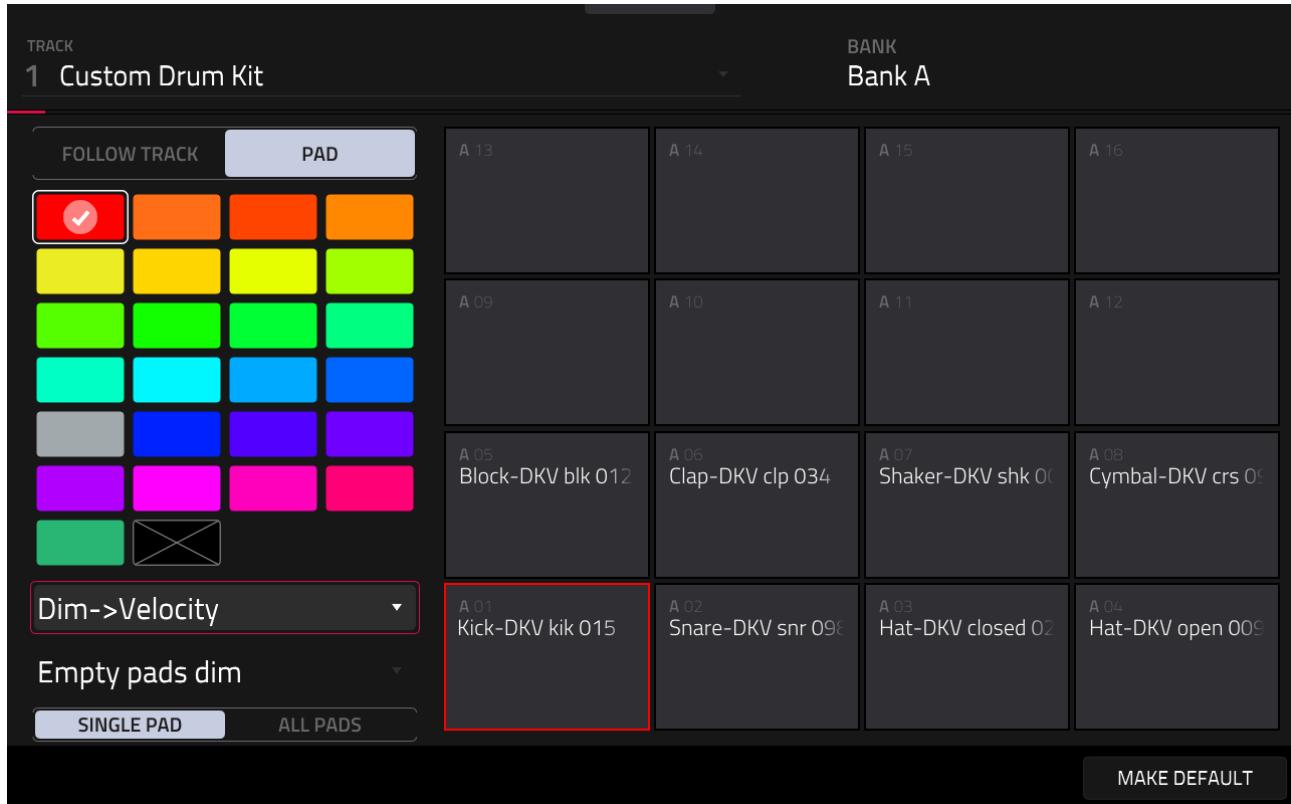


Thos reveals the **PAD COLOR** screen:

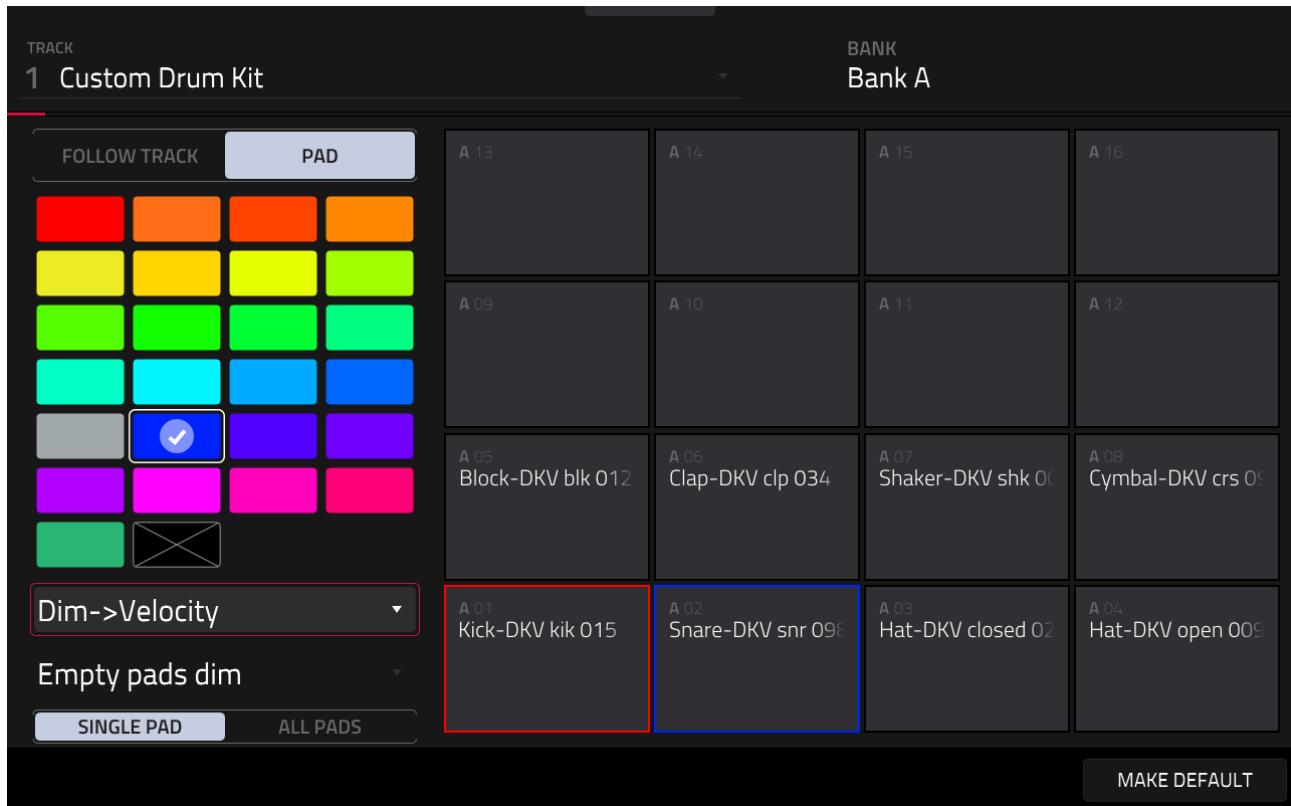


By default, all pads have the same settings, so first, tap on **SINGLE PAD** – we can now configure the colours for each pad individually.

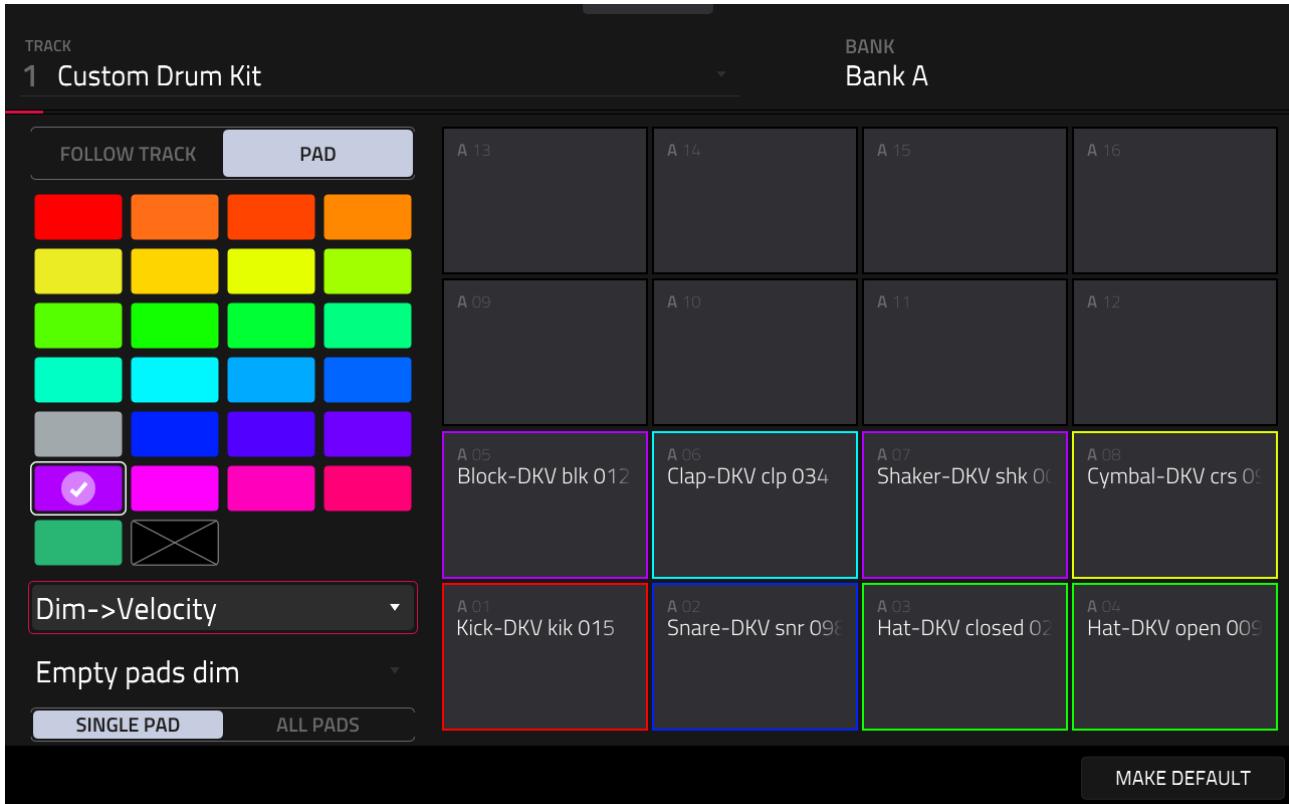
Tap on the red swatch at the top of the screen and then tap on pad [A01]:



Now tap on a blue swatch and hit pad [A02] to set our snare as a blue pad:



And so on for the rest of pads – there's no rules here, you can choose any colour scheme you like. For my commercial drum kits I always set kicks red, snares blue, hats green, cymbals (crash, ride etc) yellow and claps light blue, with various shades of purple for percussion, so that's what I'm going for here:



The default lighting option is '**Dim > Velocity**' but there's several possible options here:

- **Dim > Velocity** – the active pads are initially around 25% brightness and get brighter the harder you hit them
- **Bright > Velocity** – the active pads are initially around 50% brightness and get brighter the harder you hit them
- **Off > Velocity** – pads are not lit at all until you hit them (and get brighter with greater velocity)
- **Fixed** – the pad will be lit in a solid colour, irrespective of velocity
- **Classic Velocity** – identical to 'Off > Velocity' but the lit colour is always red across all pads.

I personally prefer either 'Fixed' or 'Bright > Velocity'. For this example, let's set to **FIXED**.

The next option dictates what happens to 'empty' pads (i.e. pads with no samples assigned to them). I generally prefer to set this to '**Empty pads off**' as this gives me a clear visual indication of which pads are currently unused in a program.

And finally you can just have your pads mimic the colour of your track (as seen in MAIN) – choose the **FOLLOW TRACK** button at the top of the screen. This uses the 'Bright > Velocity, Empty Pads Dim' settings.



*If you'd prefer all newly created DRUM programs to start with a specific pad colour configuration, set it up here on any kit and then hit the **MAKE DEFAULT** button.*

USING THE PAD MIXER

When setting up a drum kit it's important to consider the 'mix' of all the different instruments, from both a 'functional' and 'creative' perspective.

Creative mixing is about developing the 'sound' of the kit as a whole, giving it a unique character, determining how each instrument will appear in the stereo field, as well as ensuring the whole kit 'sits' well within the entire song.

'Functional mixing', at this stage at least, is simply about ensuring that the kit is 'behaving' – there's no clipping, the output volume is leaving you

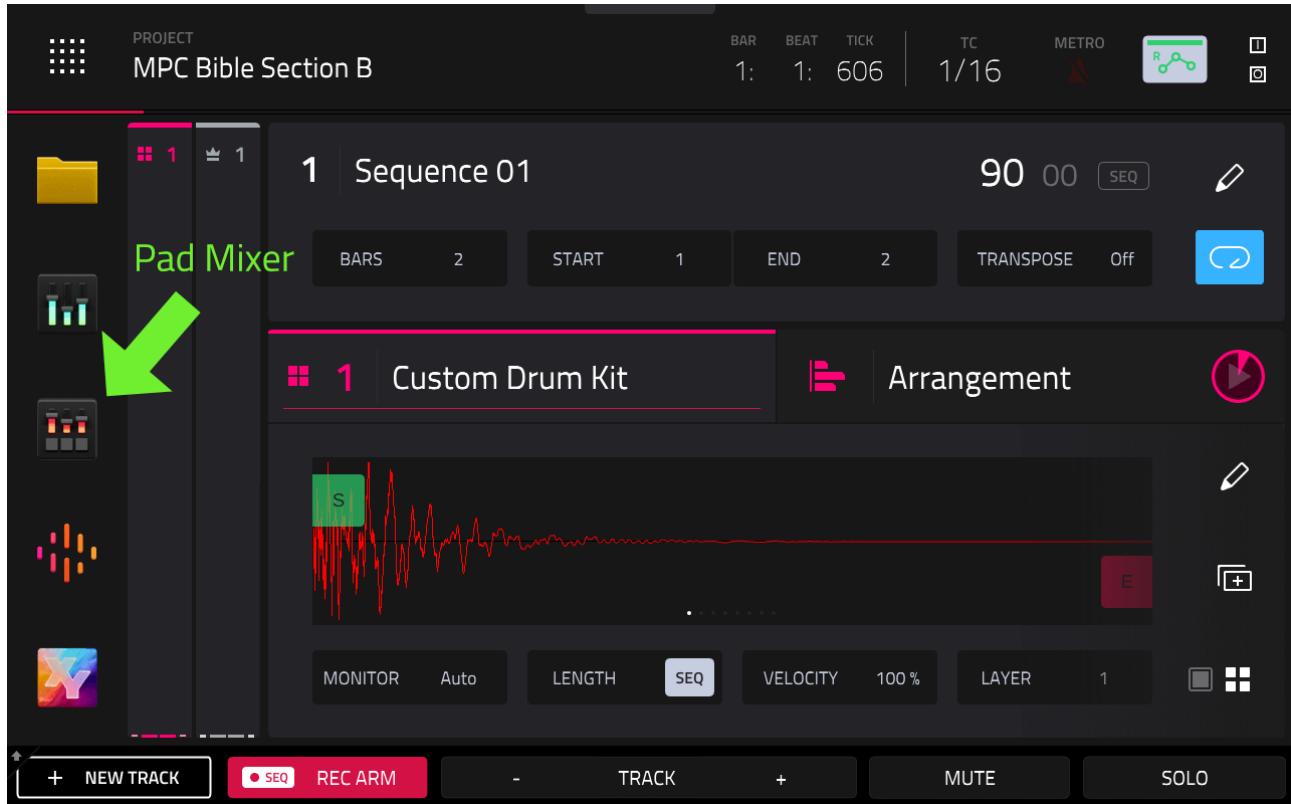
some headroom to allow for subsequent increases in level that inevitably occur as a result of drum layering, adding FX, applying filters and so on.

It's worth noting that the audio output chain within an MPC contains many elements (some of which we haven't looked at yet), but the pads (and the samples assigned to them) represent the very first stage in the chain. Hence it's important that we ensure the output level of this first stage is configured correctly otherwise it can lead to unnecessary complications later in the mixing process.



Mixing is an ongoing process, something you should expect to be continually tweaking as the song develops.

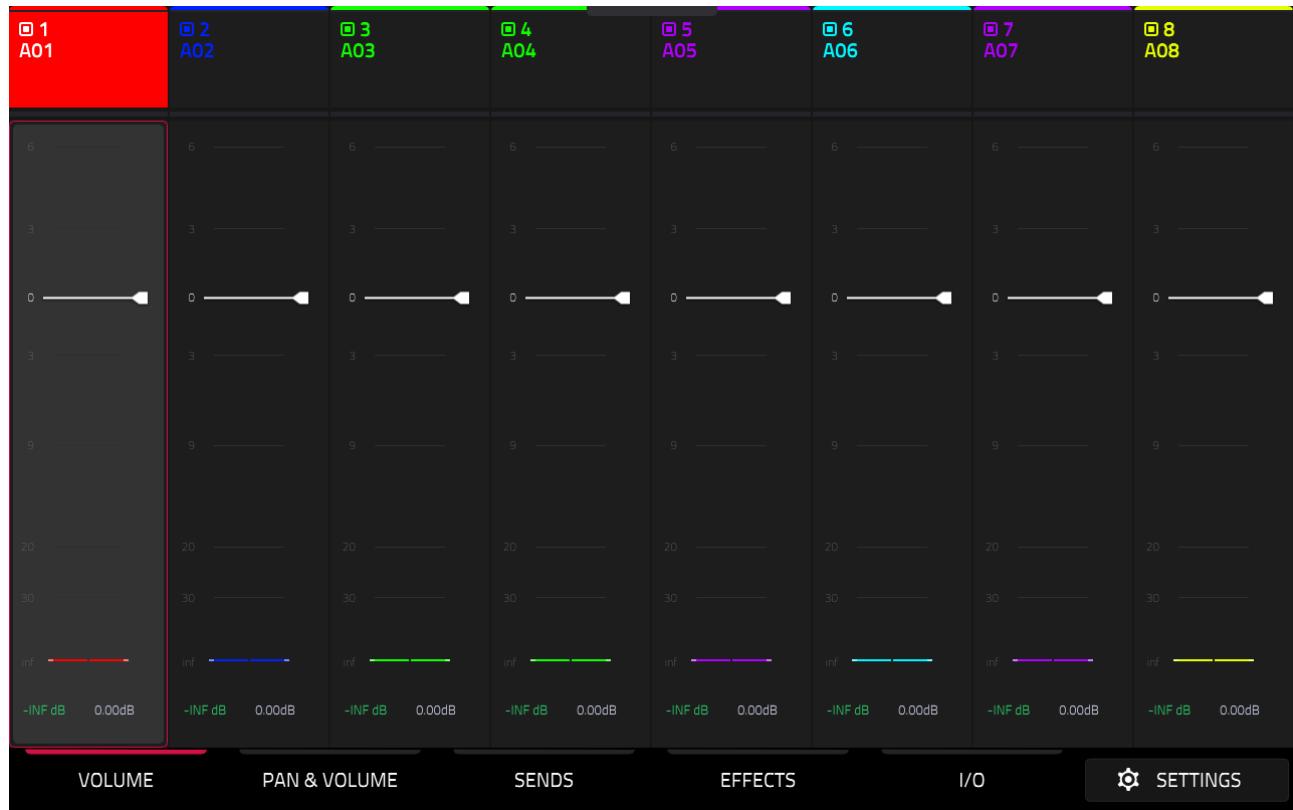
A common way to perform a kit of the pads within a kit is to use the PAD MIXER, and you can go directly from [MAIN] using the dedicated **PAD MIXER** icon:



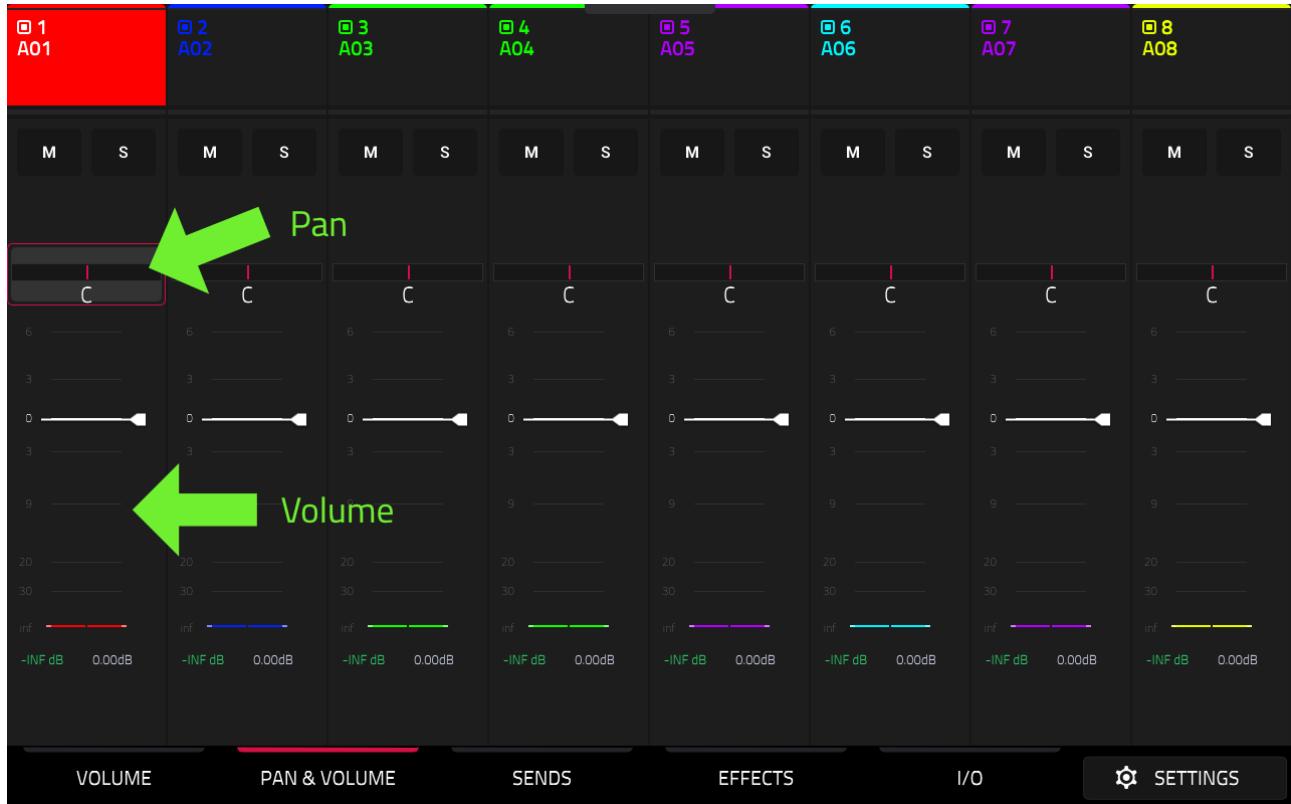
You may also have a physical **{PAD MIX}** button on your MPC model (as a secondary option for the **[MIX]** button).

The default screen in the PAD MIXER shows the volume levels for the first 8 pads in your kit:

B01: BUILDING A DRUM KIT



Hit the **PAN & VOLUME** button at the bottom of the screen.

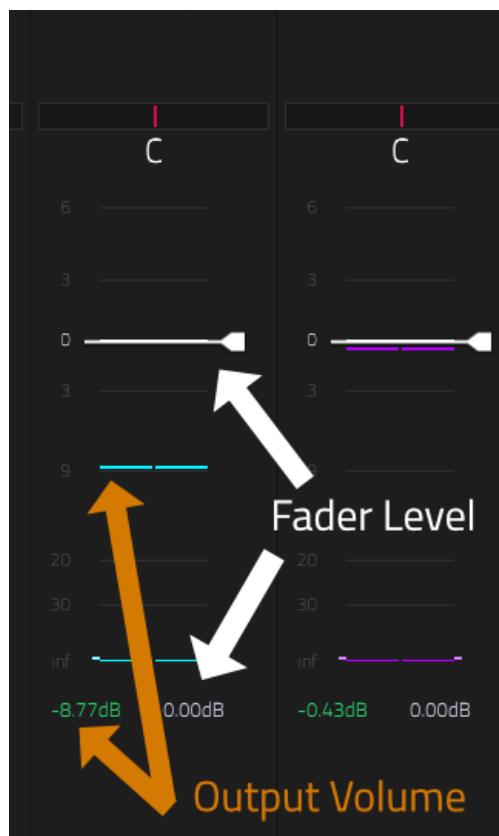


I feel this screen is more useful as contains volume, panning and mute/solo options in one screen, so generally speaking this would be my 'go-to' for the Pad Mixer.

The first thing I like to do is ensure that the loudest element of a kit is outputting at an acceptable level, leaving plenty of headroom to work with. Turn on [**FULL LEVEL**] and hit each of the eight pads. As you do you should see two coloured bars rise upwards and then fall again; this is a representation of the output volume of the pad:

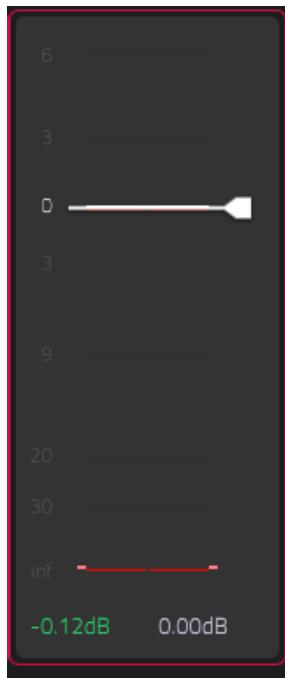
Once the levels have dropped, you should see that each pad leaves a coloured line; this indicates the 'peak' output level of this pad – a cursory look will tell you that the kick pad is outputting at the highest level.

For example, take a look at the bottom of the [A06] level meter:



The left value (in green) is the actual output volume level of this pad (-8.77dB), while the right hand value (white) shows the current fader level position setting (0.00dB), displaying how much reduction or gain has been applied to the original level (by default, nothing, i.e. 0dB change).

Take a look at the kick on [A01]:



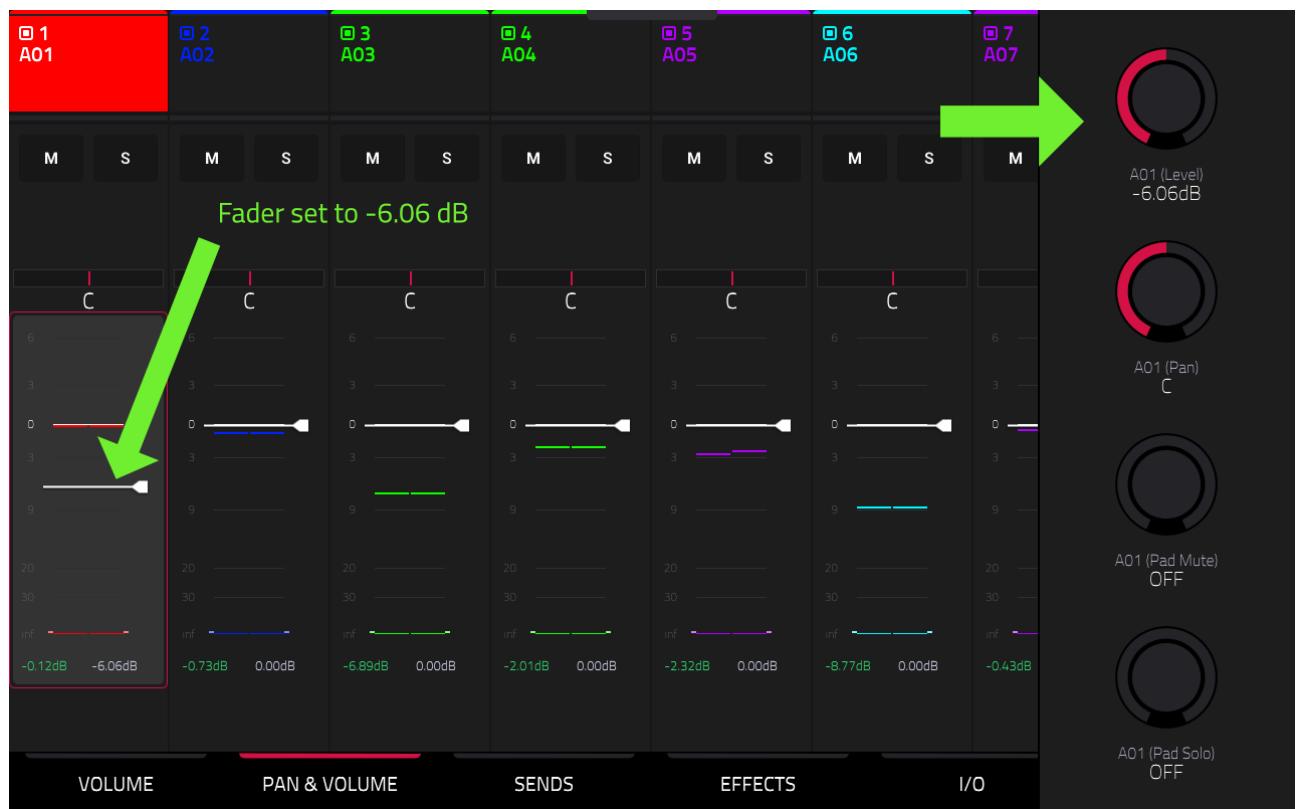
As you can see, with an output level of -0.12dB, the kick is close to '**clipping**'. This is when the output level of the pad exceeds 0dB (often referred to as 'going into the red'); this can sometimes lead to unpleasant digital distortion, so should be avoided (although in reality you have to push MPC channels *really* hard before that happens).

Let's take the kick level down to give us some headroom to work with. **Headroom** is simply the difference between the loudest element of your mix and the maximum level before distortion can occur (e.g. 0dB).

At this stage I like to leave around 6dB headroom for the loudest element of my kit – it doesn't have to be an exact measurement, it's really just about ensuring that this first step in the output chain, the 'pads', comfortably avoids clipping, and regardless, we'll be continually tweaking the mix as we go along.

With the [A01] level meter, selected, turn your (DATA WHEEL) anti-clockwise to reduce the output of this pad by approximately **-6dB**.

Alternatively you can use the Q-LINK dials. Tap on the top Q-Link dial, (Q-LINK 13) and you should see the **Q-LINK Status window** appear:



Now turn (Q-LINK 13) to adjust the level for pad [A01]. Hold down [**SHIFT**] while you turn the Q-LINK to change the level in smaller increments (this also works when turning the data wheel).

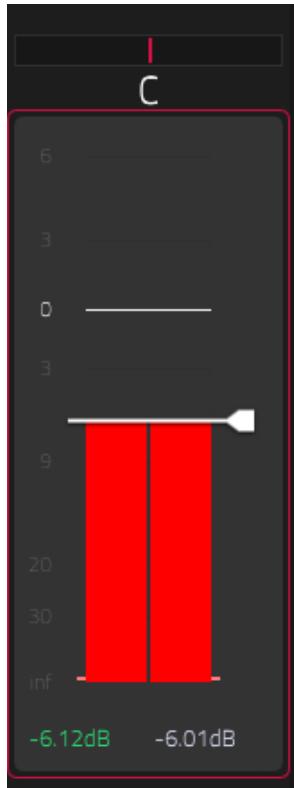


Check out the workshop at the end of this chapter for more information on the Q-LINKS.

Hit pad [A01] again and you should see (and hear) that the output level of the pad is much lower. However the 'peak' value at the bottom of the meter is still showing -0.12dB.



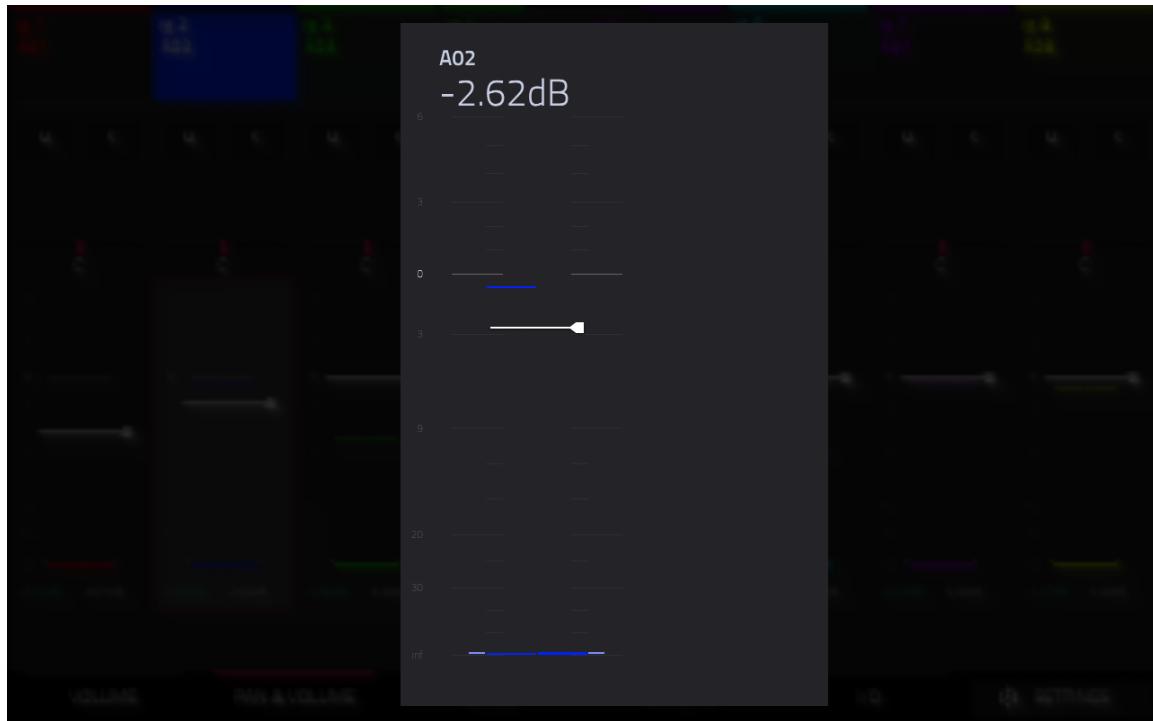
This is because the meter will always show the highest peak achieved in the current session. To reset this after making adjustments, simply tap at the bottom of the meter and it will be fully reset to -INF dB. Now hit pad [A01] again and the new peak will be registered (-6.12dB).



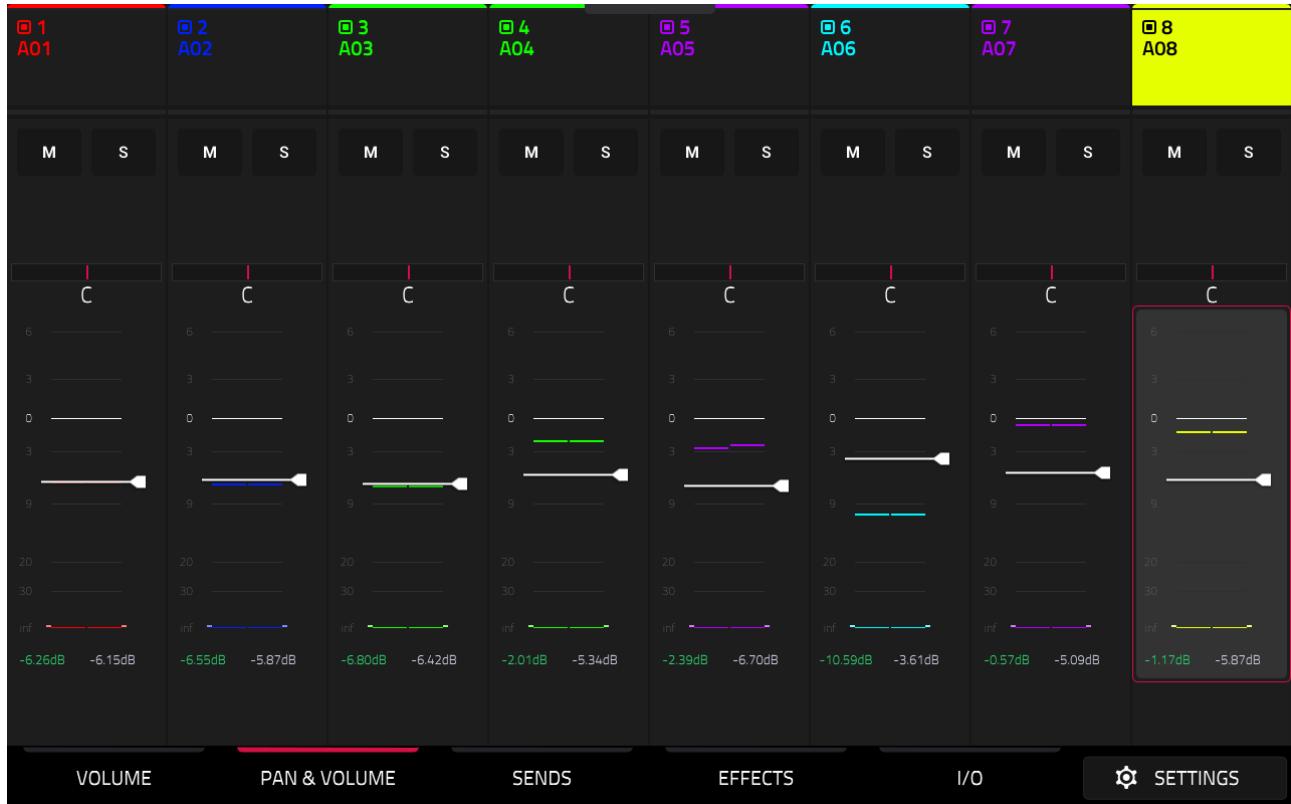
With the highest output pad set to approximately -6dB output, we can now focus on creating an initial 'mix' of the entire kit. This is where we adjust the output volumes of the remaining pads to create a nice balance. This does not need to be perfect, it's just a quick tweak to avoid any element dominating the mix, or having elements overly quiet.

Go back and forth listening to pad [A01] and the snare on pad [A02] – the snare is clearly too loud now, so with the [A02] level meter selected, reduce the pad to around **-2.6dB**. If you prefer using the Q-LINKS, (Q-LINK 13) will automatically switch to controlling the volume for the currently selected pad.

If you prefer you can also use your finger on the touchscreen to drag the level down. Or double tap to bring up the enlarged view:



Continue for the remaining pads in the kit. Just use your ears and adjust the level until you achieve a nice kick/snare balance.

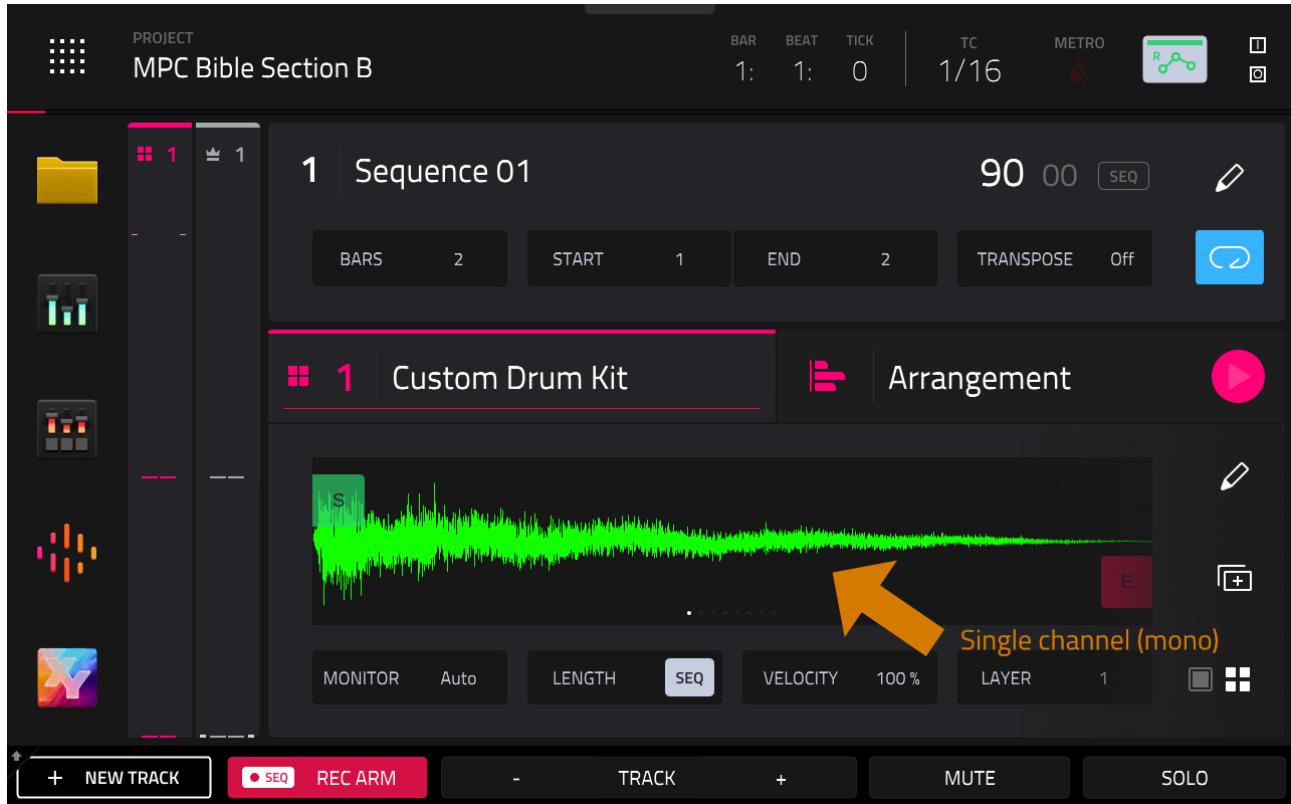


Again, don't get too hung up on the details at this stage, it just needs to be a quick tweak just to get a reasonable sounding balance that we can work with. None of this is 'mission critical' at this stage, but you'll definitely want to attend to any pad that is excessively too loud or too quiet.

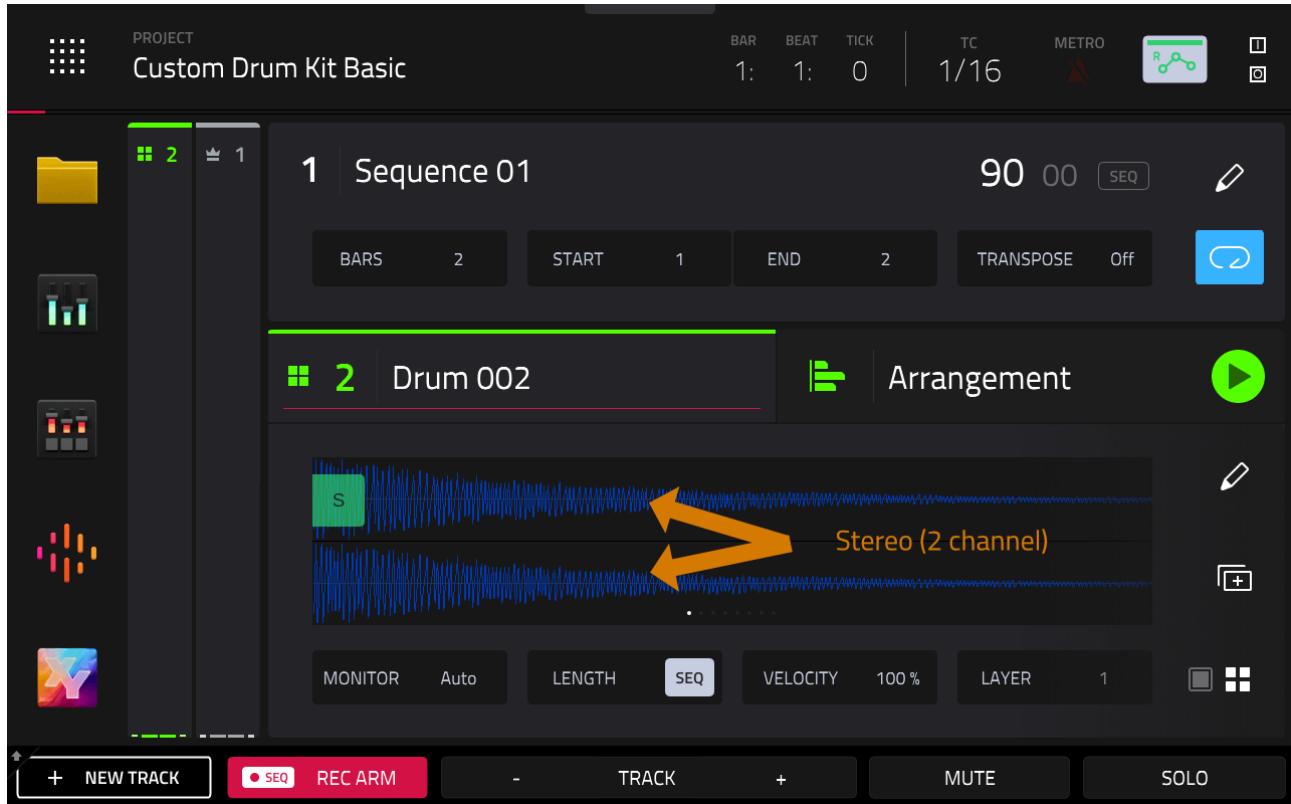
PANNING

All of the samples in this kit are in 'mono', which means each sample consists of a single channel of audio as opposed to stereo samples which contain a separate left and right channel.

How do we know this? Quickly jump back to [MAIN] and hit some of the pads so you can view the sample waveforms in the track section:



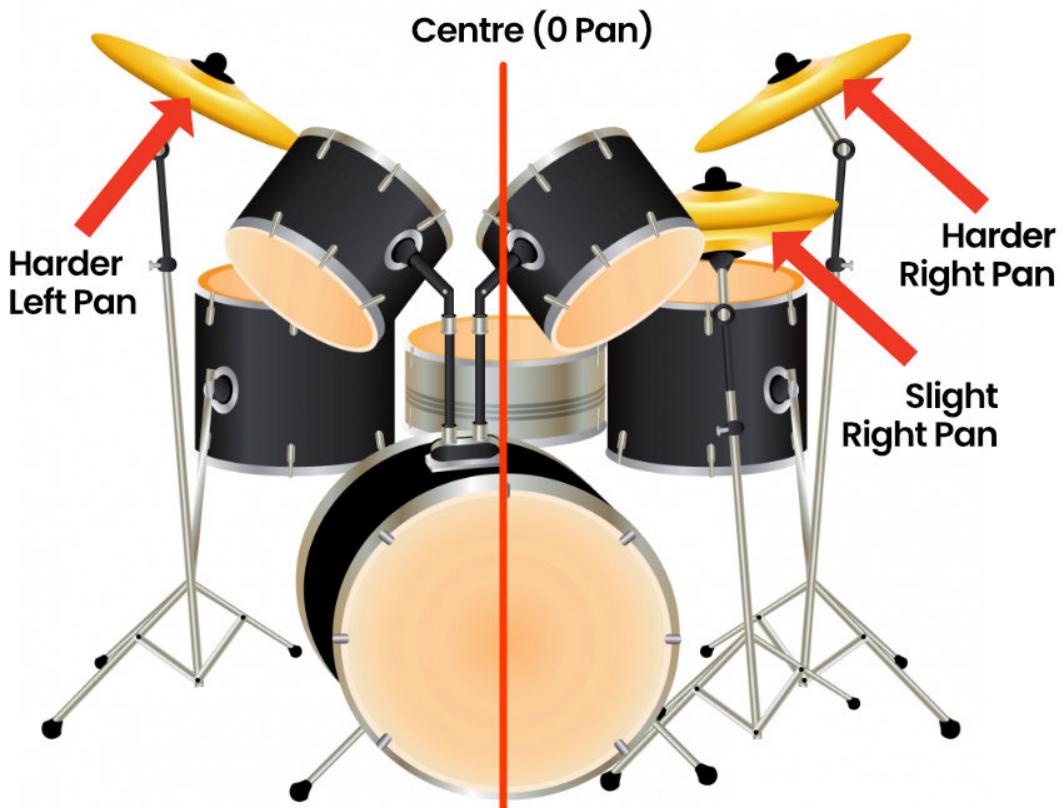
A mono sample only contains a single waveform, while a stereo sample will display two waveforms:



When we play a mono sound it can be heard at the same volume through both left and right speakers. This makes the sample sound like it is placed centrally in front of you.

Panning can be used to place a mono sound somewhere else in the 'stereo field'. For example if we pan our pad all the way to the right, the sample assigned to this pad will only be heard through the right hand speaker. But if we pan it only *slightly* to the right it will be heard through both speakers; however, due to the right hand panning it will sound slightly louder in the right hand speaker. This will give us the impression that the sound itself is placed slightly to the right of us.

If you look at a real drum kit, each instrument is going to sit in a slightly different part of the stereo field:



Kick and snare tend to be placed centrally, but other elements sit in a different part of the stereo field, with hats often positioned slightly to the left or right, crash and ride cymbals placed much further to each side. So someone standing in front of the above kit would hear the hi hats 'louder' in their right ear, simply because those hats are positioned closer to that right ear.

With mono samples we can mimic this physical stereo positioning by 'panning' each pad at varying degrees from the default 'central' panned position.



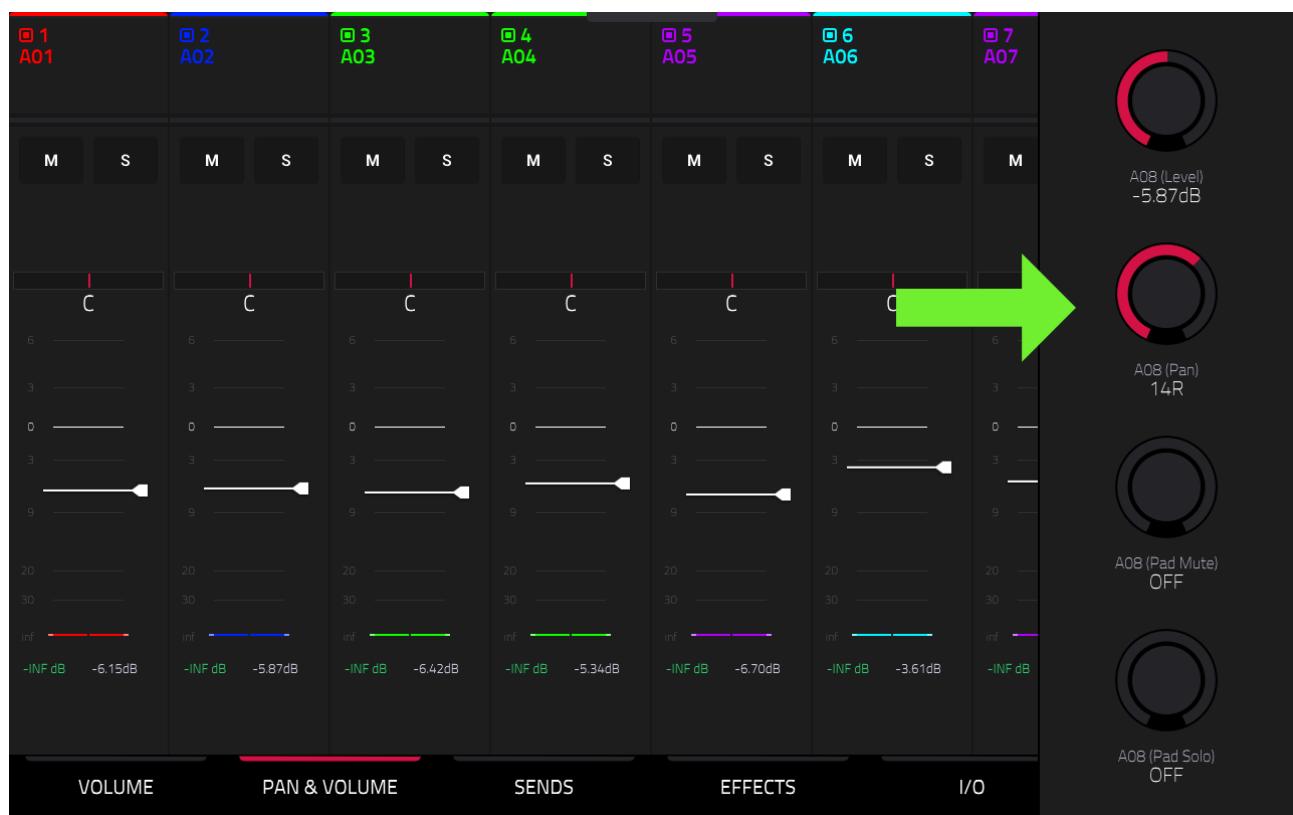
When panning a sampled drum kit there are no strict rules, ultimately go with what sounds good, however in modern electronic music the powerful kick and the snare do typically sound better placed centrally. Also remember that you can position instruments either from the perspective of the listener, or from the perspective of the drummer!

Head back to the **PAD MIXER > PAN & VOLUME** screen and select pad **[A08]**. Let's pan this crash cymbal to the right. Tap on the box containing the '**C**' – this is the pan parameter:



By default, all pads are panned exactly to the centre ('C'), which means they have no stereo positioning at all. To pan our crash to the right, you can tap and drag the panning control to the right, or single tap and turn your (DATA WHEEL) clockwise.

Alternatively, use (Q-LINK 9), which is the second Q-LINK from the top in the first column of Q-LINKS. Set the pan to **+14** (**14R** in the Q-LINK display):



You should now hear the crash cymbal much louder in the right hand speaker; you'll notice even more if you use headphones. Now hit pad **[A07]** and pan the shaker to the left at **-9**.

Now pan the hi hats. Remember the closed and open hat pads are the same hi hat so generally speaking you would pan these the same – set them both to **-7**.

You can either do this individually using (Q-LINK 9) as before, or you can hold down **[SHIFT]** and tap on pad **[A03]** and then **[A04]** so they both become selected:



Now you can use the (DATA WHEEL) or drag the pan control on screen and both channels will be adjusted equally together. You can cancel multiple track selection by holding down **[SHIFT]** and tapping each selected pad.

Let's leave the rest of the elements as they are for the moment – in fact the kick and snare are almost always panned centrally in modern music.



After adjusting the panning, you might want to further tweak your volume levels as panning can affect how a drum sound 'sits' in the overall kit mix.

If you want to retain a copy of your version of the kit so far, go to [**MENU**] > **SAVE** > **Project** and save a copy of this project to the '**Projects**' folder on your MPC disk.

If you wish you can check out my version of this drum kit. Head over to '**BROWSER** > **Expansions** > **MPC Bible 3 Project Files** > **Chapter B01**' and with the **project** filter enabled, load the project file **B01 Custom Drum Kit Basic.xpj**.

WORKSHOP: USING Q-LINKS

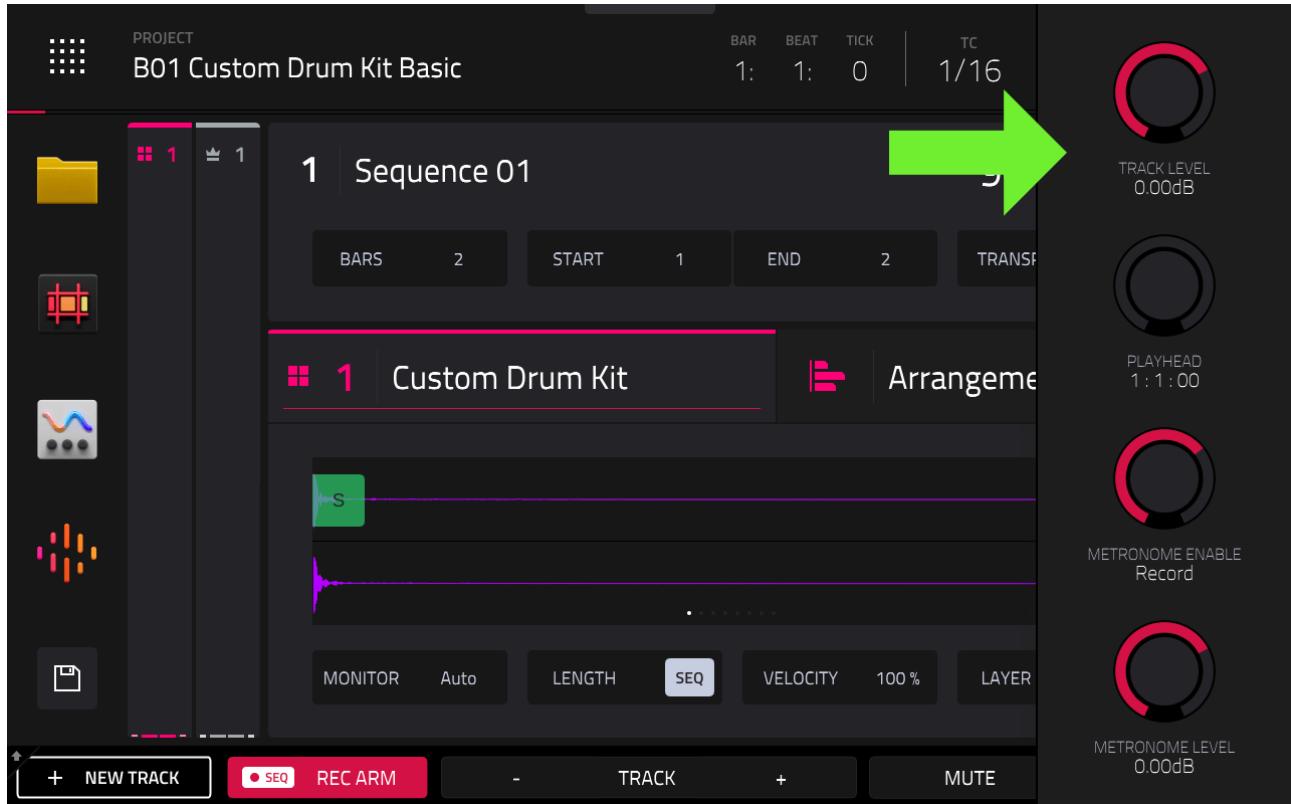
Your MPC has a number of dedicated hardware '**Q-LINK**' dials give you hands-on control of certain parameters and settings. The MPC X has 16 physical dials while all other models have just four dials. However on these MPCs you can access three additional columns of 'virtual' Q-LINKS which allow you to access the remaining twelve Q-Links at a time.



By default each screen in the MPC has its own set of pre-configured Q-LINK assignments, up to 16 in total on any one page. By default these assignments are always fixed, but we'll eventually learn how we can configure custom Q-LINKs to control pretty much any parameter we want.

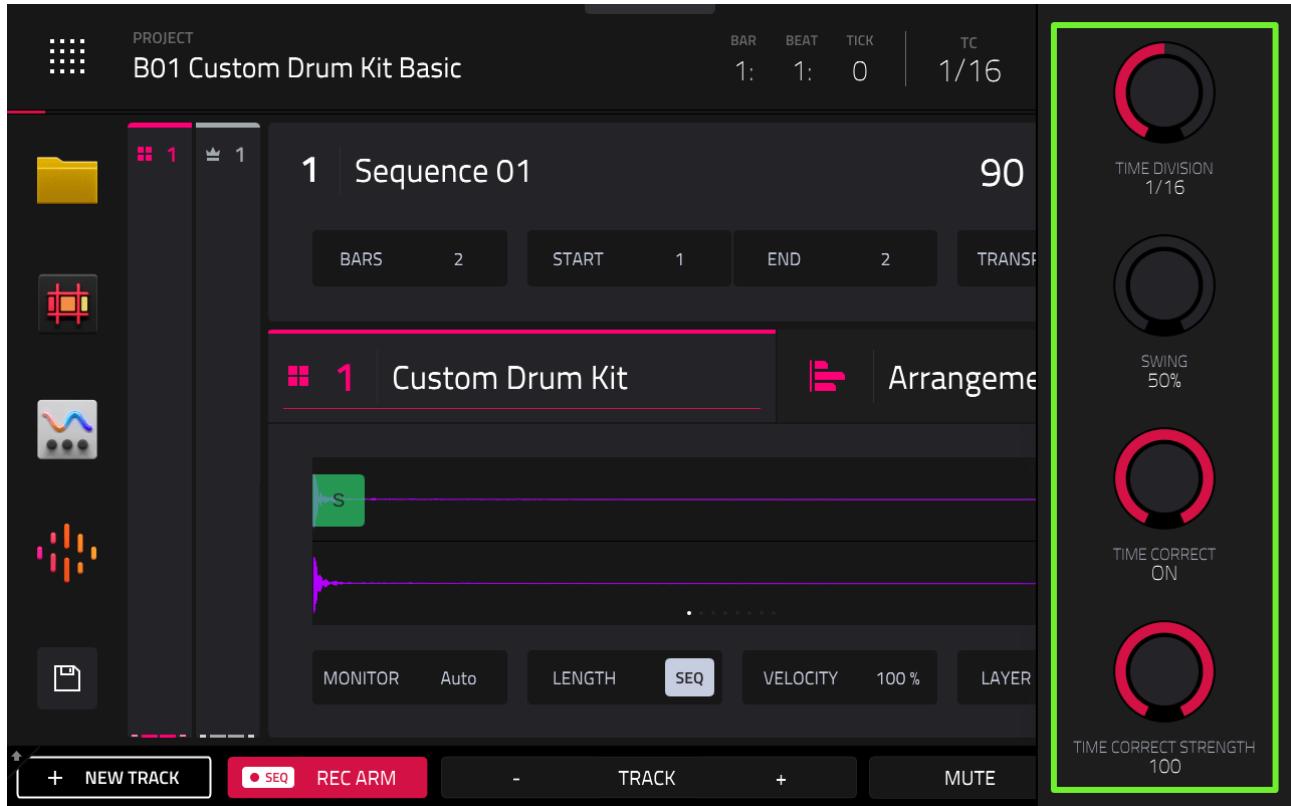
In the MPC X the current page's Q-LINK assignments are shown directly on the OLED display above each Q-LINK.

In all other models there are two ways to view the page's current Q-LINK assignments. The first way is to simply touch one of the Q-LINKS; this will display a pop-out **Q-LINK STATUS window** at the side of the screen:



This only shows the Q-LINKS in the currently selected Q-LINK column. So as you can see in the screenshot above, the first column of Q-LINKS when **[MAIN]** is selected allow you to control the **TRACK LEVEL**, **PLAYHEAD** position, **METRONOME ENABLE**, and **METRONOME VOLUME**.

Now hit the physical **[Q-LINK]** button above your Q-LINKS so the **second LED** is lit – I refer to this as **[Q-LINK BANK 2]**. This will now assign the next set of 'virtual' Q-LINKS to your 4 dials:



Now you can control **TIME DIVISION**, **SWING**, **TIME CORRECT** and **TIME CORRECT STRENGTH**.

If you hold down the [**Q-LINK**] button you'll see the **Q-LINKS** screen:



Here you can see all sixteen Q-LINK assignments for the current screen. You can also change from the default 'SCREEN' mode to more specialist Q-LNIK screens (we'll be looking at some of these later in the course).

On this page you can also easily turn off the Q-LINK STATUS window, as some people find the screen can get a little annoying at times – toter it off, just hit the **Q-LINKS STATUS** button.



*You might notice that on some screens (like MAIN), the Q-LINK dials for a 'column' are shown in a horizontal **row** on the Q-LINK screen. This is of course very confusing and I'm just not sure why Akai do this on some screen but not others.*

B02: DRUM KIT EDITING PART 1

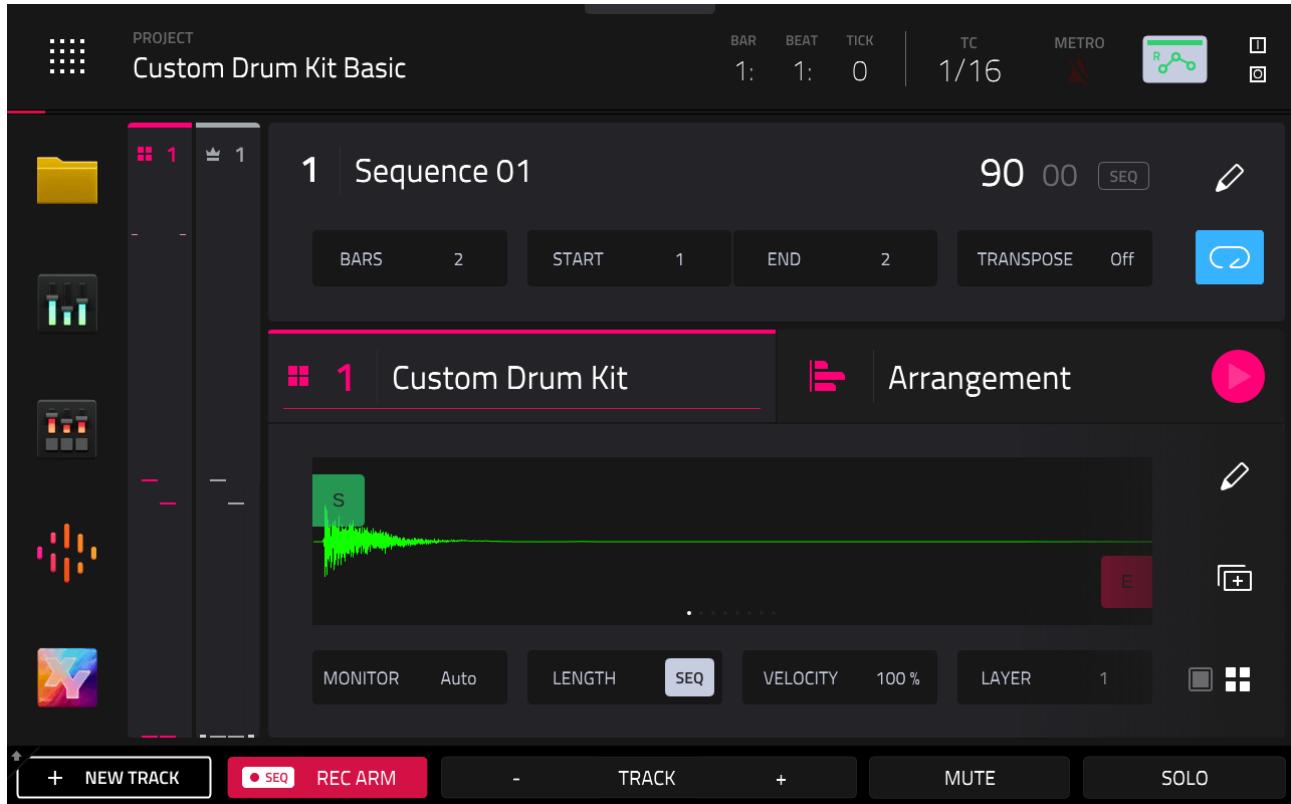
In the previous chapter we built a drum kit using some ready made samples without any real deep diving. In this chapter I want to show you how we can begin making this kit truly our own using some simple sound design techniques.

TOPICS COVERED IN THIS CHAPTER

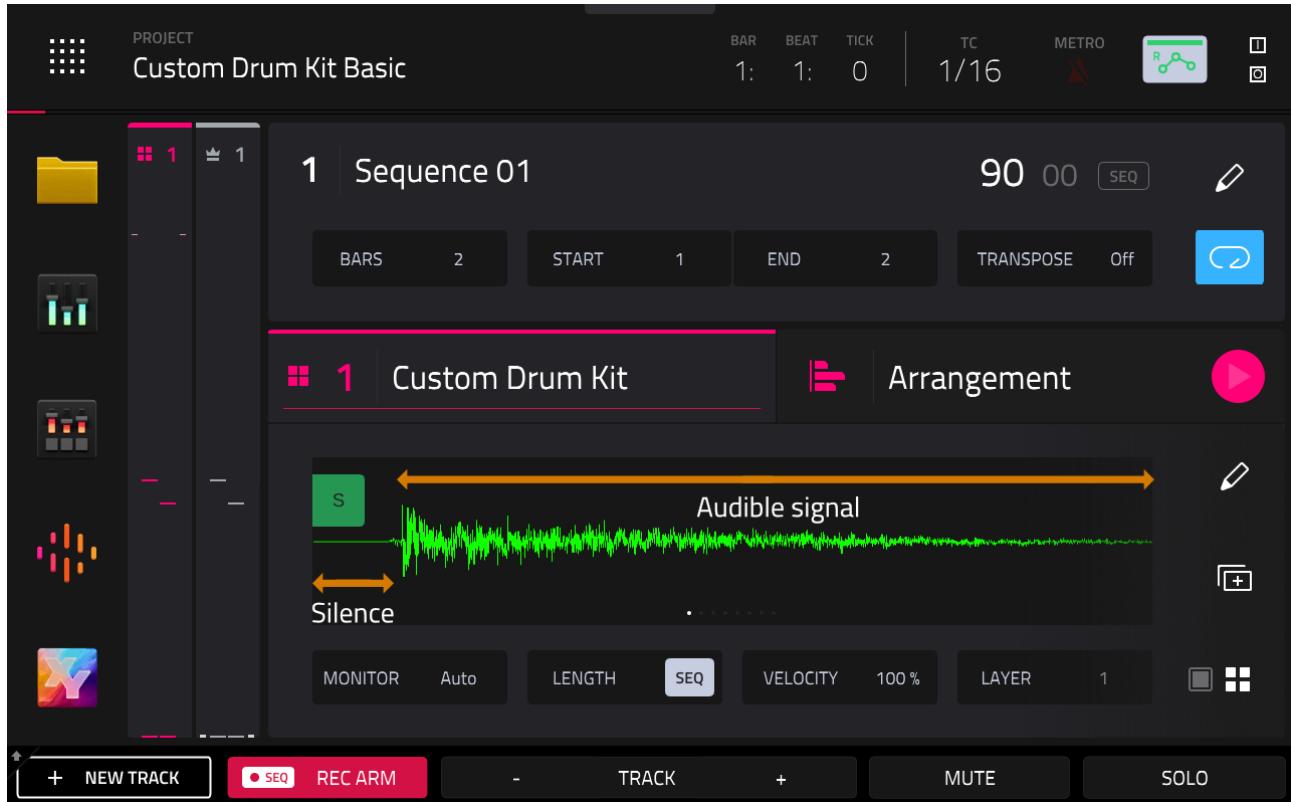
- ✓ Editing drum kits in TRACK EDIT
- ✓ Drum layering techniques
- ✓ Offsets
- ✓ Mute groups
- ✓ Amp envelope

EDITING SAMPLE LAYERS IN MAIN

If you are starting with a fresh boot up, you can load the **B02 Initial.xpj** project from the **chapter B02** folder. Go to [**MAIN**] and hit pad [**A03**] to select our closed hat pad – observe the waveform in the **Track Tab**:

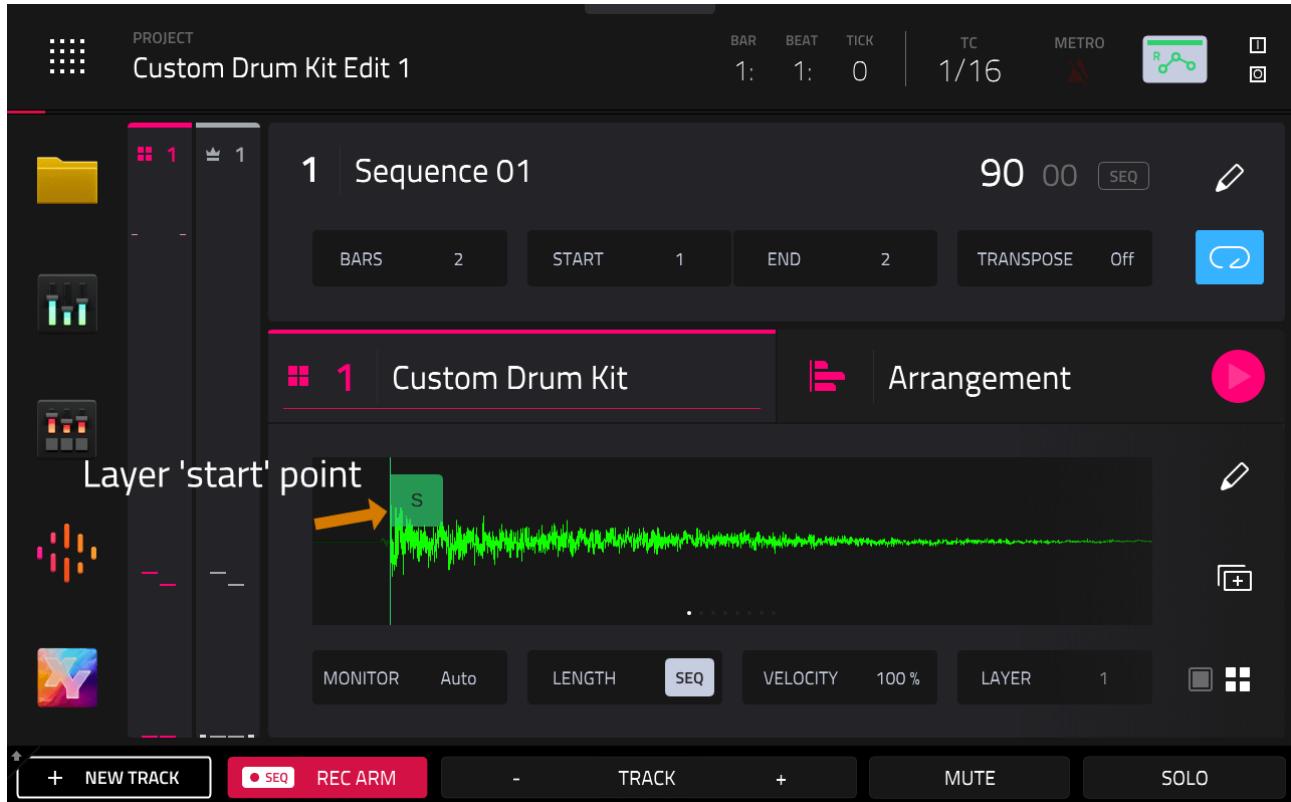


The waveform is a representation of the sample on this pad. It shows how the amplitude (or 'volume') of the audio signal changes over time. You should be able to see that there is a 'gap' at the beginning of the waveform. If you can't quite see it, 'pinch and zoom' to magnify the start of the waveform:

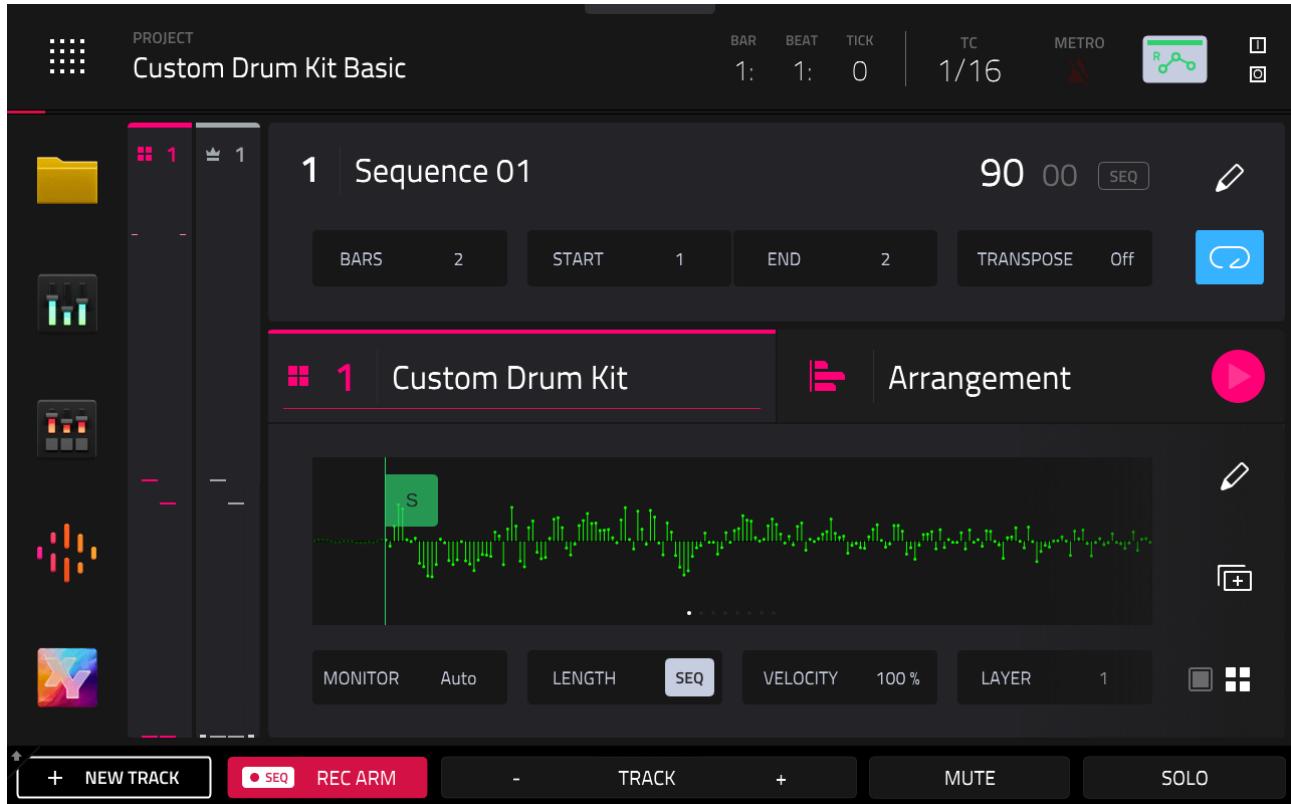


When an audio signal has no amplitude (volume), it will be silent, hence this gap represents silence. Ideally we want our pad to begin playing audio the instant it is hit, so let's edit the start of this pad so it ignores the silence and plays the sample from the start of the actual audio.

Using your index finger, press down and hold on the green 'S' square and move it to the right, stopping just before the waveform actually begins:



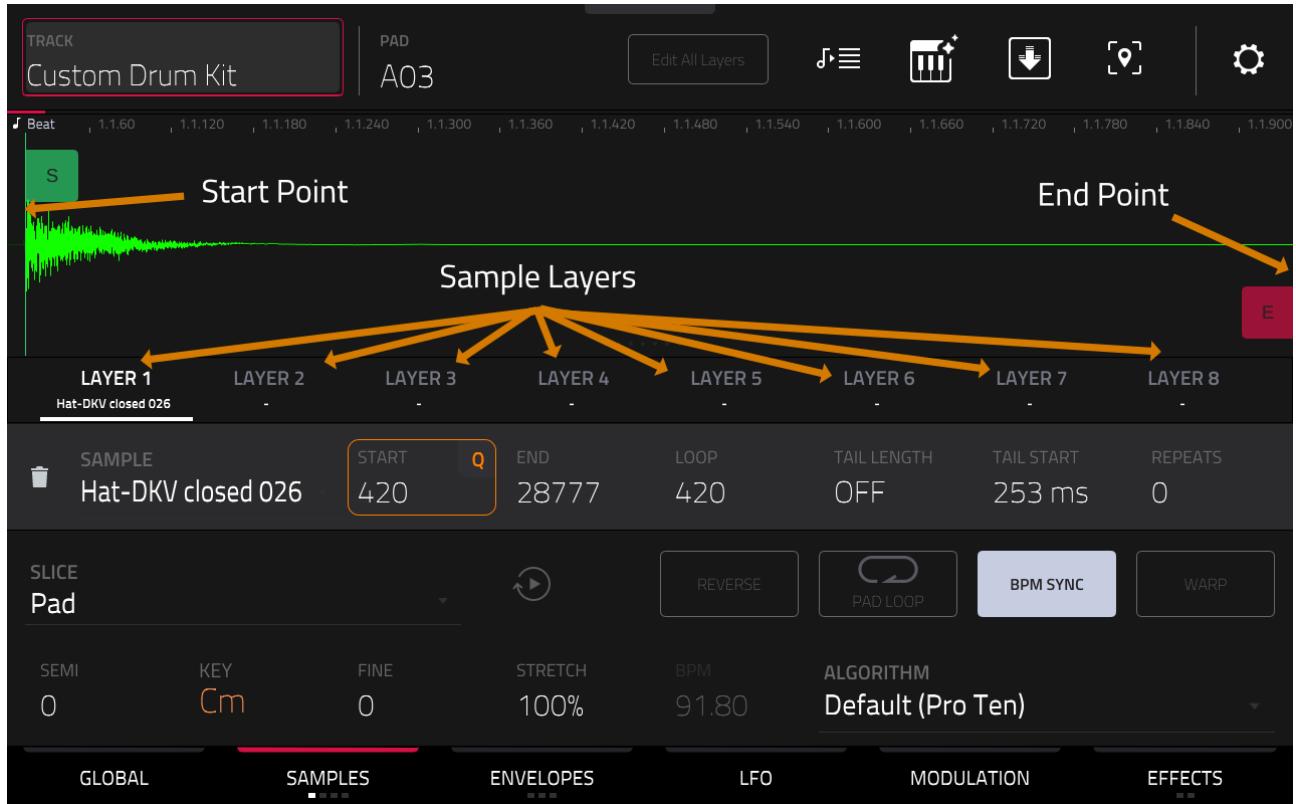
This green 'S' is known as the '**layer start**' point. To make an even more accurate start point edit, pinch and zoom even more so you can see the tiny waveform cycles:



If you need to, drag your finger to the left or right to move the waveform across the screen. Now hit pad [A03] to preview the 'tighter' sounding closed hat.

EDITING DRUM KITS IN TRACK EDIT

Editing pads in MAIN is okay for a bit of rough tweaking, but let's get more serious about editing our drum kit – it's time to meet **TRACK EDIT**. There's a few ways we can get there, but one shortcut is to just **double tap** the actual **sample waveform** in **MAIN** – this will take you directly to the **TRACK EDIT > SAMPLES** screen:



This screen might seem a little daunting as there are many different parameters on display, but we're only going to focus on a few for the moment.

At the top left you'll see the name of the current track and then the currently selected pad (**A03**). The waveform is just the enlarged version of the one that you saw previously in MAIN – as you can see, our 'start point' is still set so the pad ignores that initial portion of silence.

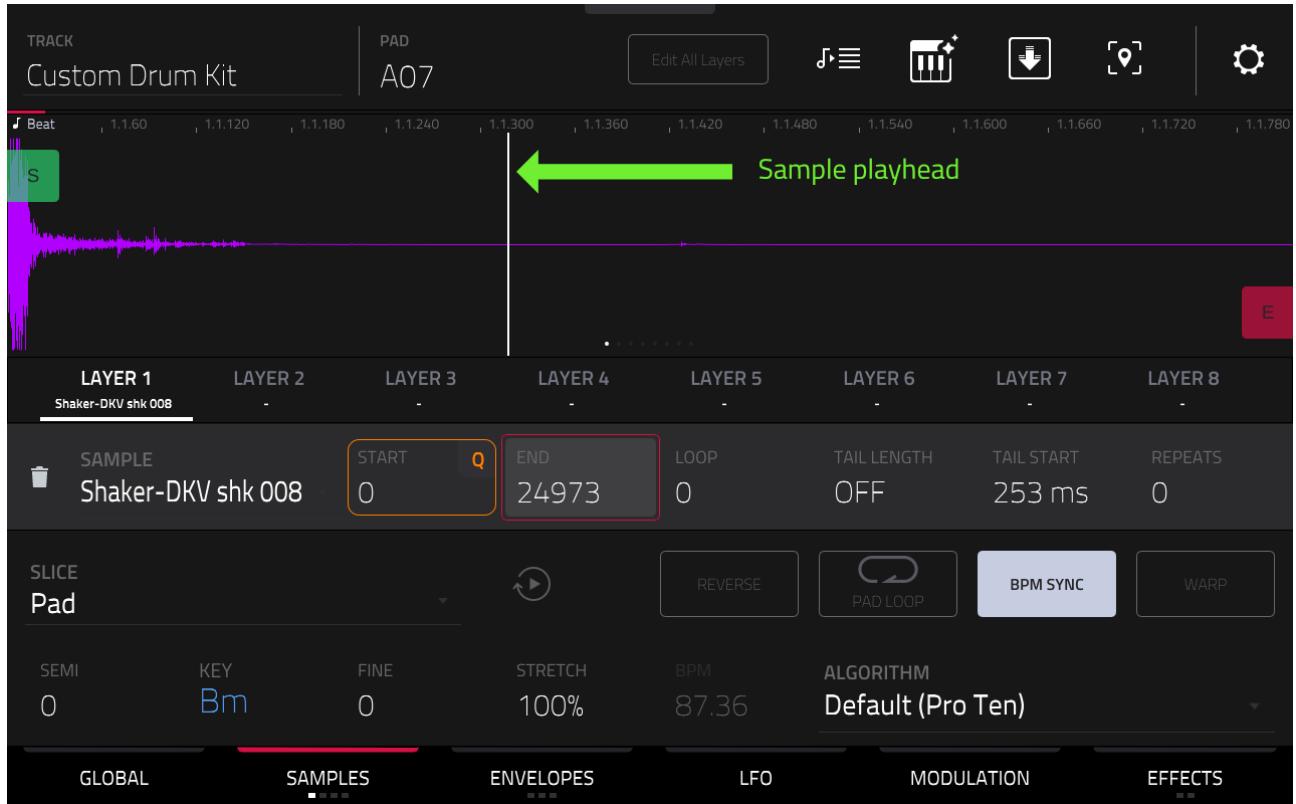
Underneath this you'll see 8 tabs that display this pad's **sample layers**. All pads in a DRUM track can contain up to 8 sample layers, and each of these layers can contain one sample. These sample layers can be used to create 'stacked' sounds as well as more advanced techniques (which we'll discover throughout the course).

Unless we specify otherwise, when we load a sample to a pad it is assigned to **LAYER 1**. As you can see, the LAYER 1 tab is currently active (white vs grey) and displays the name of the sample currently assigned to this layer (in very tiny letters!).

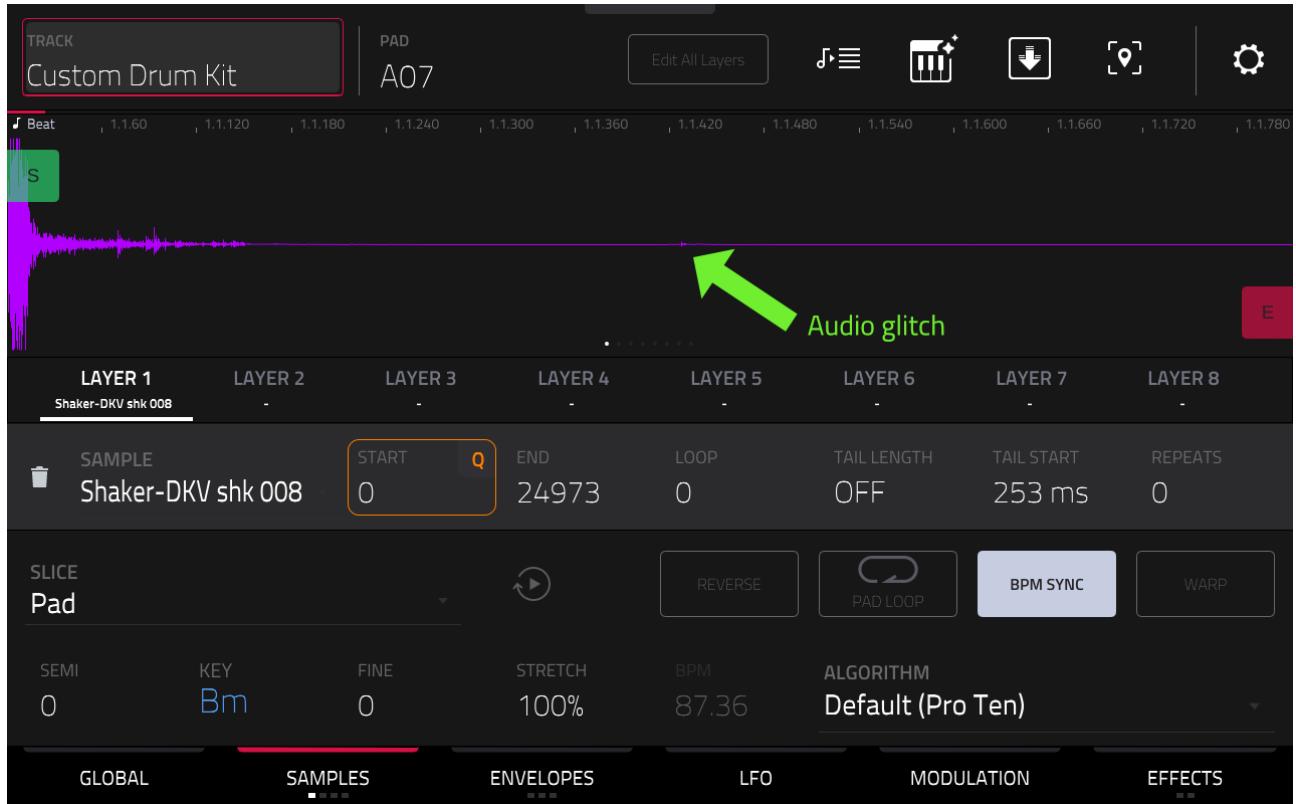
The layer's **START** and **END** points tell the pad which portion of the sample to play when the pad is hit – these edit points are measured in units called 'samples'. The start point would normally default to 0, but as we previously changed the 'start' point in MAIN it is currently set to **420**.

CHANGING LAYER EDIT POINTS

Select pad **[A07]** – we previously assigned a shaker to this pad. As the sample plays you should see the white vertical line move across the screen; this is the 'playhead' which indicates the current playback position in the waveform.

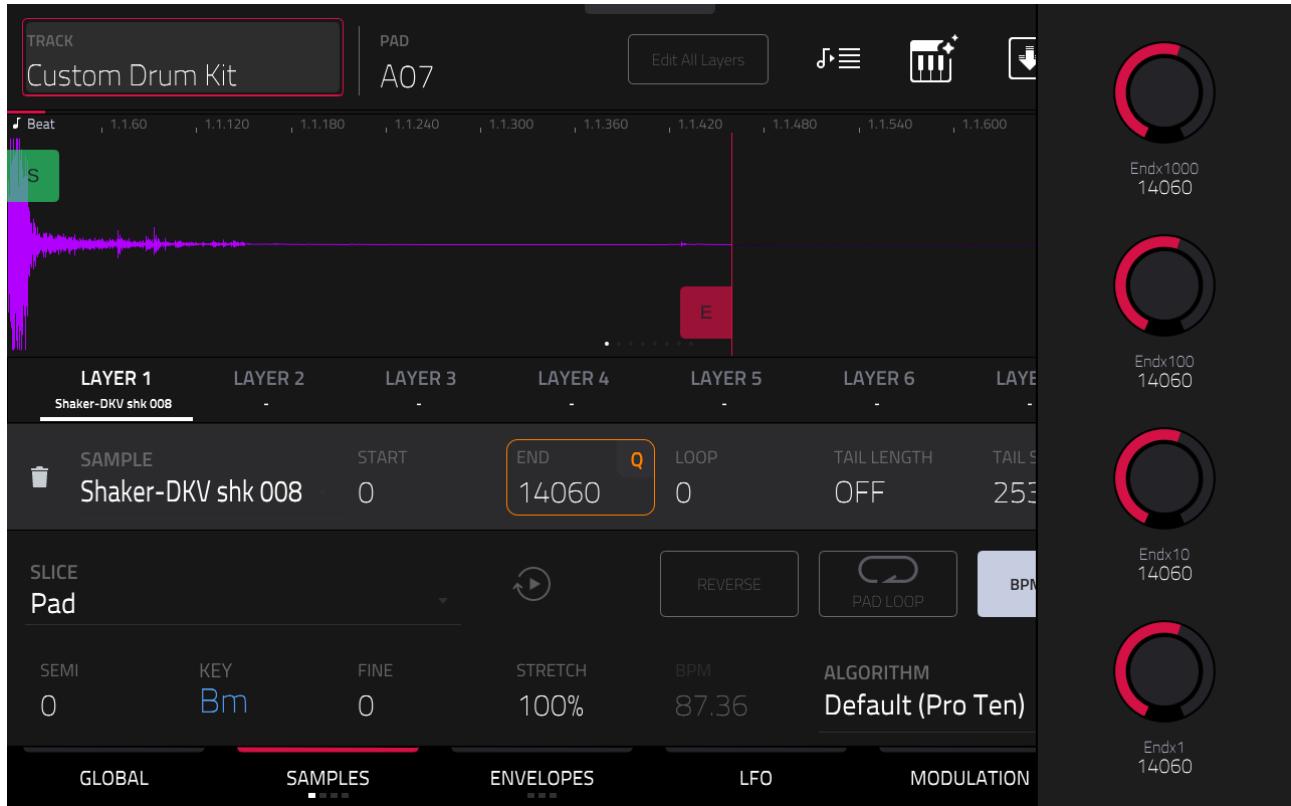


If you listen closely (headphones will help here), you can hear a 'click' that approximately halfway through the sample; you can also see it on the waveform:



We can easily edit our pad so it stops playing before it reaches this click. To do this we simply change the **END** point of this layer. This is represented by the red 'E' at the right of the waveform. To change this you can drag the 'E' with your finger until it sits just before the click.

Alternatively you can use the (Q-LINKS). To change 'END' points, first select **[Q-LINK BANK 2]**. Now the entire column of Q-LINKS will be dedicated to changing the END point in varying degrees of accuracy. Tap on any of the Q-LINKS to view the '**Q-LINK status**' window:

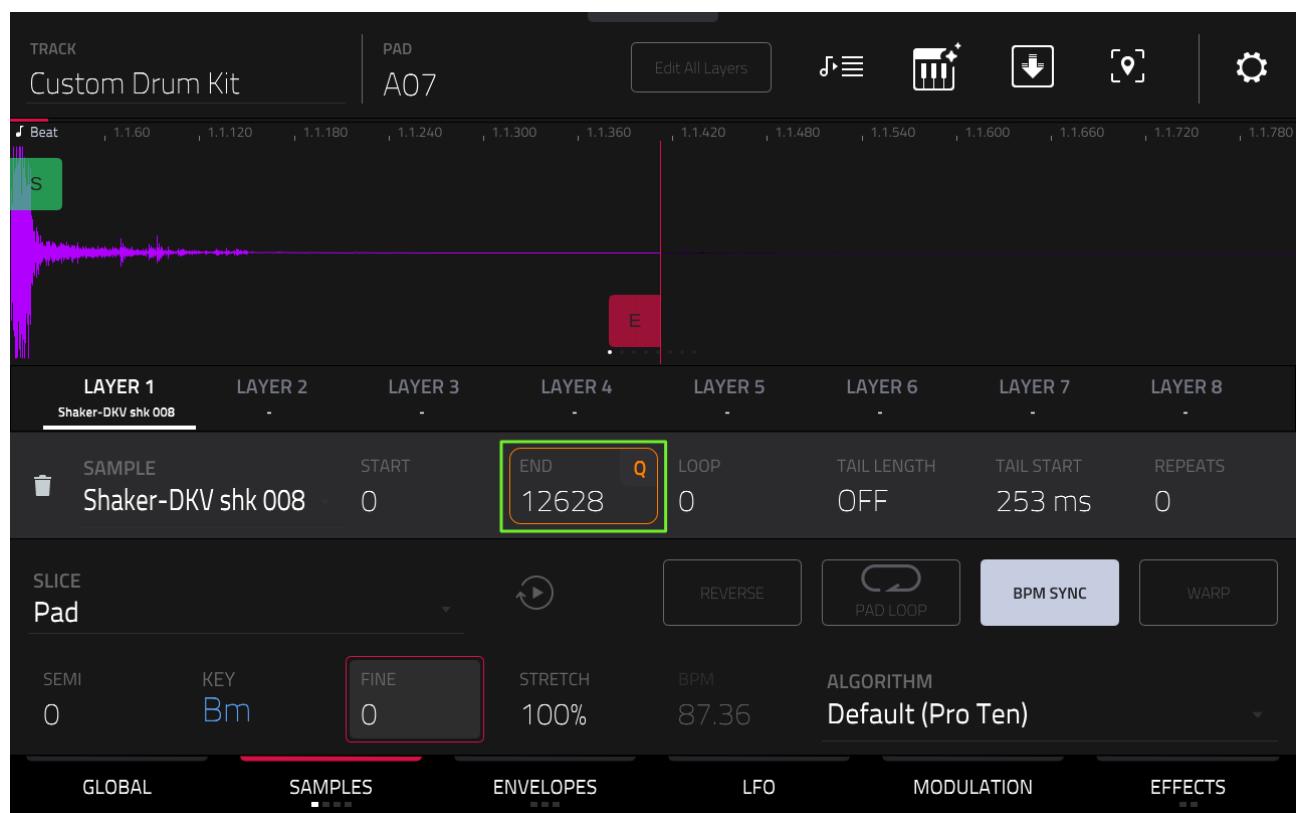


The top Q-LINK (Q-LINK 14) moves in units of 1000 samples, which is probably too much for a small sample like this. (Q-LINK 10) moves in units of 100, (Q-LINK 6) is units of 10, and finally (Q-LINK 2) is for moving in single sample units.

A third alternative is to just tap on the **END** point and turn the (DATA WHEEL). Each wheel 'click' will change the END point by an amount dictated by the zoom magnification, so if you want to perform really small edit point changes you'll first need to zoom in really close. As with many screens in the MPC, you can 'pinch and zoom' on the touchscreen to get closer, and then drag your finger left or right to move the waveform across the screen.

You can also use (Q-LINK 4) to zoom in, this is the bottom Q-LINK in [Q-LINK BANK 4]. The zoom 'focus' point is dictated by the currently selected edit point, so tap on the END point first before zooming in. Also in this final Q-LINK bank, (Q-LINK 8) can be used to scroll the waveform from left to right.

Using any of the described methods, set the END to 12628:

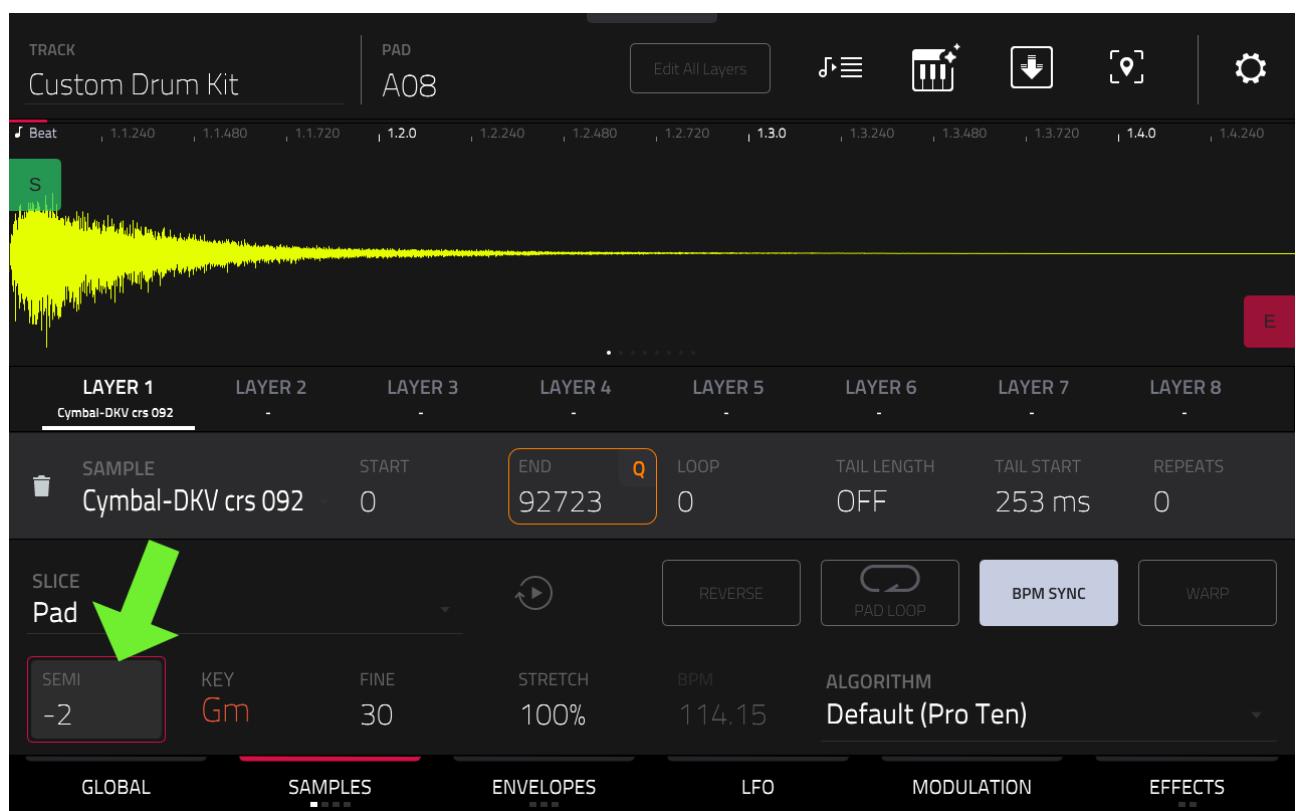


Hit pad [A07] to hear the click-free shaker.

CHANGING SAMPLE LAYER PITCH ('TUNE')

Pad [A08] is a crash cymbal – let's change its pitch to make it sound little darker. To change the pitch of a sample layer we need to change the 'tuning', which is actually changing the speed of the sample by manipulating its 'sample rate'.

Tap on the **SEMI** parameter (which is short for 'semitone') and turn the (DATA WHEEL) **anticlockwise** to 'tune' down (or 'lower the pitch' of) the current sample layer to **-2**.



As you tune down the pad layer you can hear the crash cymbal's timbre become a little darker. The SEMI can be set at any whole number between -36 to +36.

You can use the FINE parameter to change the pitch of the layer in smaller increments (range -99 to +99); try a **FINE** of **+30**, which when combined with a SEMI of -2 gives an overall effective tuning of **-1.70**.

Tap on the shaker on pad **[A07]** and change the **SEMI** on **LAYER 1** to **-3** to give a looser sounding shaker.

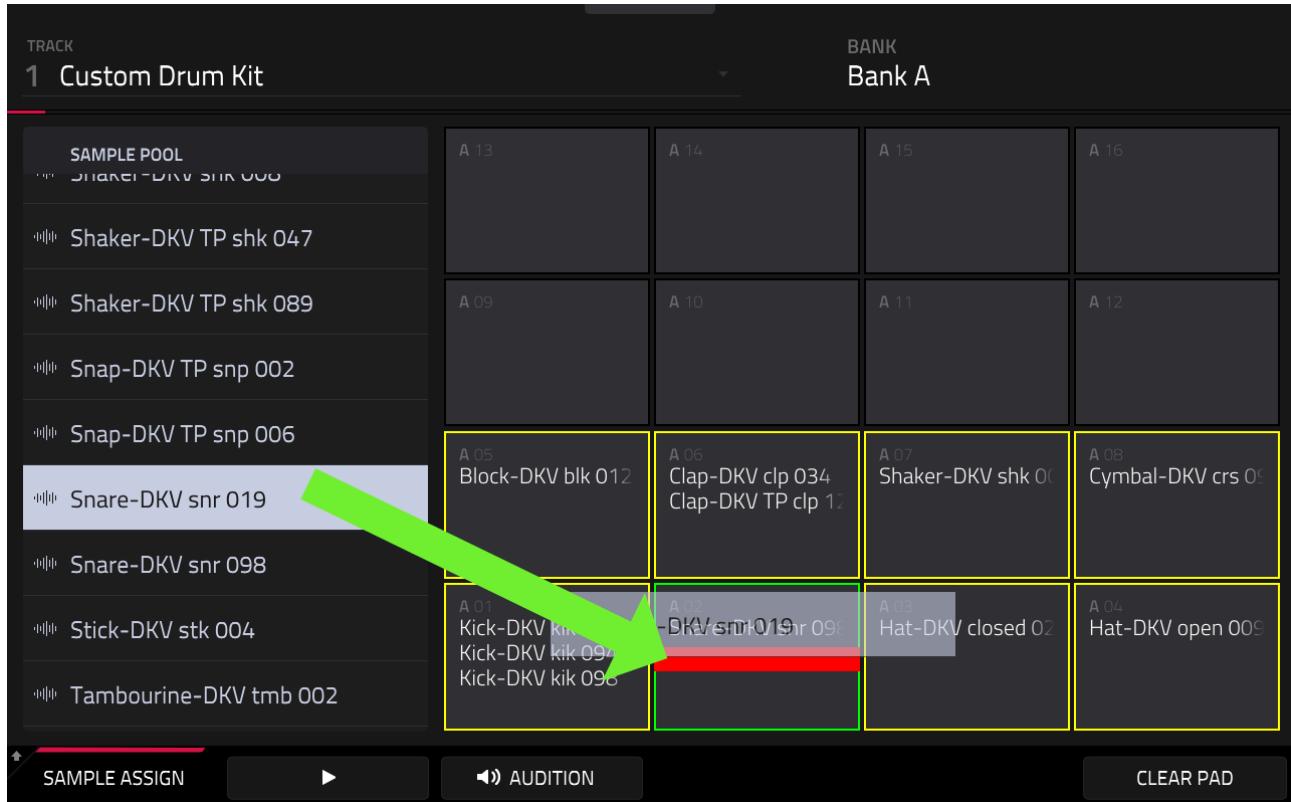
Finally select the wooden block on pad **[A05]** and try a more dramatic tuning down of **SEMI: -10**.

LAYERING DRUM SOUNDS

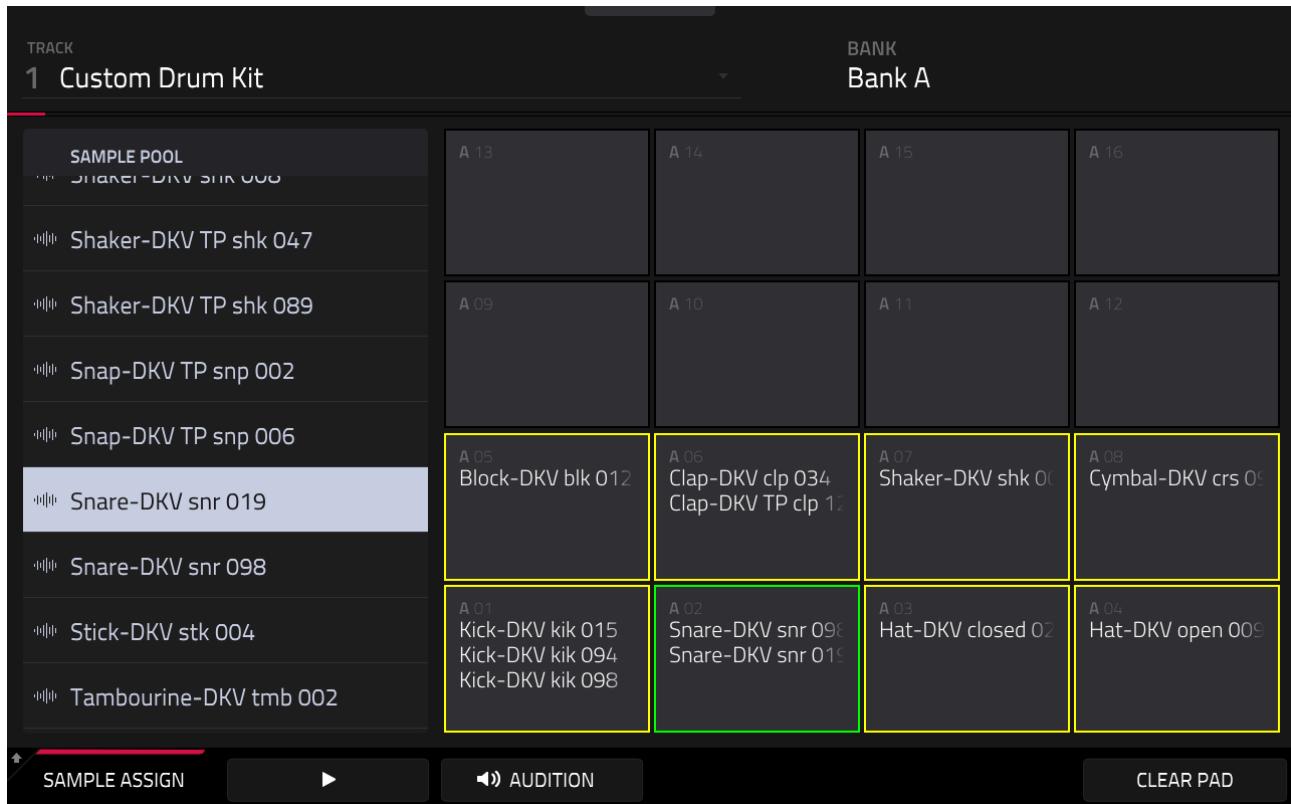
We can start making our drum sounds unique by layering multiple drum sounds together on a single pad. Tap on the snare pad **[A02]** – let's assign an additional snare to LAYER 2 on this pad.

First, head over to **BROWSER > MPC Bible 3 Project Files > B02** and tap on the sample, '**Snare-DKV snr 019.WAV**' to preview it; it's quite a crunchy, compressed sounding snare so should provide some additional grit and fatness to our existing acoustic snare.

Press **LOAD TO POOL** to load this snare into the sample pool and hit the **SAMPLE ASSIGN** button. To assign this snare to **LAYER 2** of pad **[A02]**, hold down **[SHIFT]** and start dragging the sample over to pad **[A02]**. As you do you should see a red band appear on the pad:



Position the sample so the red band sits directly underneath the existing snare sample on layer 1 and release your dragging finger:

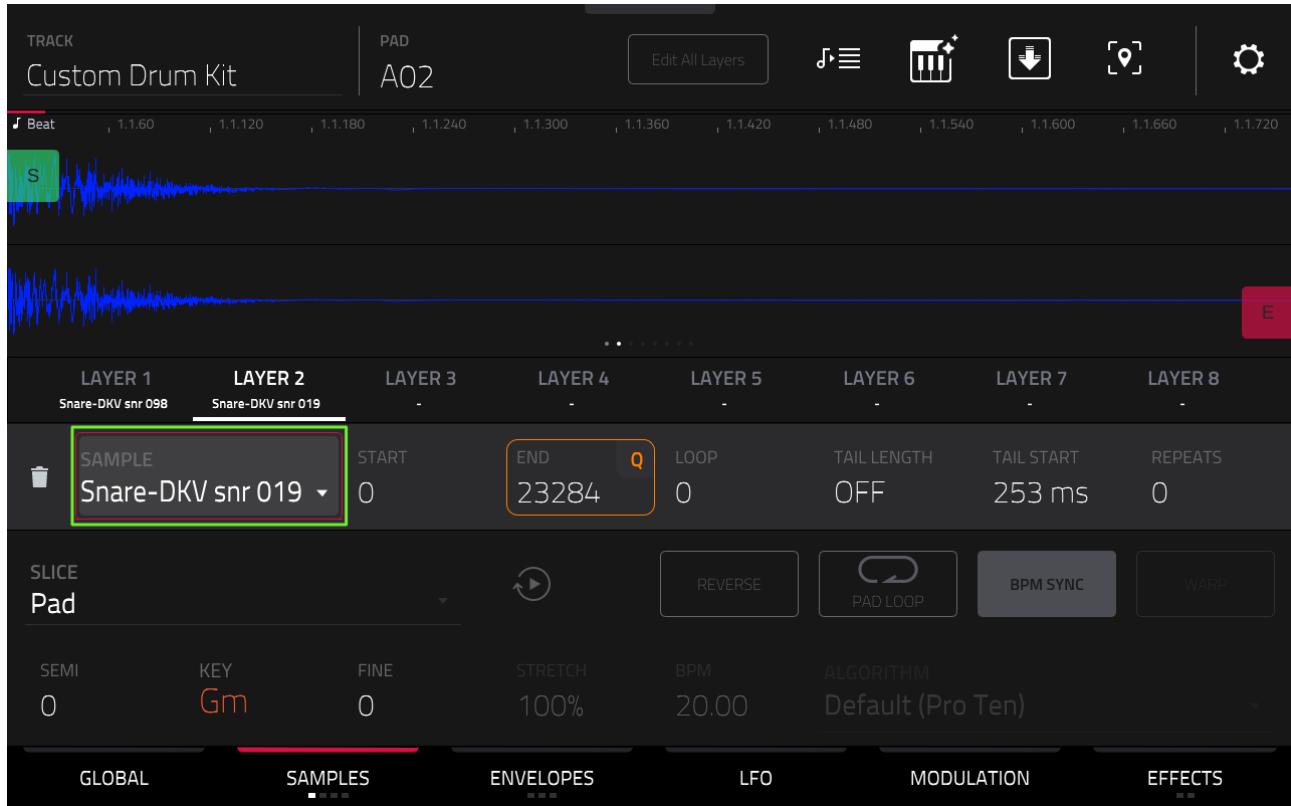


We now have two snares on this pad, although when you preview pad [A02] it's not immediately obvious that we have a layer, so let's tweak things a little.

Head back to **TRACK EDIT > SAMPLES**:



Here you can see that the **LAYER 2** tab is now showing the **Snare-DKV snr 019** sample is assigned – you can tap on the **LAYER 2** tab to view it:



Here you can perform the same edits as you could on LAYER 1. However this time I also want to adjust the *volumes* of each layer so I can create a customised 'blend' of the two snare samples. To do this, hit the **SAMPLES** button again:



This reveals the **TUNE/MIX** screen. This screen allows us to adjust the **LEVEL** for each layer independently – this differs to the level we were adjusting in the PAD MIXER as that one changed the level of the *entire pad* (i.e. the output of all the layers combined).

The new snare sample on layer 2 is actually a little quiet, so ideally we want to increase the LEVEL of LAYER 2. However, the existing LEVEL of 127 is already the maximum level, so we'll have to lower the level of LAYER 1 instead.

First, reduce the **LEVEL** of **LAYER 1** to **0** so we can only hear the snare on LAYER 2; you can use the (DATA WHEEL), or select [**Q-LINK BANK 3**] and turn the top Q-LINK (**Q-LINK 15**).

Now start continually tapping pad [A02] while you begin to gradually increase the LEVEL of LAYER 1. Try a **LAYER 1 LEVEL** of **54**.



This retains that natural acoustic sound of 'Snare-DKV snr 098' but with some added grit and crunch from 'Snare-DKV snr 019'.

This screen also allows adjustment of tuning (it's the same set of SEMI and FINE tuning parameters that we previously used on the SAMPLES screen). Try setting the **SEMI: -2** for **LAYER 2**. De-tuning that second layer instantly adds more body to the snare.



After dropping the level on layer 1 and adding an additional sample to layer 2, it's inevitable that the overall output level of

pad [A02] has changed and will need some 're-balancing' in the PAD MIXER. However, let's leave this mix tweaking until we've finished this round of drum layering.

LAYERING THE KICK

We don't have to limit ourselves to only two layers. Go back to the **BROWSER** and in the **B02** folder load the **Kick-DKV TP kik 094** and **Kick-DKV TP kik 098** samples into the sample pool.



Currently it is not possible to load samples from disk directly to any pad layer other than layer 1. The only way to assign samples to layers 2-8 is to load them into the sample pool first.

Now assign these two kick drums to **LAYER 2** and **LAYER 3** on pad **[A01]**. You can do this in the SAMPLE ASSIGN screen by dragging the samples as before, or head back to **TRACK EDIT** where you'll be taken back to the TUNE/MIX screen. Here, just assign the two kicks to the **SAMPLE** field for **LAYER 2** and **LAYER 3**:



To assign samples to a layer, you can either single tap and use the (DATA WHEEL) or double tap and select the samples from the pop up list.

Now let's experiment with the volume blend of the three layers using the same technique we used with the snare. Use **LEVEL: 0** to isolate an individual kick to listen to the sound and decide what it will add to the final layered sound.

The original **Kick-DKV kik 015** is very much a 'natural' sounding acoustic kick, while the other two kicks are more processed with a fat, vinyl tone. Start with a **LEVEL: 50** on **LAYER 1** and **LEVEL: 0** on **LAYER 2** and **LAYER 3**. Now begin bringing up the **LEVEL** for **LAYER 2**; as you do you can hear it adding more body and thump to the layer 1 kick. Set **LAYER 2 LEVEL: 113**.

Now try something a little different. Set the **SEMI** for **LAYER 3** to **+6**; this time we're pitching up, which gives this third kick a tighter, punchy sound.

Increase the **LEVEL** on **LAYER 3** while you preview pad **[A01]** and hear how this third layer adds more bite to the overall sound. Try **LEVEL: 85**:



*Remember there are 8 sample layers available per pad, so you can really go to town with your layering experiments. On the SAMPLES screen you can access each layer using the eight dedicated layer tabs, while in the TUNE/MIX screen you can access layers 5-8 by tapping on **LAYER 1-4** so it reads **LAYER 5-8**:*

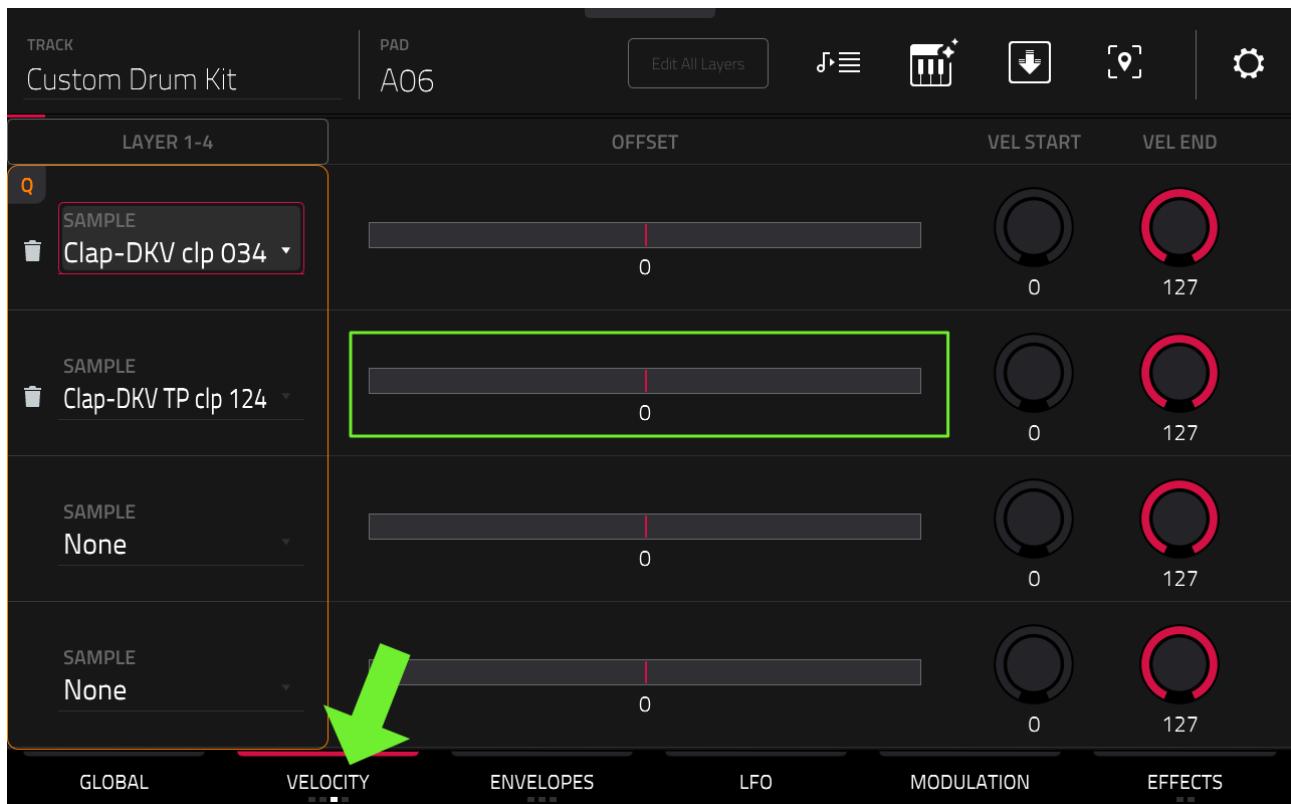
LAYER OFFSET

Our existing clap pad features quite a dry, short clap sample, let's see how layering can make this clap more interesting. In the **BROWSER**, load the clap sample '**Clap-DKV TP clp 124**' into the sample pool.

Now head back to **TRACK EDIT** and assign this new **Clap-DKV TP clp 124** sample to **LAYER 2**. Set **LEVEL: 0** for the new clap on **LAYER 2** and while previewing pad [A06] begin to increase the **LEVEL** until you get a nice blend of the two claps. Notice how the new clap layer has already added more depth and ambience to the existing clap. Try a **LEVEL** of **90**:

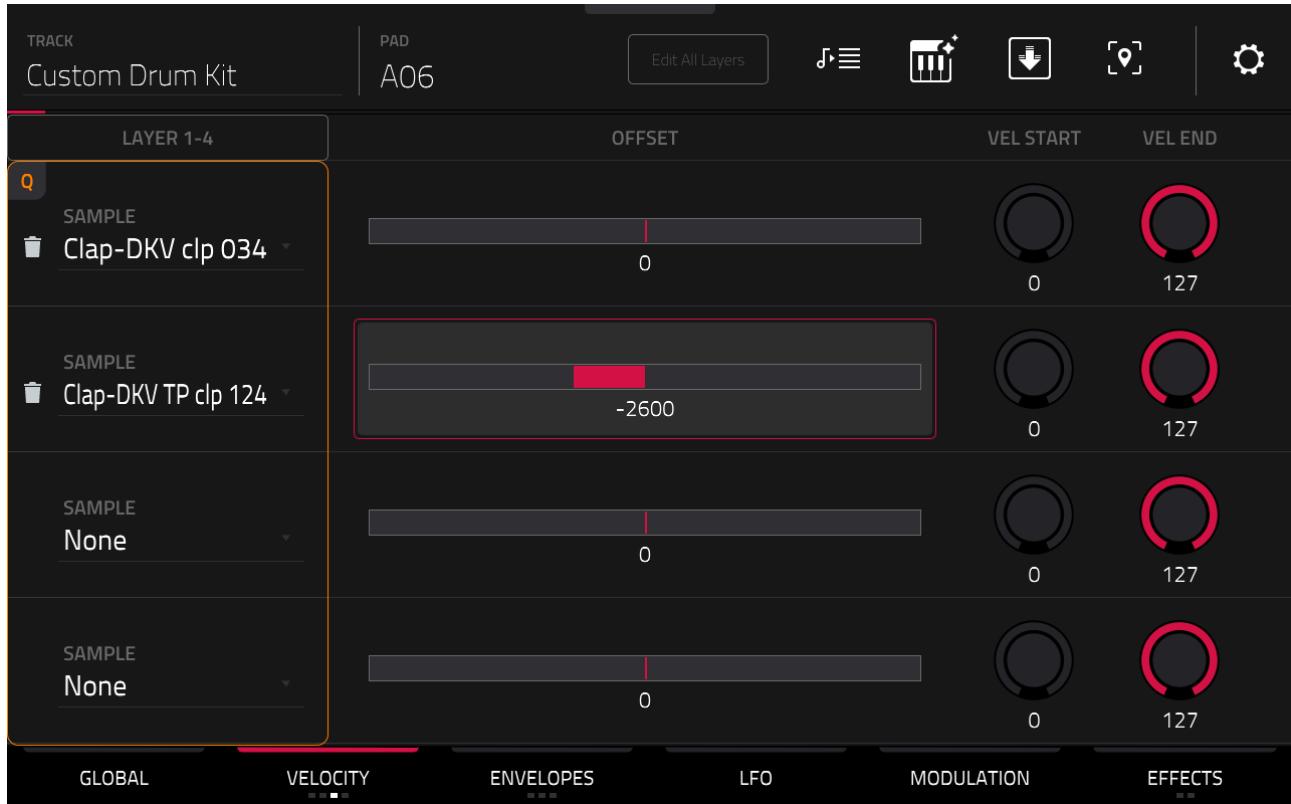


Now tap the **TUNE/MIX** button so it reads **VELOCITY**:



On this page the **OFFSET** parameter lets us *delay* the playback of one or more layers. This can sound really nice with claps as it creates a 'dragged' sound. Tap on the **OFFSET** parameter for **LAYER 2** and either drag the offset value to the left so it becomes negative. Alternatively single tap the **OFFSET** value and use the (DATA WHEEL) or use (Q-LINK 10).

Initially use a large negative value to exaggerate the offset; try **-6000** and press pad **[A06]** to preview. You should hear the playback of our second layer is now delayed by a large degree. Now start reducing the **OFFSET** while you preview the pad, a small offset (between 0 and -1000) provides a 'thickening' effect, but try an **OFFSET** of **-2600** to create a more 'dragging' sound.



Head back to the **TUNE/MIX** screen. You can do this by pressing **VELOCITY** three times, or hold down **[SHIFT]** and press **VELOCITY** and you will go *back* one screen

The final column in the TUNE/MIX screen lets us set the **PAN** for each layer independently. Set the **PAN** for **LAYER 1** to **-16** and the **PAN** for **LAYER 2** to **+16**.



This gives the clap some stereo width but also, when combined with that OFFSET on layer 2, a sense of motion as the clap 'drags' from the left to right side of the stereo field.

TUNING AN ENTIRE PAD

I think this entire layered clap will sound better if it was tuned up a little. So far we've learnt how to tune an individual layer using the SEMI and FINE parameters, but how do we tune the output of an entire pad containing multiple layers?

One way is to tune down all our layers equally. In the **TUNE/MIX** screen press the **EDIT ALL LAYERS** button:



While this is engaged, all the layers on this current pad will all be edited together. So tap on the **SEMI** on any layer, turn the (DATA WHEEL) clockwise and you'll see the SEMI on all layers increase equally.

Set **SEMI: 1** and **FINE -30** for a subtle tightening up the the overall clap sound:



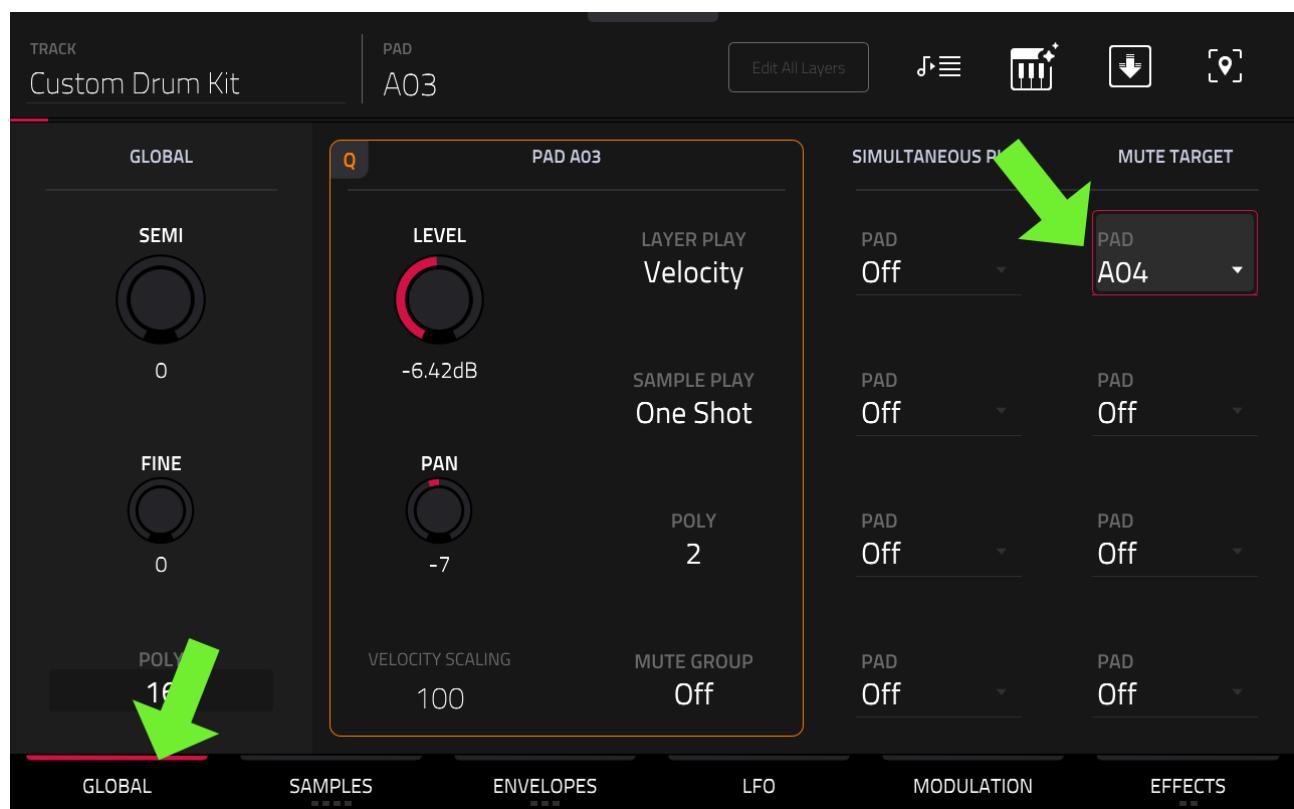
EDIT ALL LAYERS is a 'pad specific' setting, so enabling it on pad [A06] does not enable it on any other pad. It will however remain activated on pad [A06] until you turn it off, so after editing your layers, remember to tap on **EDIT ALL LAYERS** to disable it.

SETTING UP HI HAT MUTING

Our drum kit contains separate 'closed' and 'open' hi hat pads as an attempt to mimic the sound of a real acoustic hi hat opening and closing.

Hit pad [A04] and then while the open hat is still playing, hit pad [A03]. Can you hear an issue? The problem is that when you play the closed hat, the open hat should immediately stop playing, but instead it continues to play over the closed hat. So to make this emulation more realistic the closed hat should instantly 'mute' the open hat as soon as the closed hat is triggered.

This is really easy to achieve. Go to **TRACK EDIT > GLOBAL** and select pad [A03].



Set the first **MUTE TARGET** parameter on the right side of the screen to **A04**. Now every time you hit the pad [A03] closed hat, it will 'mute' any currently playing instances of the open hat on pad [A04]. Try it by playing

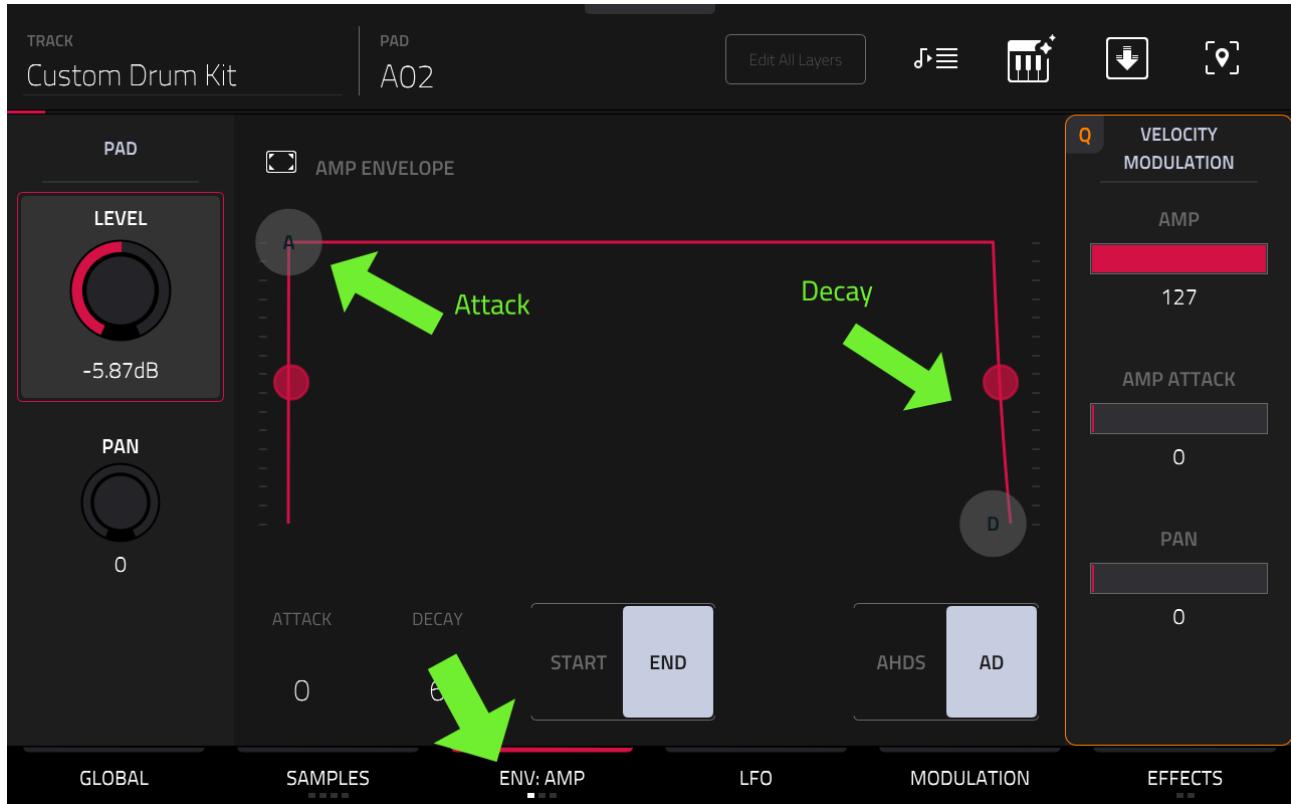
pad [A04] followed rapidly by pad [A03] and you'll hear the closed hat immediately 'shut' the open hat.



You can have up to four mute targets per pad, so if your kit has multiple open hats, you can set multiple mute targets per pad.

SHAPING PAD VOLUME WITH THE AMP ENVELOPE

Select pad [**A02**], our layered snare. If you listen closely with headphones you can hear some noise at the end of the pad playback. You might like the vibe this gives, but if not, it's easy to remove. Tap on the **ENVELOPES** button at the bottom of the screen so the button changes to **ENV:AMP**



On this screen we can control the volume ('amplitude') of the entire pad output (i.e. the audio signal of all individual layers combined).

The amp envelope screen is effectively split into three sections; the first column is just the current LEVEL and PAN settings for the entire pad, and these are the same level and pan parameters previously set in the PAD MIXER.

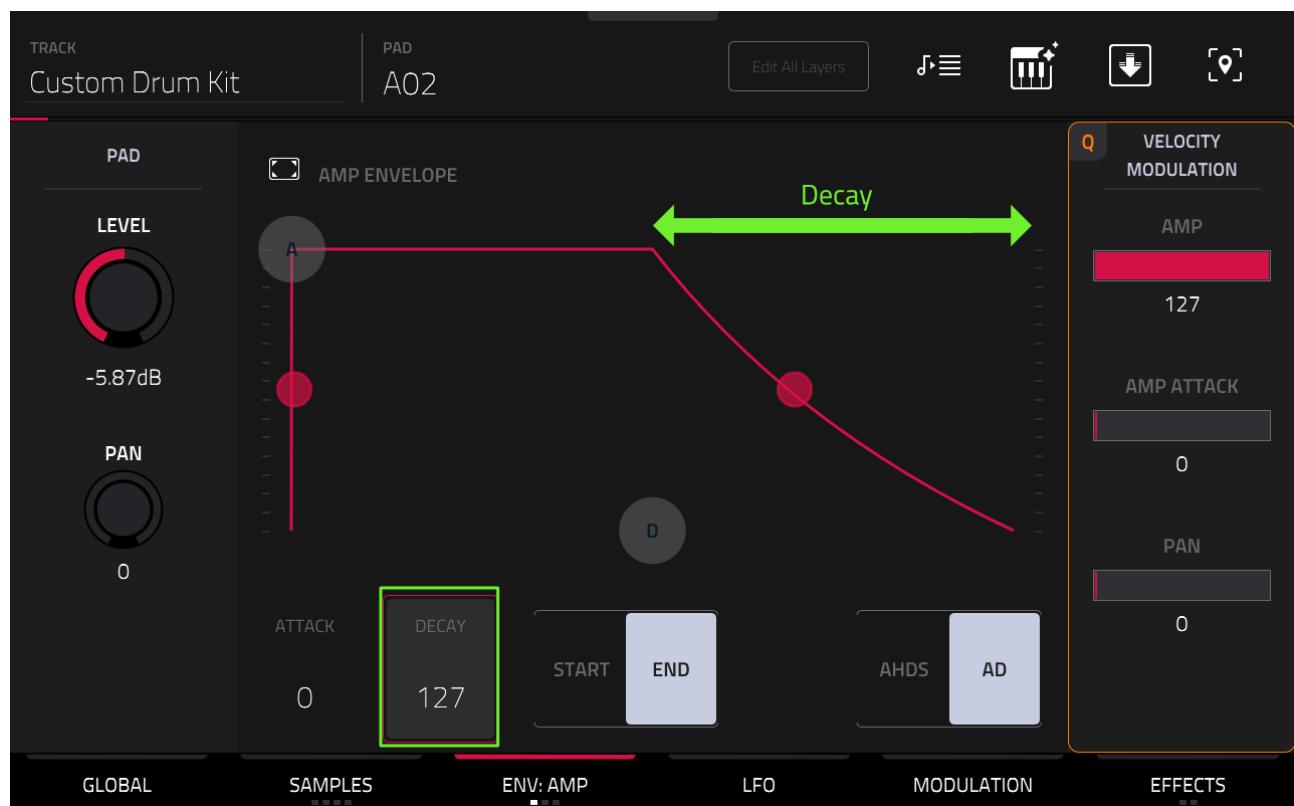
The main section of the page shows the **amp envelope** itself. This envelope allows you to literally 'shape' the volume of your pad as it plays.

Throughout the course we're going to discover there are several different types of envelopes in the MPC, but this default 'AD' envelope in a DRUM track

is the simplest to use. **AD** stands for '**A**ttack and **D**e~~c~~ay' and this refers to the two parameters that are controlled in this type of envelope.

DECAY controls how the volume of our pad fades out. The default DECAY of 6 doesn't do anything obvious, but does help avoid any 'clicks' that sometimes occur at the end of audio samples (we'll be looking to this issue when we come to chopping samples).

Increasing the decay value will increase the amount of the signal that is faded out towards the end. Tap on **DECAY** and begin to turn the (DATA WHEEL) or (Q-LINK 10) clockwise while previewing our snare. As we approach the maximum setting of **127** you'll hear the snare get shorter and less ambient ('drier') as the end is faded out. The envelope now looks like this:



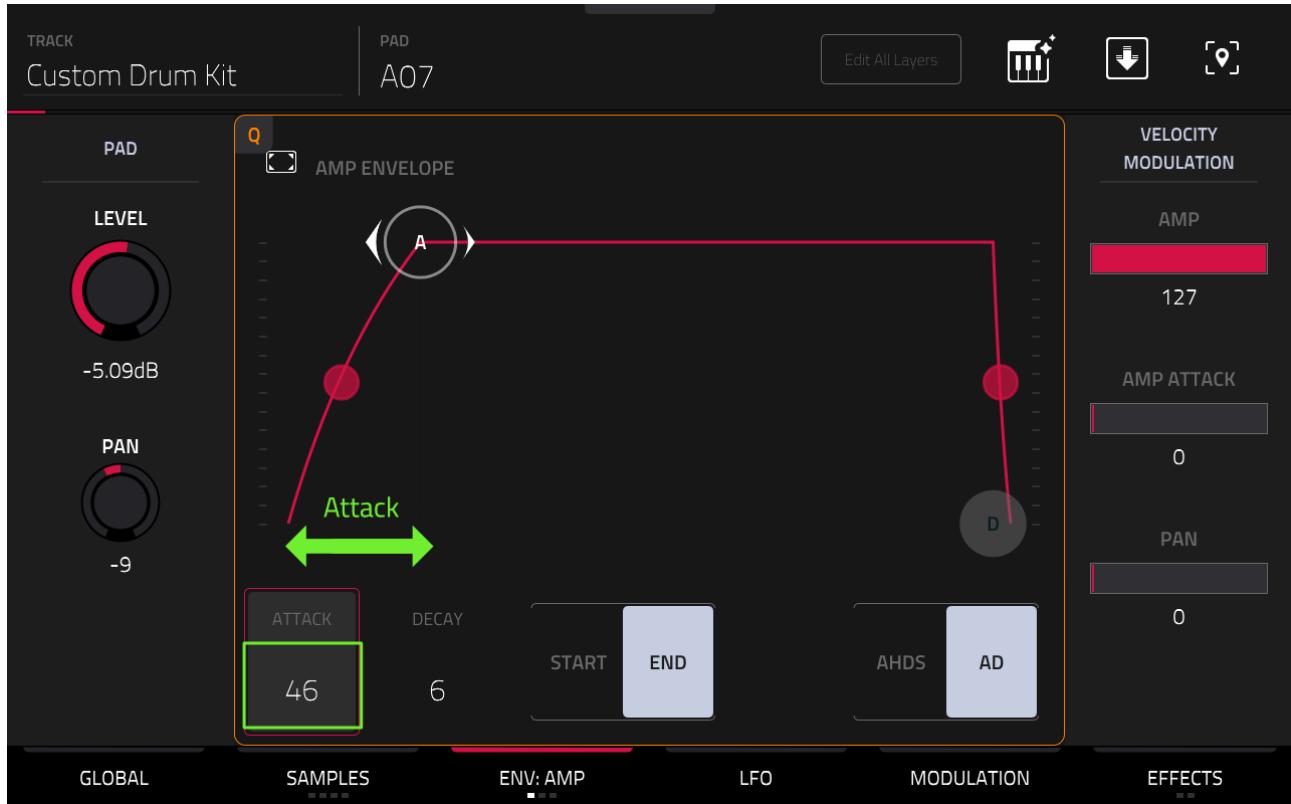
To target just that hiss on the end of the layered snare, listen carefully over headphones as you decrease the decay value; the aim it to try to retain the ambience of the snare while removing (or at least, reducing) the noise. I found a **DECAY** of **70** seems to give the best results.

Now select the shaker on pad **[A07]**. This shaker has quite an aggressive start, but we can use the amp envelope to soften this. The parameter that determines the shape of the start of the volume signal is the **ATTACK**. As you increase this, the volume of the pad begins to increasingly 'fade in'.

We can adjust the ATTACK by tapping the ATTACK parameter and turning the (DATA WHEEL) or use (Q-LINK 14), but both the ATTACK and DECAY can also be controlled by directly manipulating the envelope waveform itself.

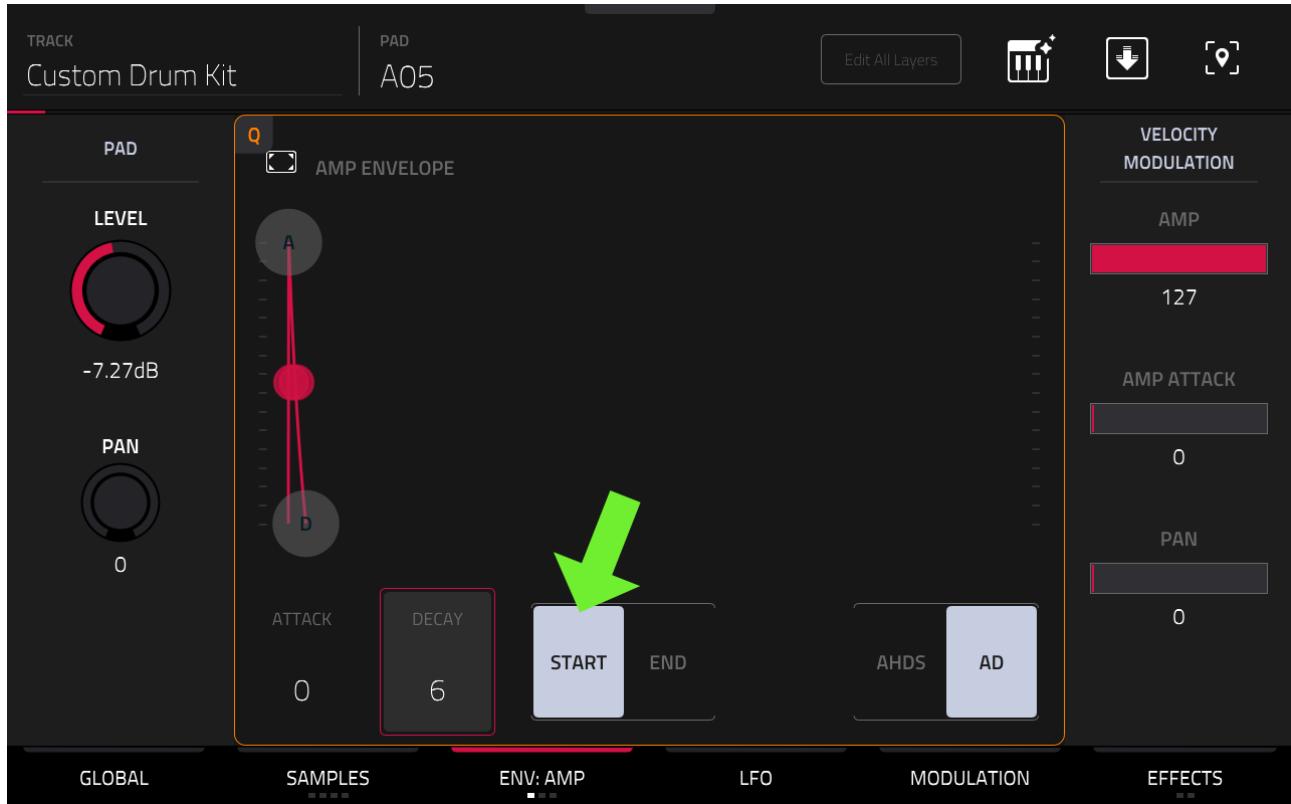
Hold down on the 'A' and drag it to the right; at the same time, keep continually hitting pad **[A07]** to hear the effect of changing the attack.

The key is to create a natural sounding re-shaping of this initial attack stage, try an **ATTACK** of **46**.

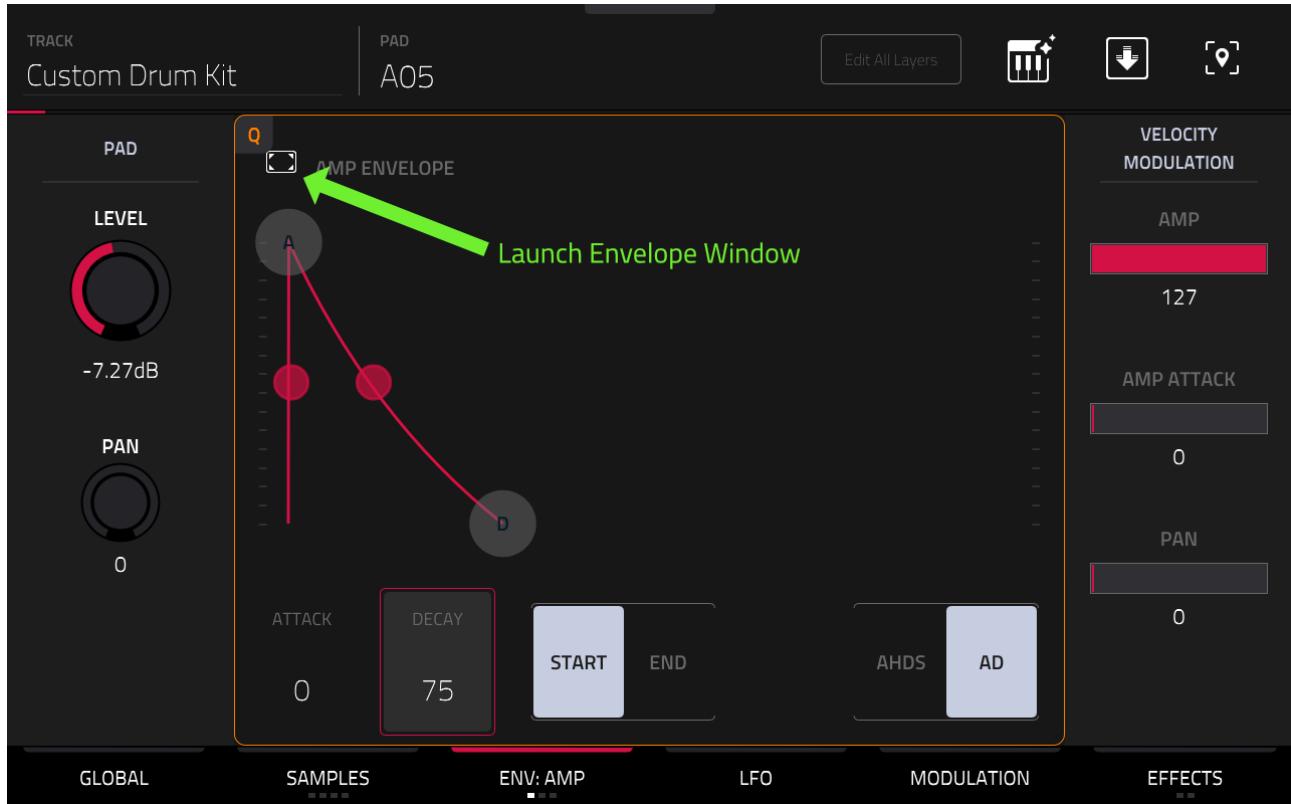


Select the wooden block pad [A05]. This was originally sampled with a whole heap of reverb, so let's use the envelope to create a drier block sound; we can then apply our own ambience later, one that better compliments the rest of our song.

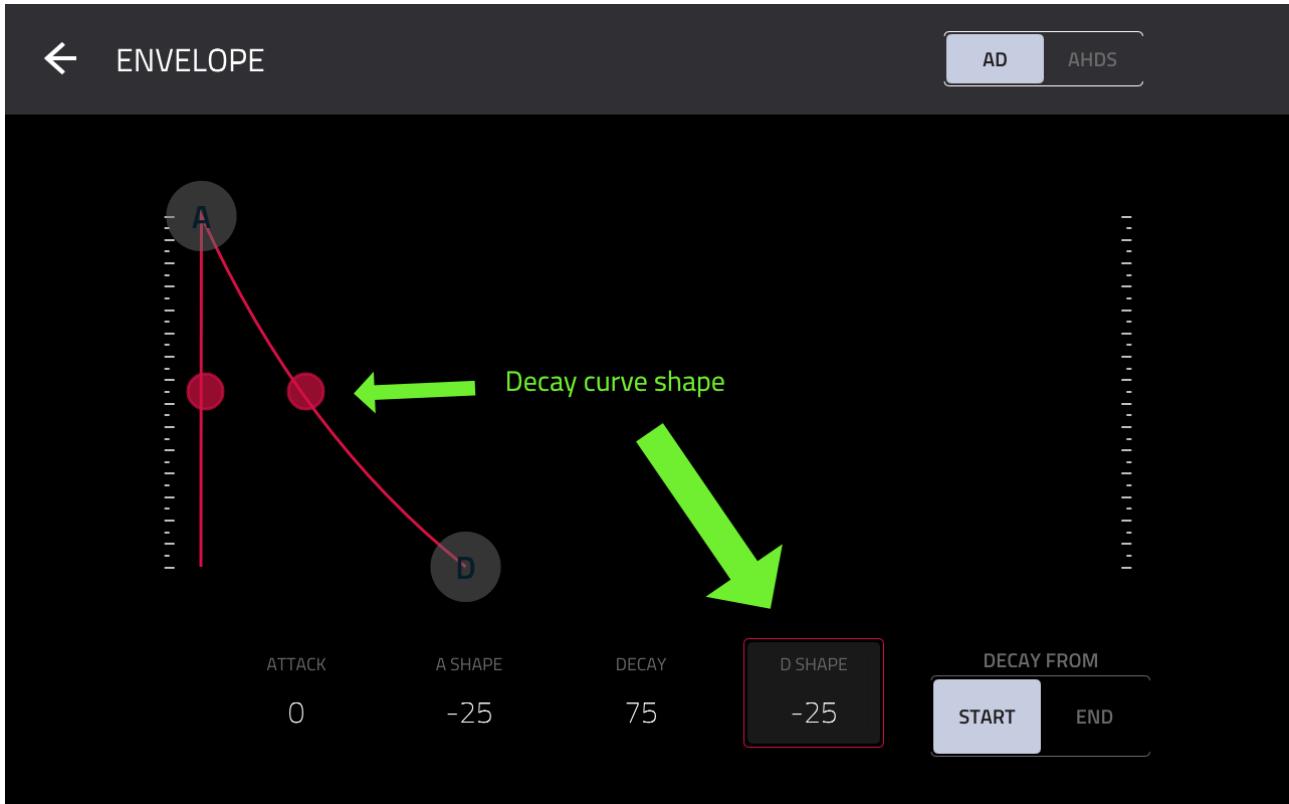
By default the amount of envelope decay is measured from the very end of the sample. We can however measure the amount of decay from the *start* of the sample. To do this, tap on **START**:



Now with the default **DECAY** of **6** you'll only hear a very brief 'click', so begin increasing the DECAY while previewing pad **[A05]**. As you increase the DECAY, your block will get an increasing amount of decay at the end, giving back some of that ambience that is 'baked' into the original sample. I set the **DECAY** to **75**:

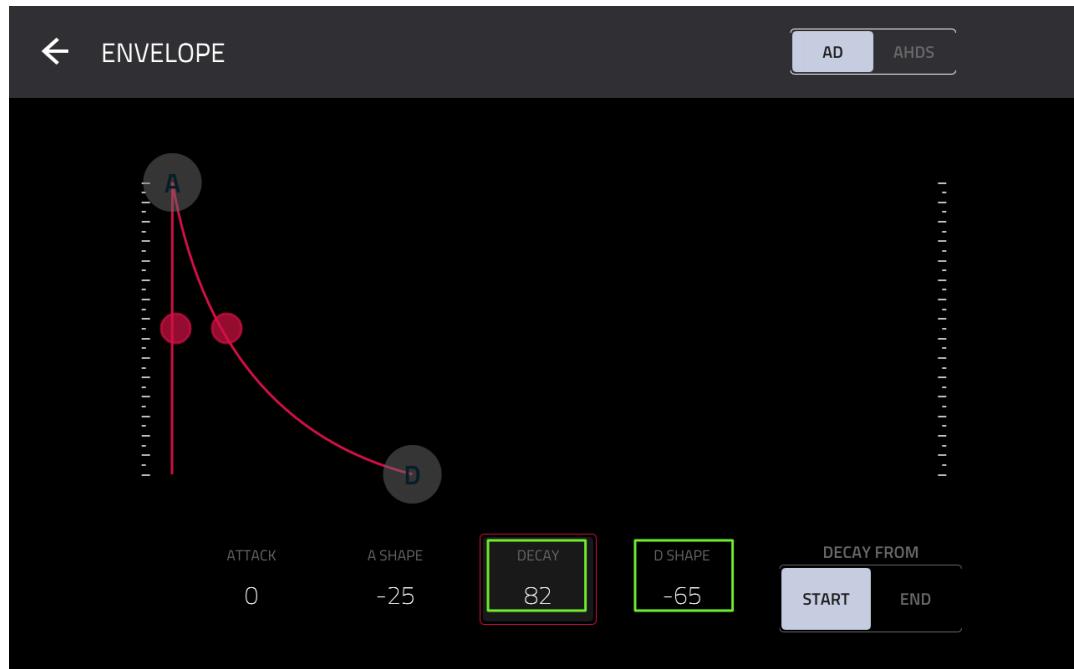


We can also change the *shape* of the decay curve using the red circle, as highlighted above. To view the envelope more clearly, tap on the **AMP ENVELOPE** icon to bring up the enlarged **ENVELOPE** window:



The red circle on the DECAY portion is represented by the **D SHAPE** parameter. Drag this circle to the right to increase the D SHAPE value, which increases the initial volume of the decay portion. Now drag to the left to reduce the D SHAPE, giving a more exponential decay.

I liked the sound of a **D SHAPE** of **-65**, but after applying this felt that the overall DECAY value needed increasing to bring back a little of the natural ambience of the block. Try a **DECAY** of **82**.



Once you've finished editing your envelope, tap anywhere on the outer edge of the ENVELOPES detail window to return to the main ENV: AMP screen.

FINISHING UP

And now that you've made some wholesale changes to your kit, head over to **PAD MIXER** and give the mix a quick 're-balance'.

If you want to retain a separate copy of your work so far, you can save a duplicate copy of this tutorial project to your own '**Projects**' folder on your MPC disk via **[MENU] > Save > Project As** (always use '**SAVE > Project As**' if you want to save a project in a different location or with a different name).

You can also check out my version of the kit by loading the project file '**B02 Final.xpj**'.

B03: SEQUENCING WITH GRID VIEW

We learned the basics behind MPC sequencing in Section A of this course when we recorded drums and instrument performances in real time to the MPC sequencer. Now that we're a lot more comfortable with the MPC I want to show you how to combine those real time recording techniques with the MPCs' powerful sequence editing functions.

TOPICS COVERED IN THIS CHAPTER

- ✓ Introduction to GRID VIEW
- ✓ Grid editing tools
- ✓ Editing velocity
- ✓ Using Swing
- ✓ Adding natural feel with humanise
- ✓ Randomisation
- ✓ **Workshop:** Menu customisation & shortcuts

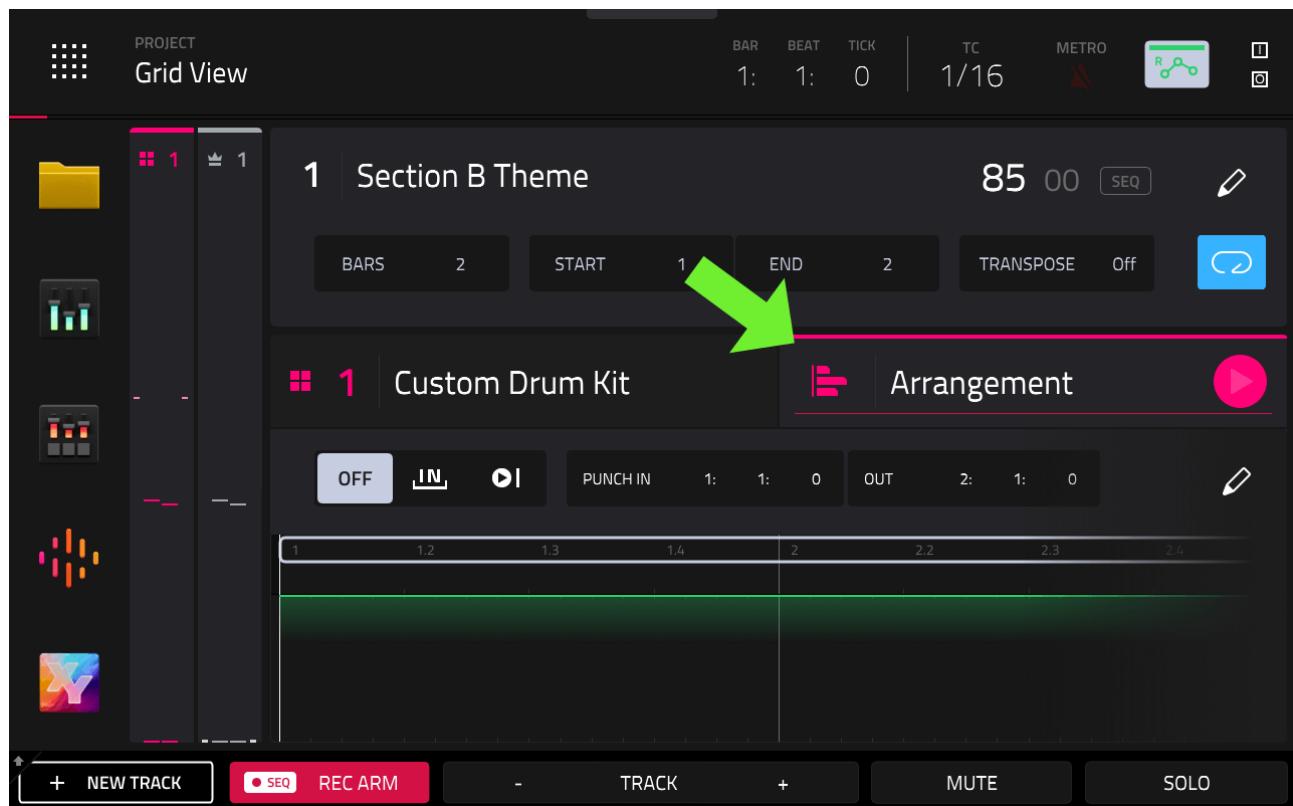
GRID VIEW OVERVIEW

So far in the course we've only interacted with our sequences in MAIN, but there are other sequencing-focused screens in the MPC where we both

record, view and directly manipulate the actual performance data on our sequencer tracks. One of these is **GRID VIEW**.

From the **BO3** folder load up the project file **BO3 Grid View.xpj**. In [**MAIN**], go to **sequence 1** I've already set the sequence as **2 bars** in length, with a tempo of **85.0 bpm**, and on track 1 I've already assigned the **Custom Drum Kit** that we built in the previous chapter.

Tap on the **Arrangement tab**:

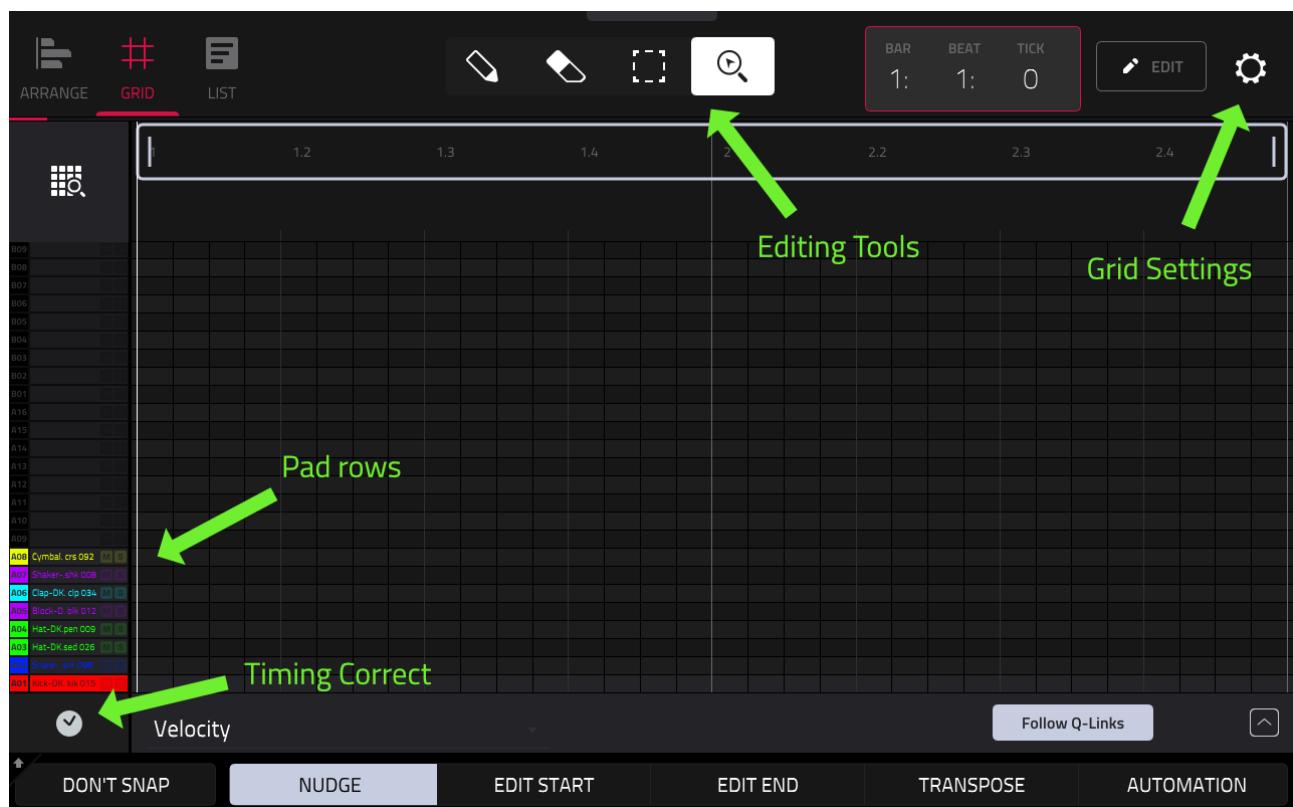


There's a few ways to access the GRID; on some MPCs you'll have a dedicated [**GRID**] hardware button. On others it's the 'secondary' function for the [**MAIN**] button. You can also use [**MENU**] > **GRID VIEW**. Or just double tap on the grid in the Arrangement tab in MAIN.



In the workshop at the end of this chapter we'll learn how to customise the order of the MENU icons, as well as add our favourite shortcuts to a handy pull out menu.

Any of these methods will take us to the default **GRID VIEW** screen:

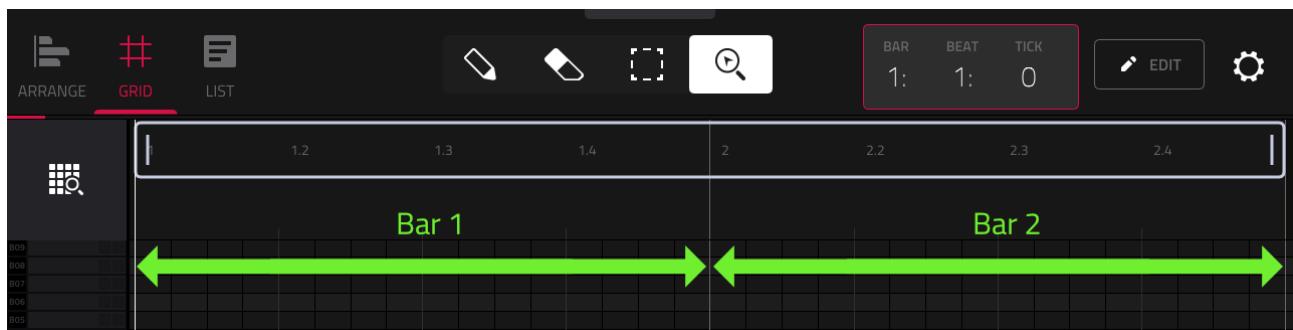


GRID VIEW is a graphical representation of all the MIDI events on the currently selected track, but it also provides other sequence editing tools and information just like MAIN.



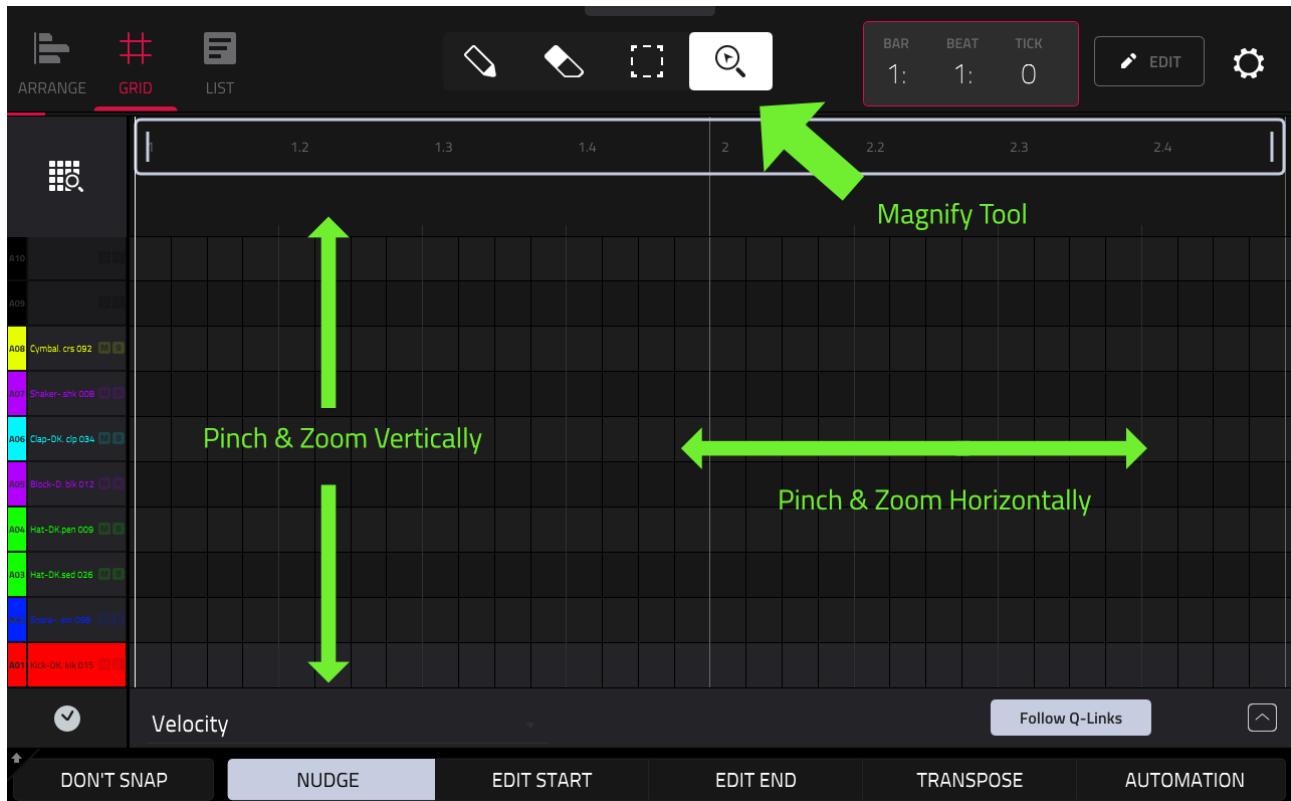
We've already seen a very basic 'read-only' version of this grid in the 'Arrangement' tab in MAIN.

Just like in MAIN, we have a **time counter** at the top of the screen that shows us the current playhead position. Directly underneath we have the sequence timeline which displays the sequence time in bars and beats (for example. **1.2** means bar 1, beat 2):



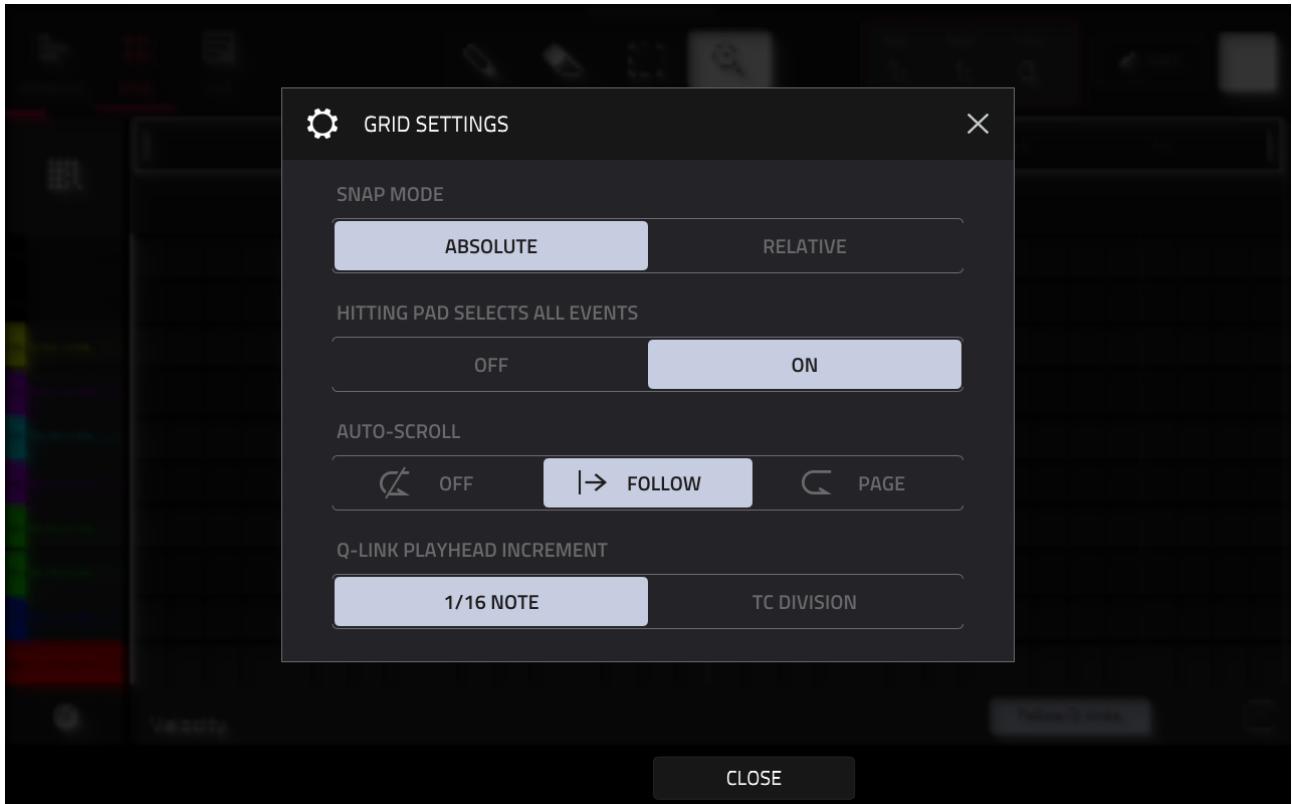
Up the left hand side of the screen you'll see a dedicated row for each pad in the currently selected pad bank (make sure [**BANK A**] is selected) – these rows will store the MIDI events for each pad. If your pads have colours assigned then these colours are also used here, along with the name of the sample assigned to LAYER 1 of this pad (albeit in a very tiny font!).

You can 'pinch and zoom' vertically to enlarge the row heights:

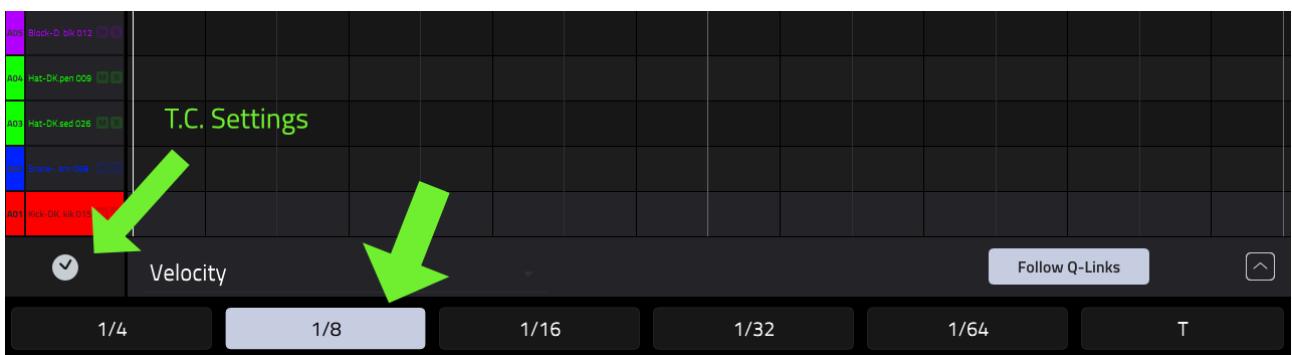


I advise you pinch within the grid itself rather than trying to pinch on the row headers (otherwise you'll be bombarded with random pop up dialogs). If the rows disappear off screen, use one finger to 'drag' the region back into view.

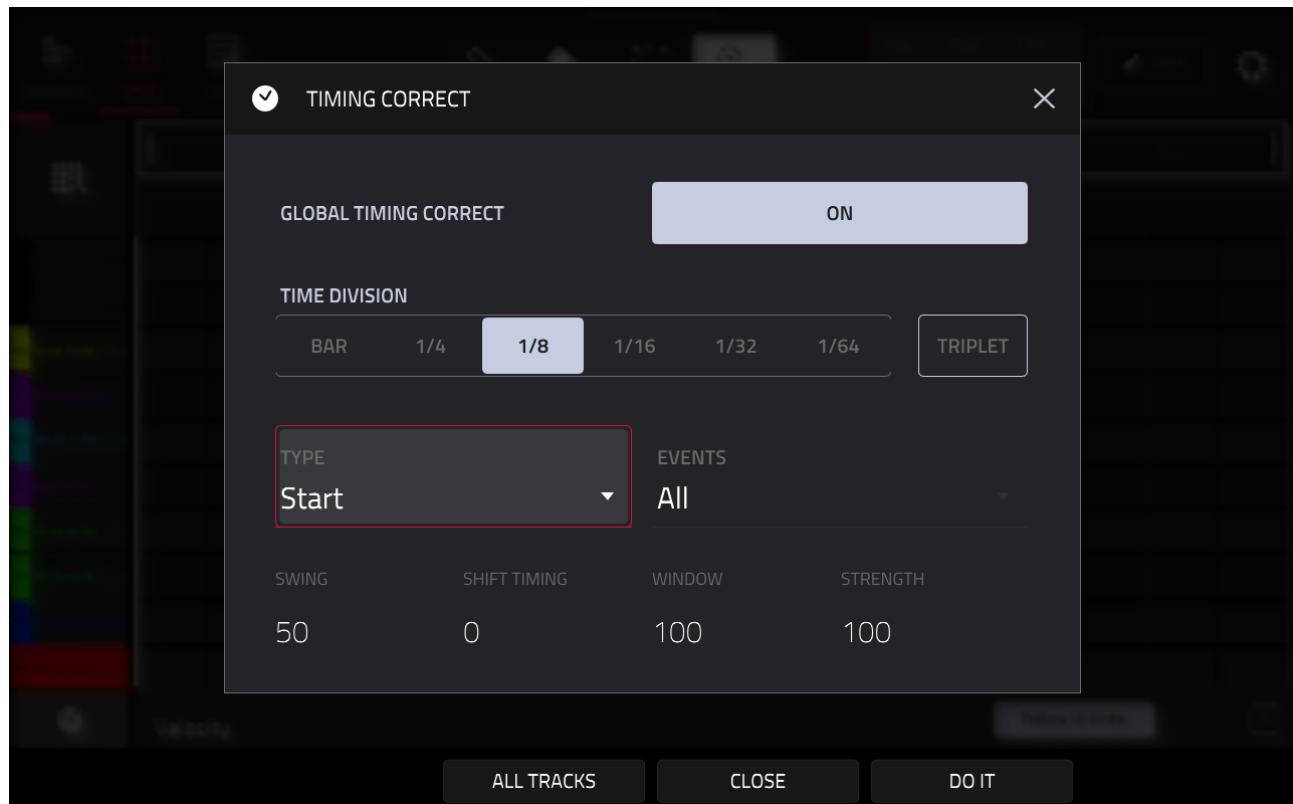
Before we go any further, click on the **GEAR icon** at the top right of the screen and make sure the **GRID settings** are configured as follows (I'll explain more about these individual settings as we work through this tutorial):



Before we start laying down some drums, make sure the timing correct (**T.C.**) time division is set to **1/8** – remember you can hold down [**NOTE REPEAT**] and select **1/8** from the button row that appears at the bottom of the screen:



Alternatively, tap on the small circular icon at the bottom left of the grid to bring up the **TIMING CORRECT dialog**:



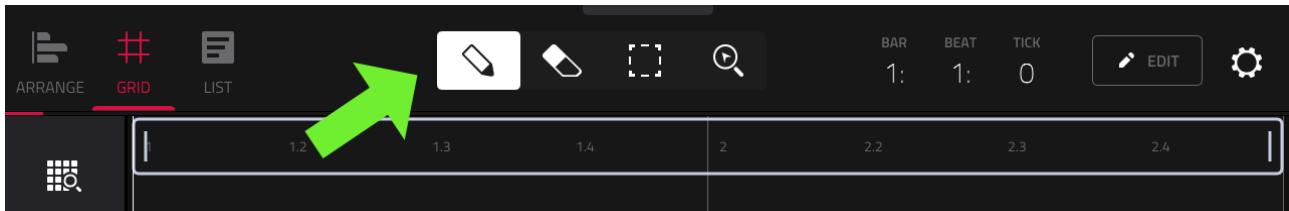
Make sure **GLOBAL TIMING CORRECT** is **ON** and select **1/8** under **TIME DIVISION** and hit **CLOSE**.

Nowt any event you now insert into the grid will automatically be placed on the nearest 1/8th quantise point, just like we found in Section A when recording events in real time in MAIN.

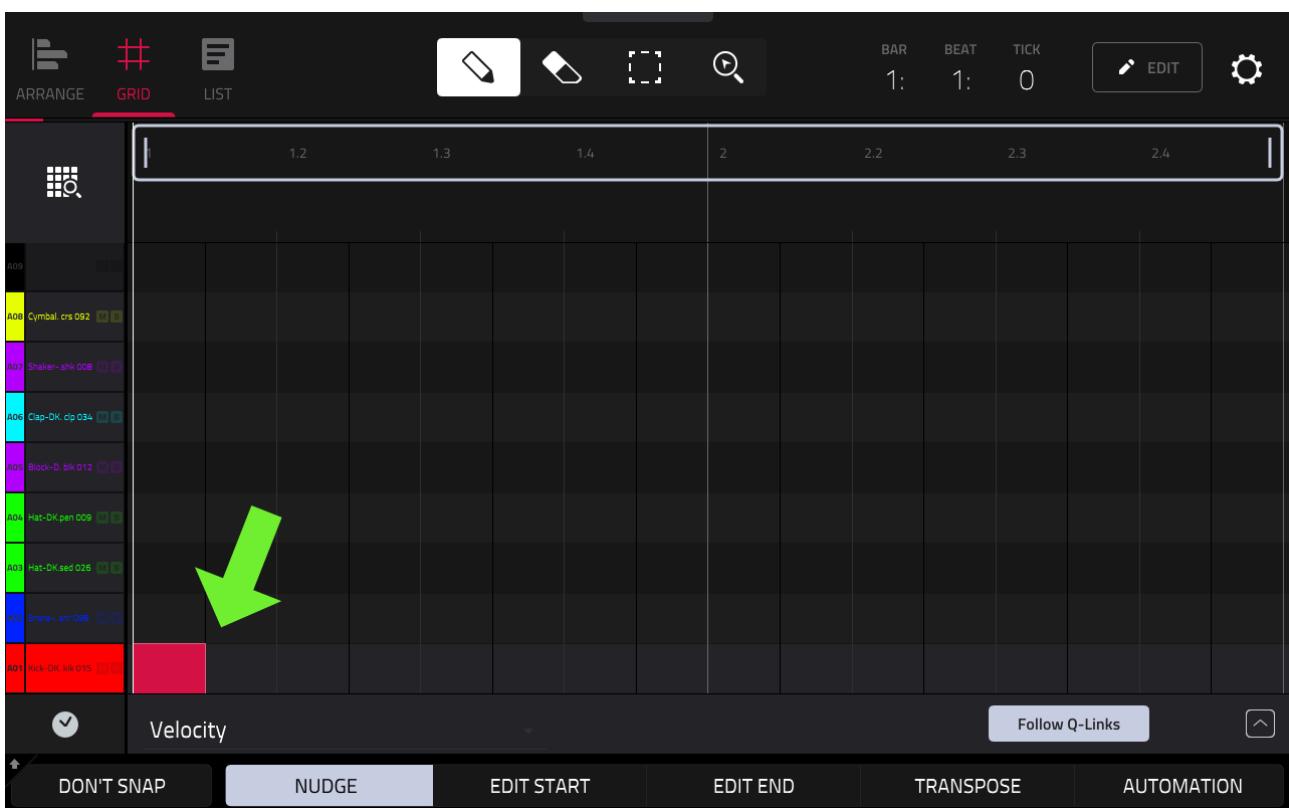
USING THE GRID TOOLS

Let's add some kick events. First select the **Pencil Tool** from the top toolbar:

BO3: SEQUENCING WITH GRID VIEW

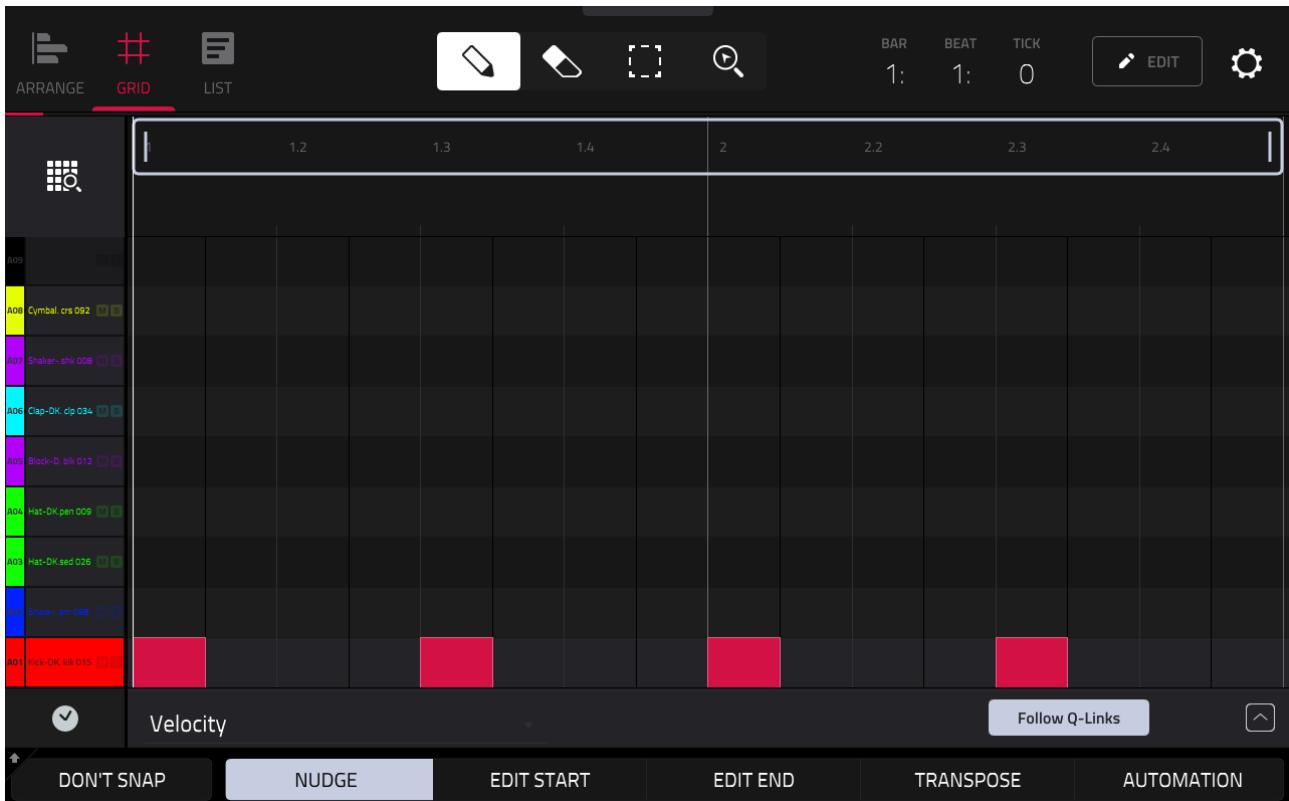


To add a kick drum event at the very beginning of the sequence, tap on the pad [A01] kick drum row at **1:1:0**



If you make a mistake you can just hit [**UNDO**]. Now repeat the process, but this time add a kick drum event at **1:3:0**, and continue the same in bar 2 with kick events at **2:1:0** and **2:3:0**

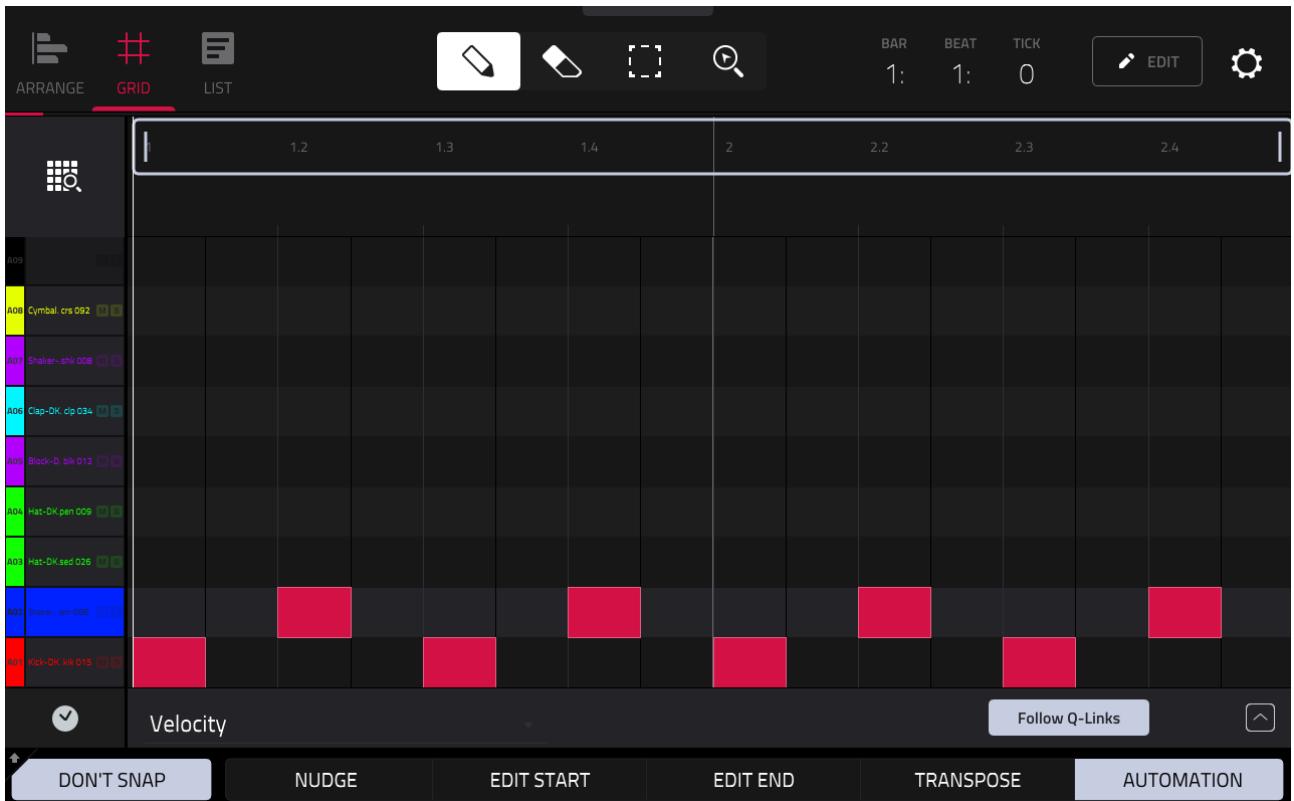
BO3: SEQUENCING WITH GRID VIEW



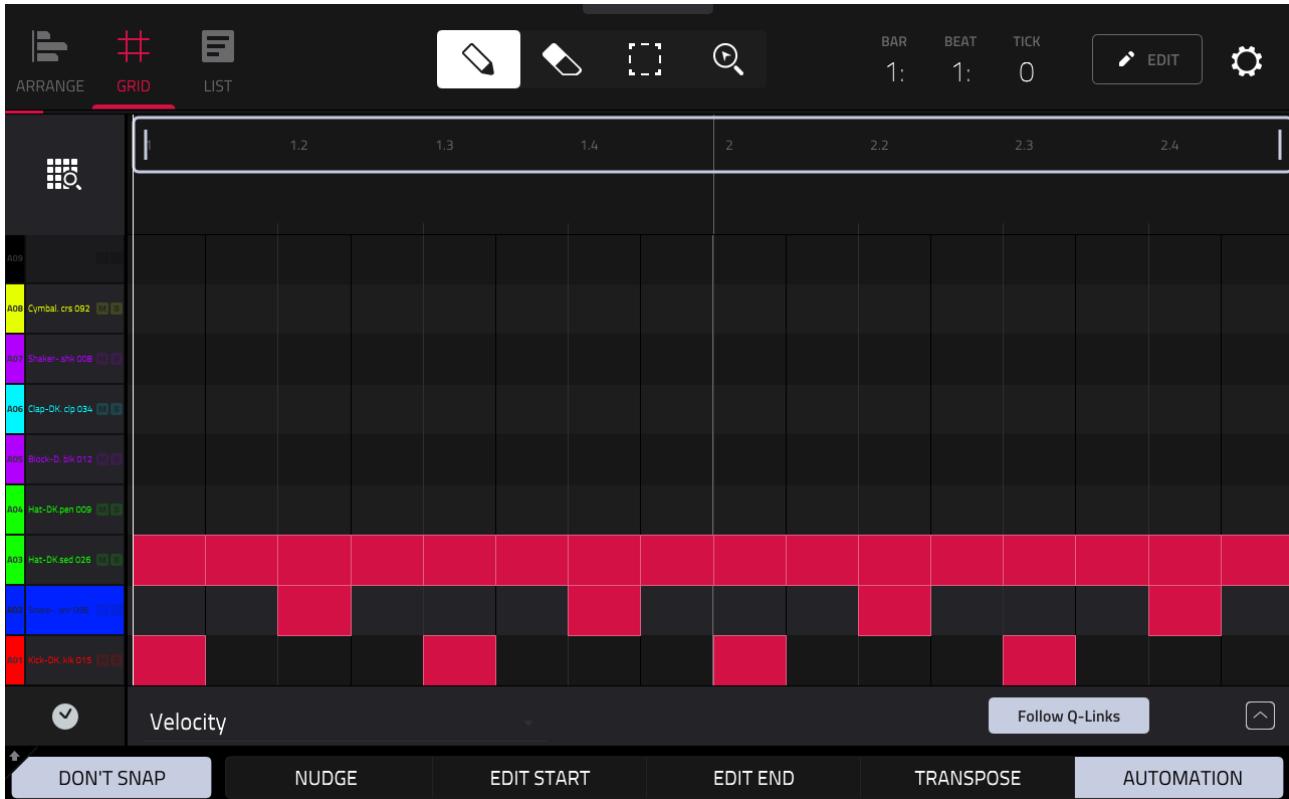
These red rectangles are MIDI events that will trigger the pad associated with this grid row – in this case, pad [A01], the kick drum. Hit [**PLAY START**] to hear the kicks.

Now let's add some snares on the 2nd and 4th beats of each bar (1: 2: 0, 1: 4: 0, 2: 2: 0, 2: 4: 0). To do this you need to add the events on the snare row, pad [**A02**]:

BO3: SEQUENCING WITH GRID VIEW



Now let's add some closed hi hats. Hold down your index finger at 1: 1: 0 on the pad [A03] closed hat row and drag your finger across the screen to produce a line of 1/8th closed hi hats.



Hit [**PLAY START**] to hear our simple beat. It's currently very basic, so let's overdub some additional kicks and snares to make it a little more interesting – this time we'll use a 1/16th time division.

Remember you can quickly do this by holding down the [**NOTE REPEAT**] button or by using the '**TIMING CORRECT**' screen – set **TC** to **1/16** so any event we add to our track will be placed within a 1/16th time division grid.

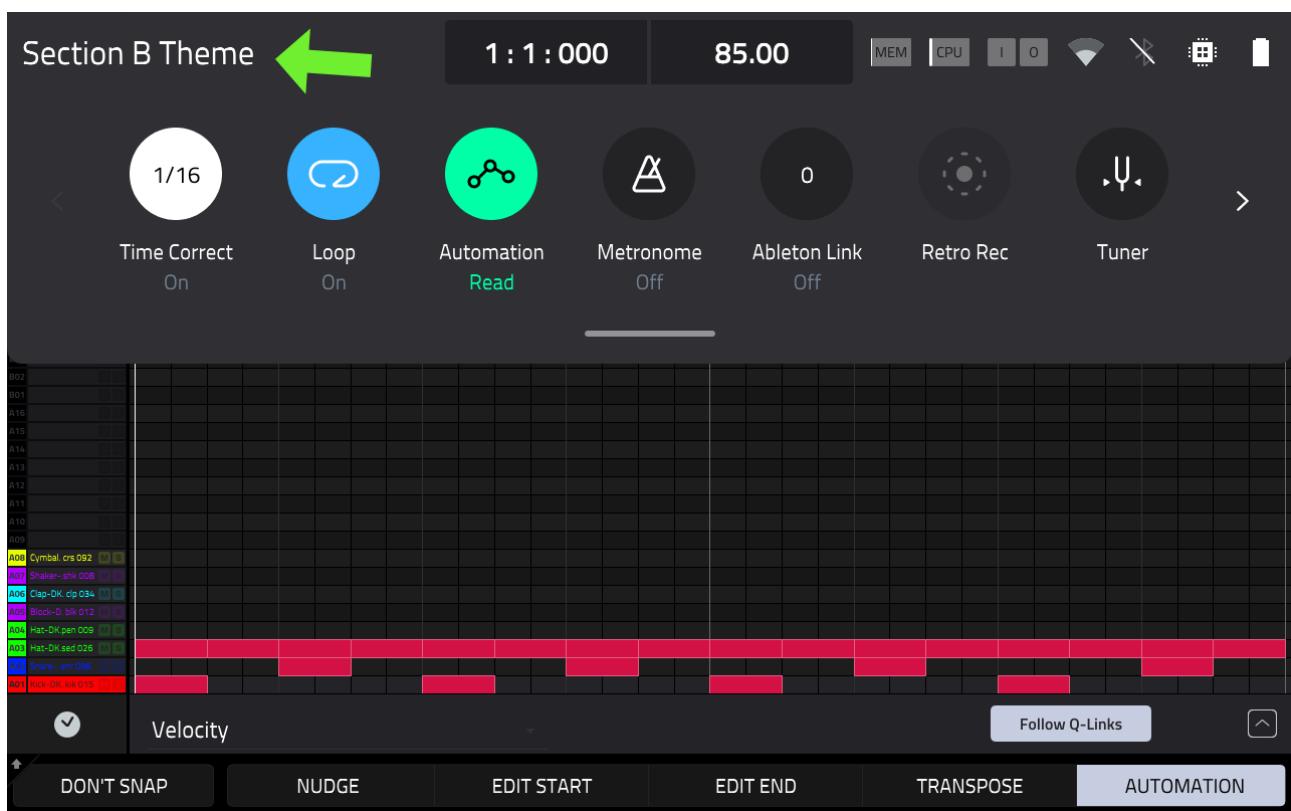
You can 'draw' the events as before, or if you prefer, you can overdub in real time just like you did in Section A when we performed real time recording in MAIN.

Set [**FULL LEVEL**] on, and then hit [**OVERDUB**] + [**PLAY START**] and while the sequences plays, dub in your additional kicks.

To ensure we're all on the same page, let's start working with the same drum pattern which I have pre-loaded into sequence 2 in this project. You may have noticed a small grey bar at the top of every screen:

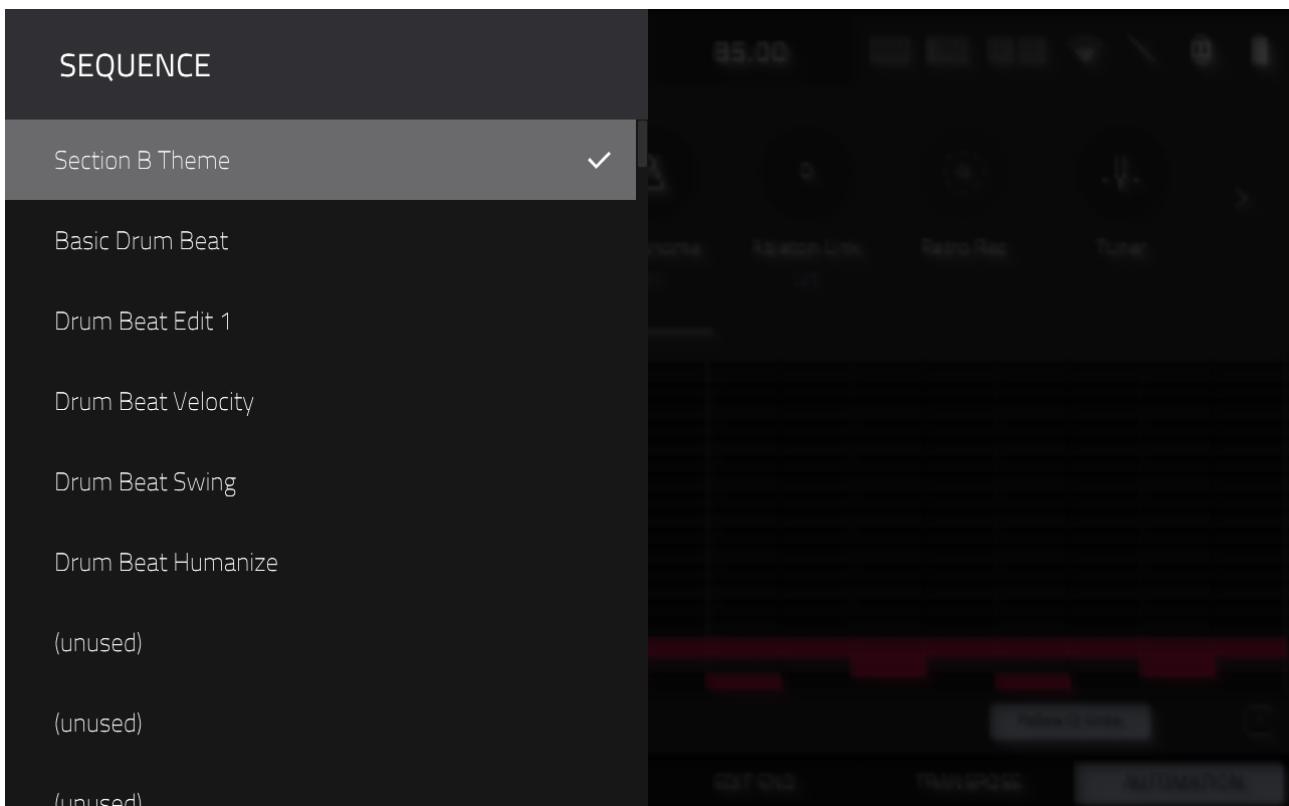


Drag this down to reveal the **pull down menu**:



This contains a whole bunch of 'quick access' shortcuts to various useful functions which we'll be using throughout the course. For the moment, tap

on the current sequence name in the top left of the screen to bring up the **SEQUENCE** select dialog:



Tap on the sequence named '**Basic Drum Beat**' – this sequence features my version of what we have recorded so far. We'll use this for the next editing steps in this tutorial.



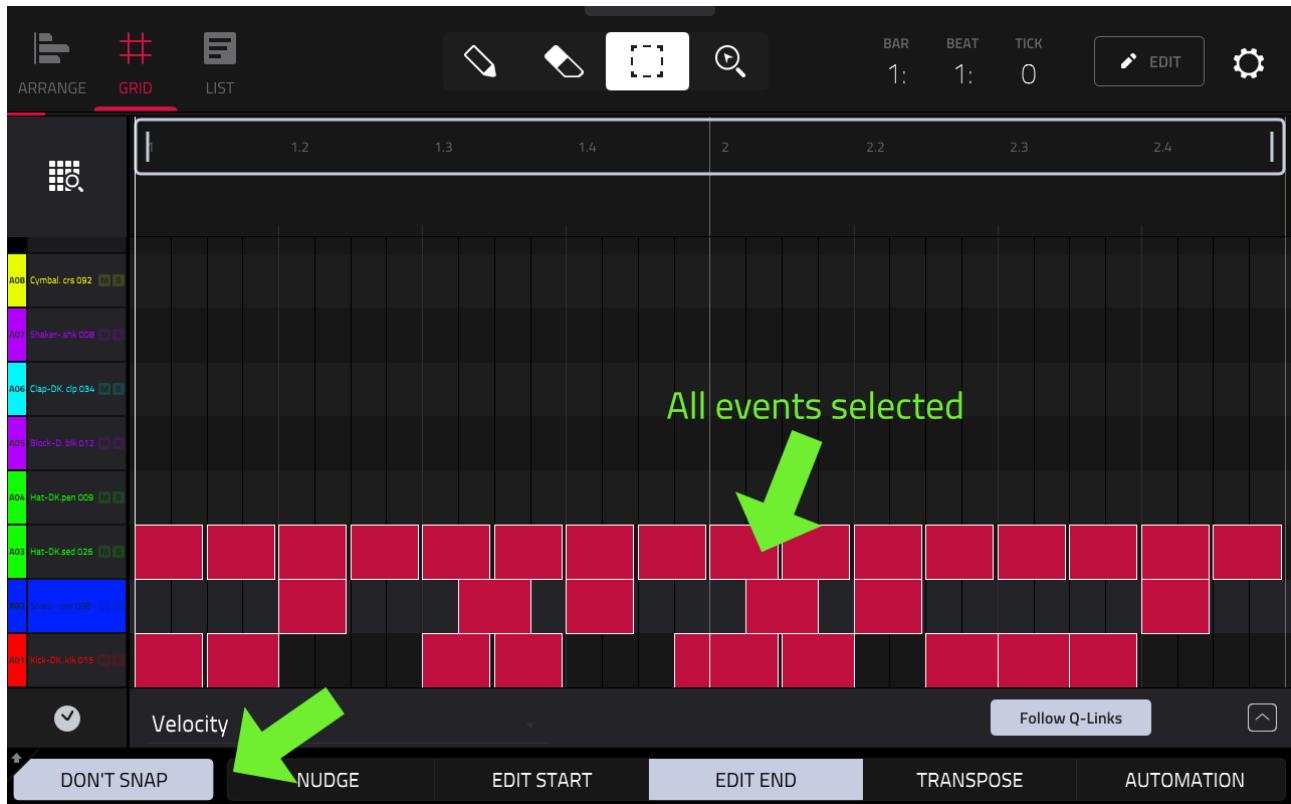
Unfortunately when you change sequence (or whenever temporarily leave and return to GRID VIEW) your previous grid magnification is forgotten so you will have to magnify the grid once again.

DE-CLUTTERING THE GRID

Currently the grid looks very messy and hard to read. One way to free up some visual space is to reduce the length of your events.

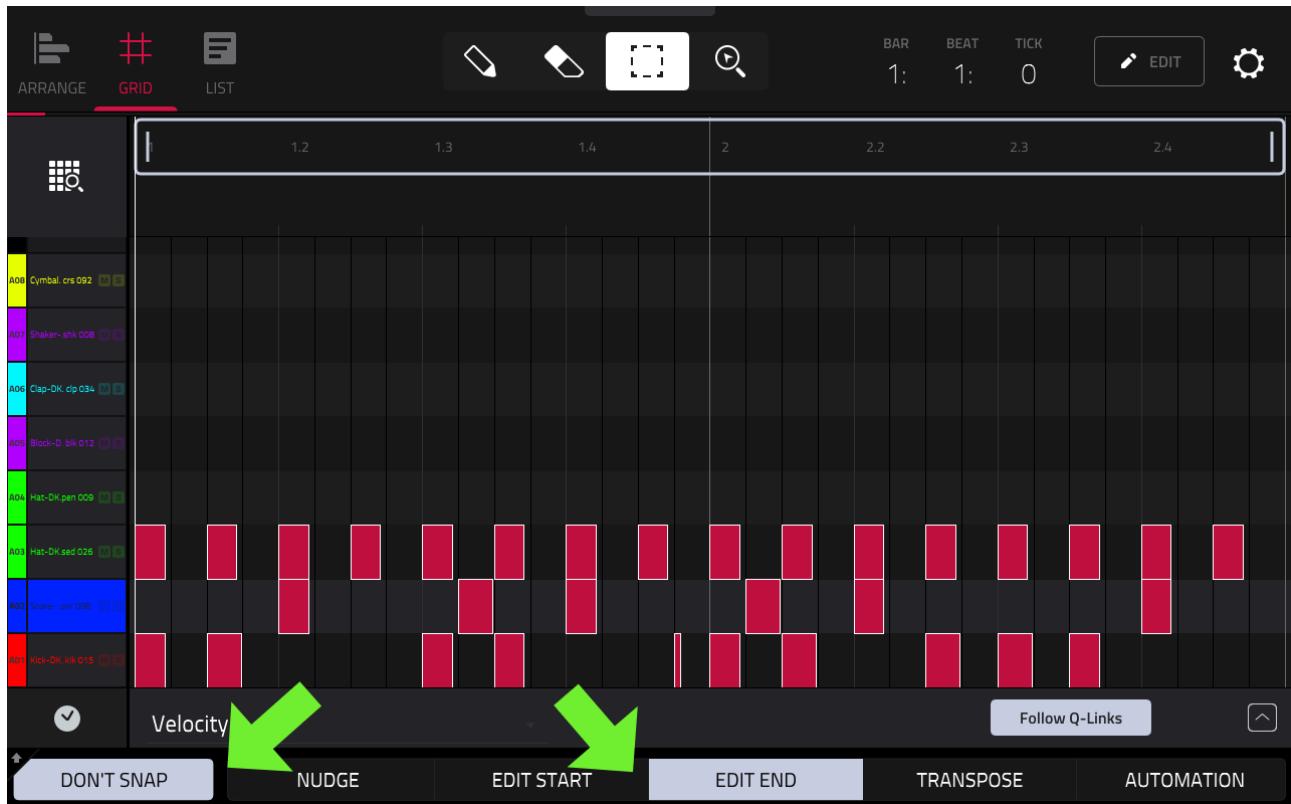
Now when dealing with instrument tracks (e.g. plugins, key groups and MIDI), the length of an event dictates how long a note will play for, but when dealing with drums the note length is completely irrelevant as drum pads are almost always played as 'one shots'; i.e. the entire sample is always played from start point to end point, regardless of how long an event is.

Hold down [**SHIFT**] and you'll see a new 'SELECT ALL' button menu appear at the bottom of the screen. Tap on **SELECT ALL** and all the events on your track will be selected:



Tap on the **DONT SNAP** button so it becomes active (white). This stops all your event adjustments 'snapping' to the nearest quantise point and effectively allows you to adjust your events in single 'tick' resolutions.

Now tap on the **EDIT END** button and begin to turn your (DATA WHEEL) anticlockwise – as you can see, this starts reducing the length of all your events simultaneously in 'tick' resolutions. Set your grid to look something 'less cluttered' like this:

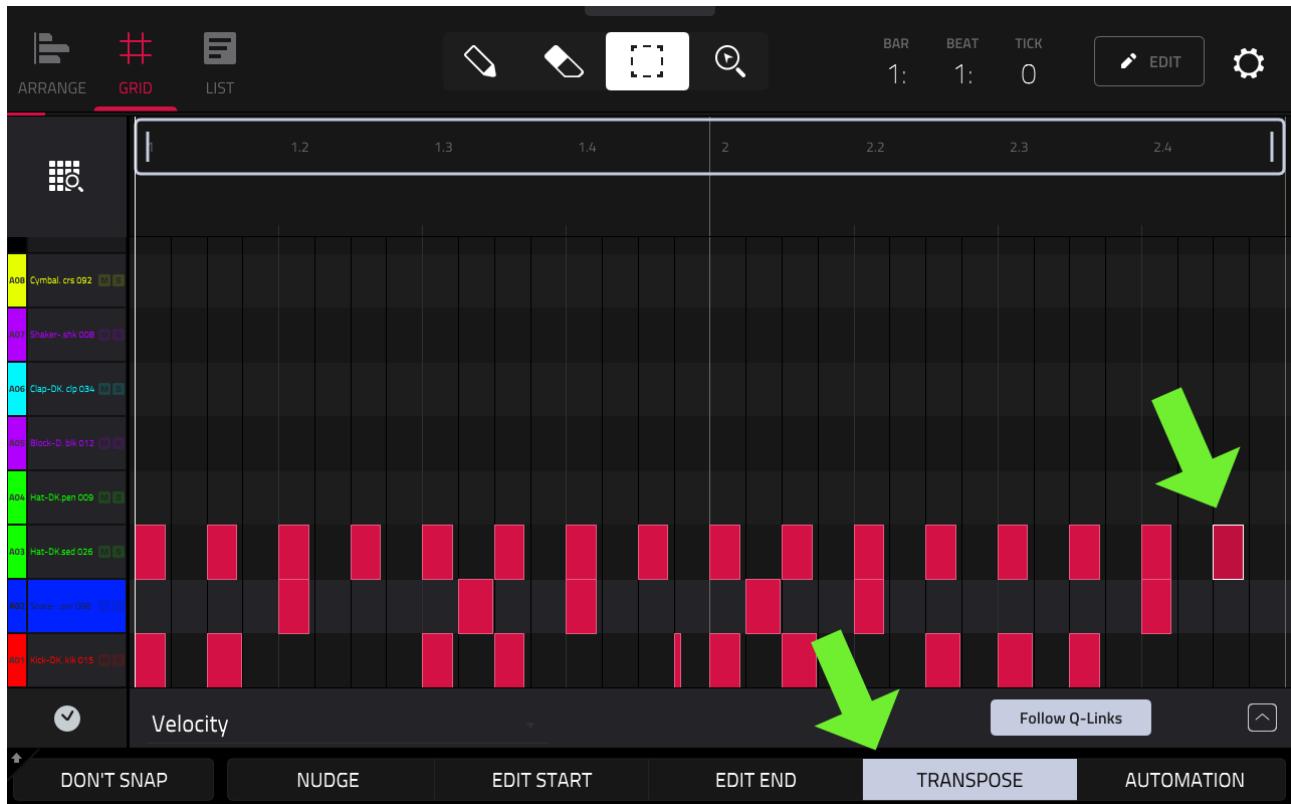


You can now see all the individual events with a lot more clarity. To 'de-select' all the events, choose the **Selection Tool** from the top toolbar and tap anywhere in the grid and all the events will be de-selected.

EDITING EVENTS IN GRID VIEW

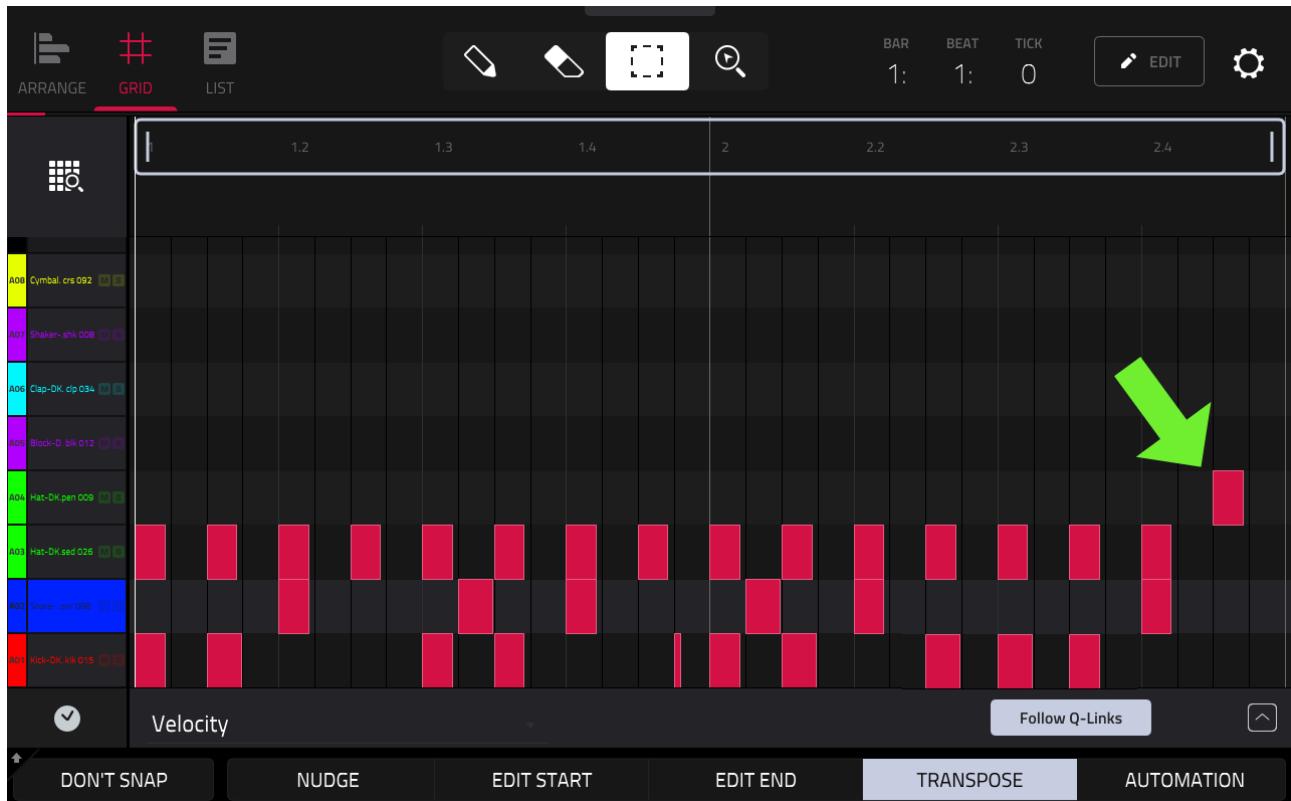
Hit the **DON'T SNAP** button so it is disabled again – all our event edits will now conform into the current timing correct setting (1/16).

Let's replace the last closed hat event with an open hat. With the **Selection Tool** still engaged, tap on that last closed hat at **2: 4: 480**:



Notice how selecting the event adds a thin white frame around it. This indicates that the event is currently 'selected'. Tap on the **TRANPOSE** button at the bottom of the screen.

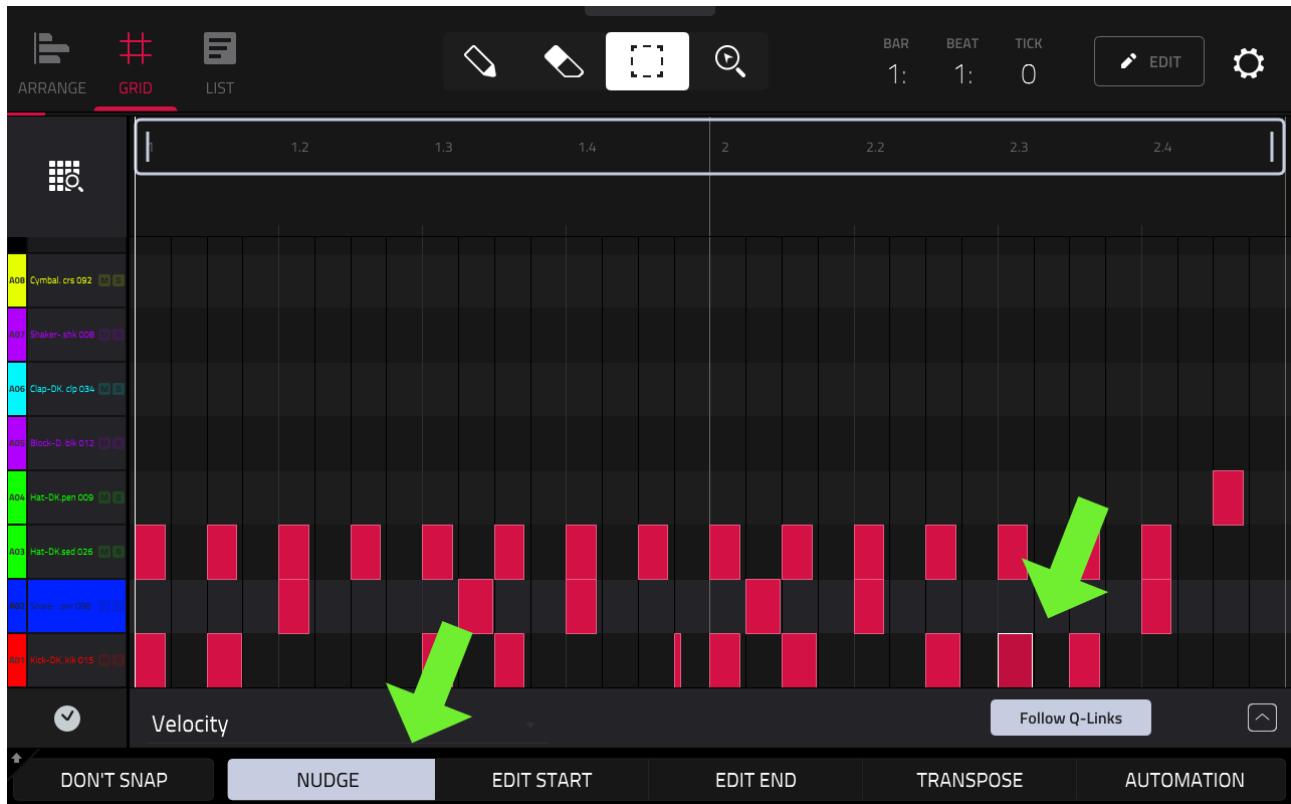
Now tap on the **[+]** hardware button, or turn the (DATA WHEEL) one click clockwise – the selected event is 'transposed' from the pad A03 row up to the next row, pad A04 and hence becomes an open hat.



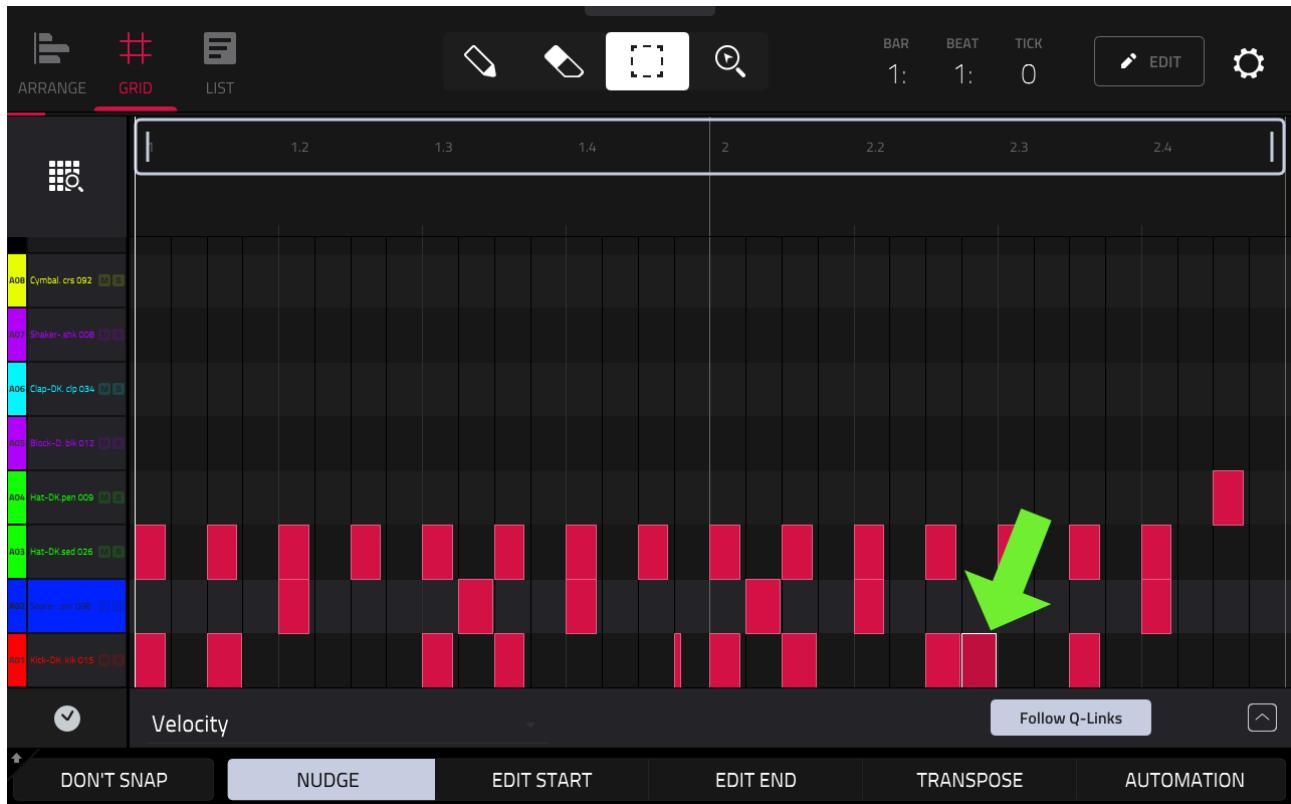
When the 'selection tool' is active, you can also move events with your finger by dragging them around the grid. It can get very fiddly though, especially if you have a busy track and big fingers!

You can also move events horizontally to change the time the event is triggered. Tap to select the kick at **2: 3: 0:**

BO3: SEQUENCING WITH GRID VIEW



Now select the **NUDGE** button and turn your (DATA WHEEL) one click anticlockwise, or use the [-] hardware button:



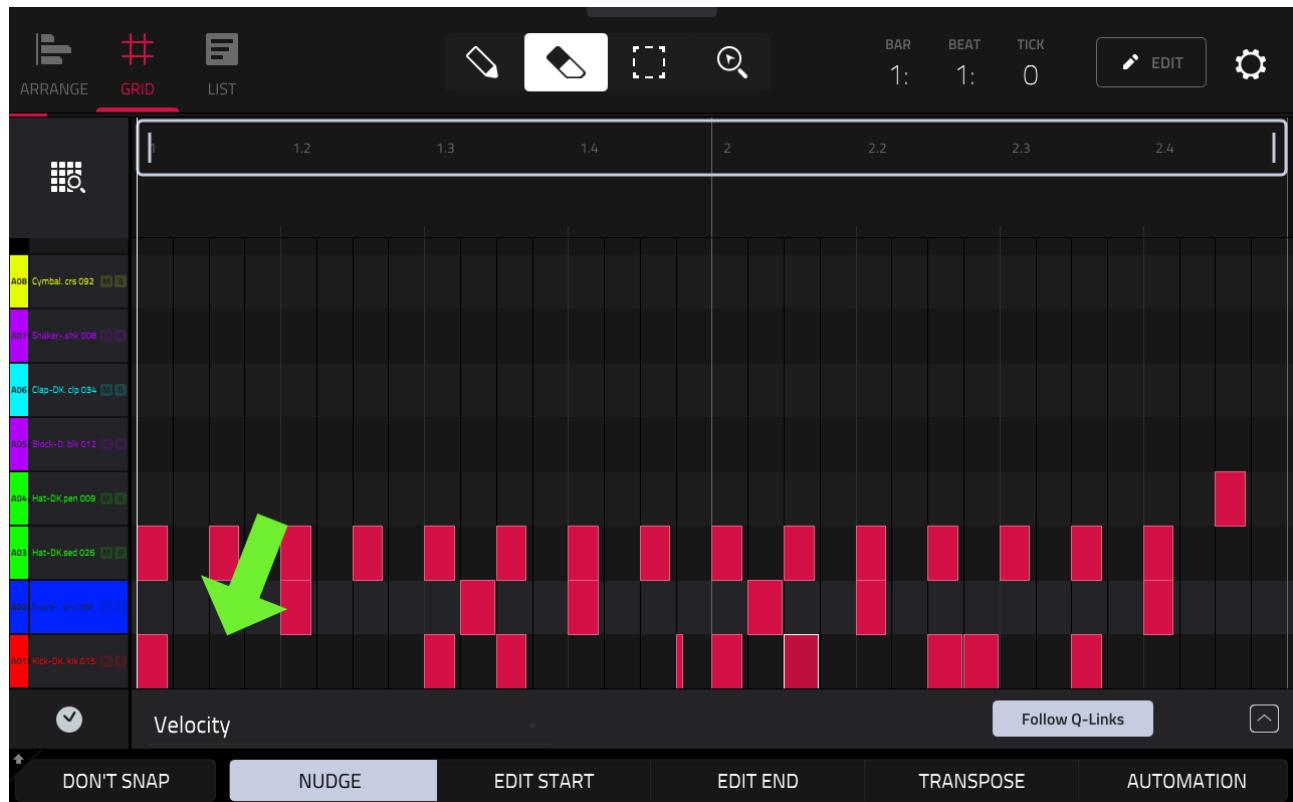
As the timing division is 1/16, this moves the kick back 1/16th of a bar. Hit **[PLAY START]** to preview the beat so far.

DELETING & CUTTING EVENTS

Erasing events in GRID VIEW is easy; let's remove that second kick drum event on the pad **A01** row (at **1:1:480**). Select the **ERASER tool** from the tool bar:

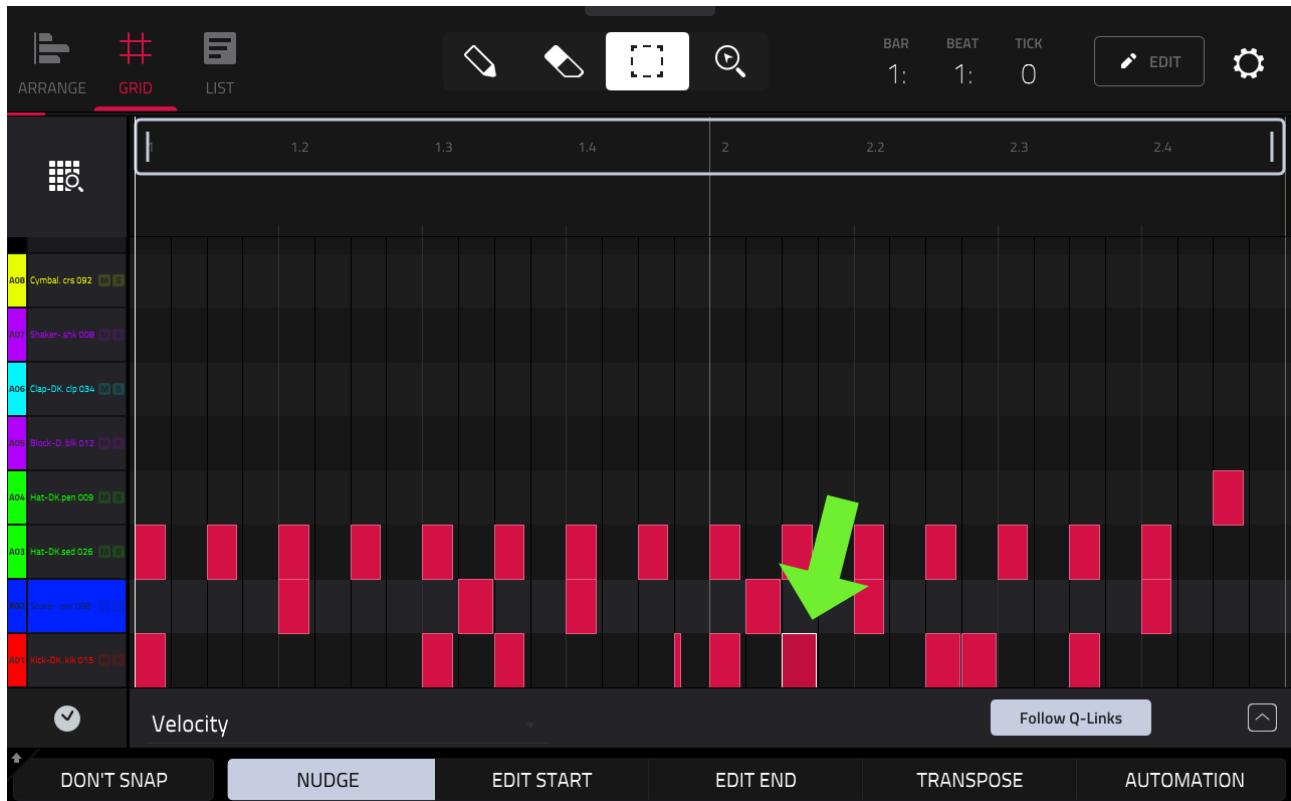


Single tap on the **1:1: 480** kick drum event on row **A01** – the event has now been removed:

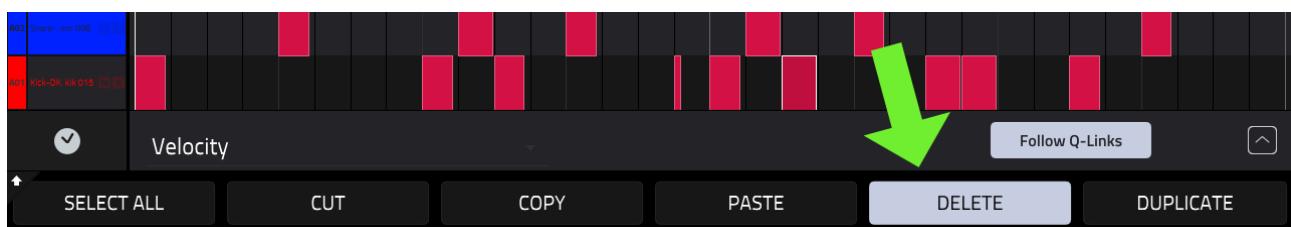


We can also delete with the selection tool. Choose the **Selection Tool** and select the kick at **2: 1: 480**:

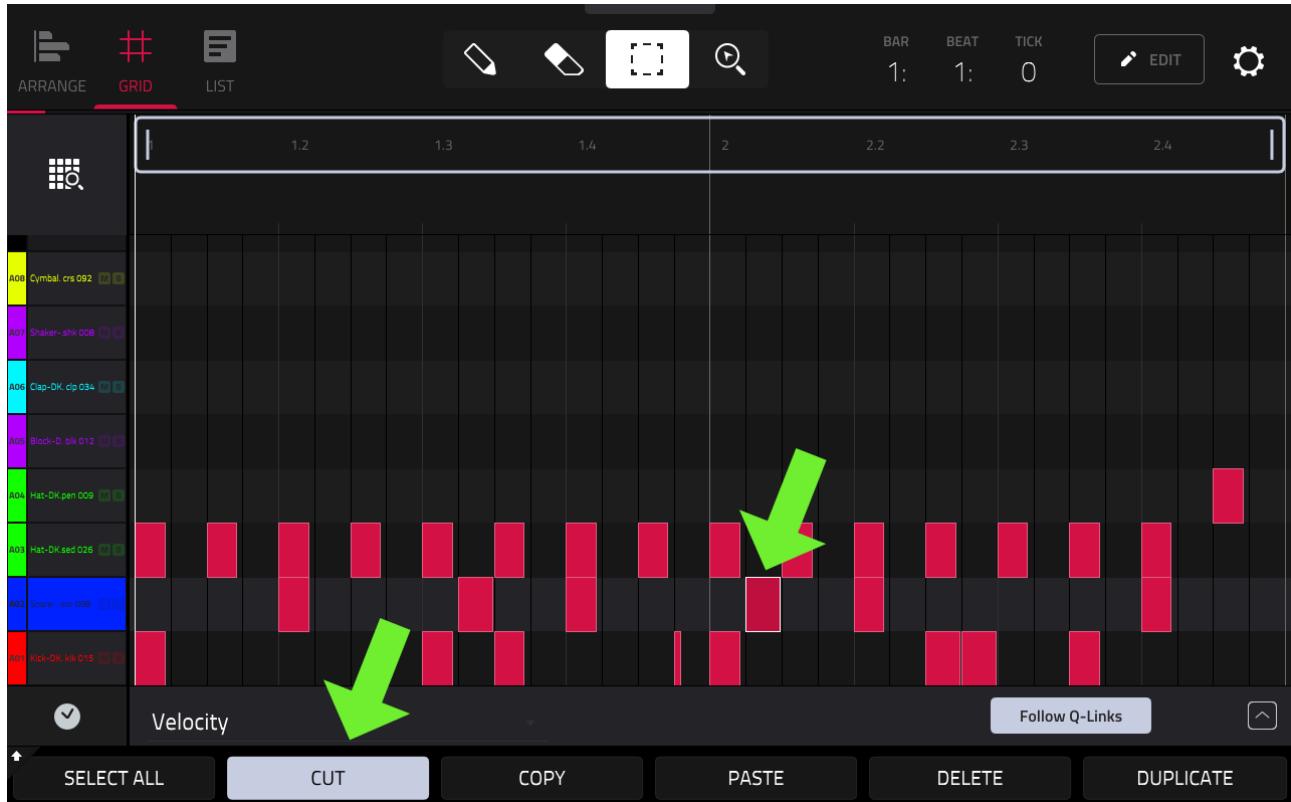
BO3: SEQUENCING WITH GRID VIEW



Hold down [**SHIFT**] to reveal the secondary button menu:



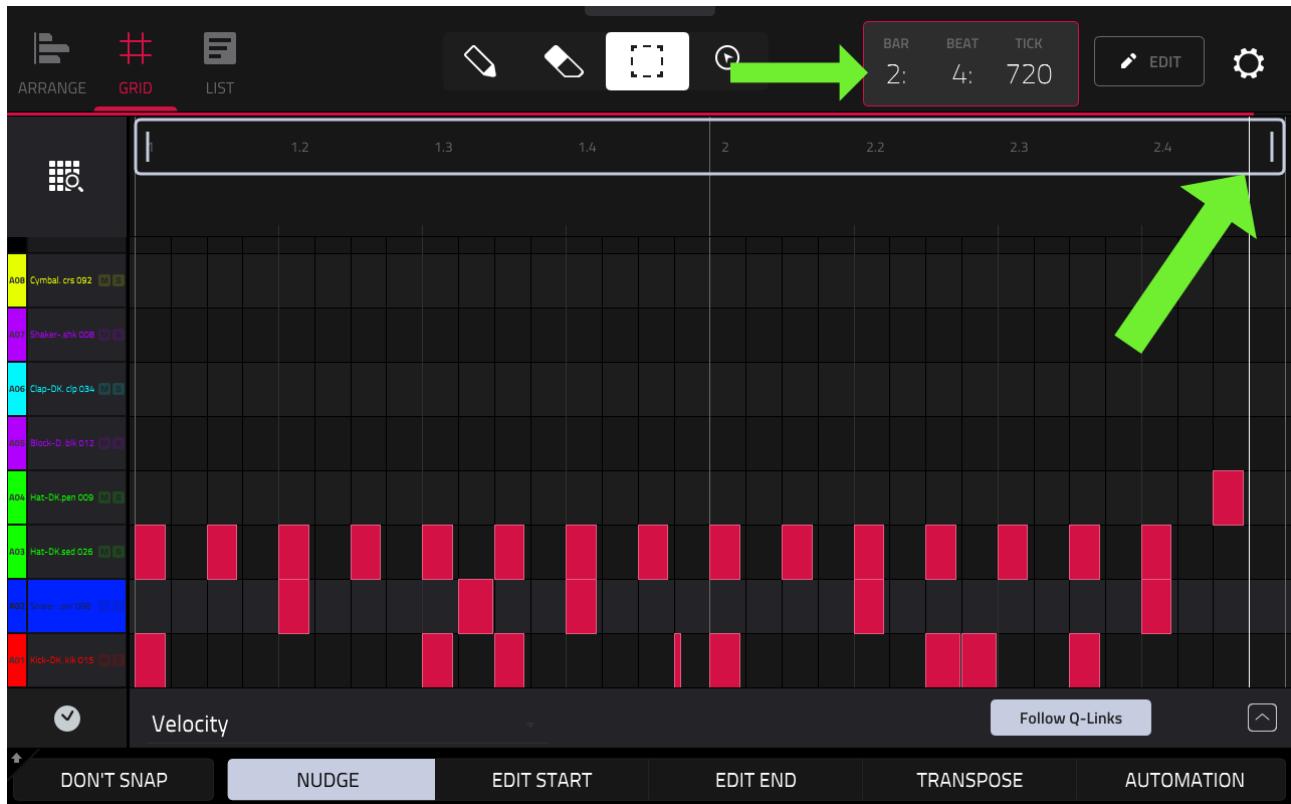
Press **DELETE** to delete the currently selected event (identical to the ERASE tool). Now select the snare at **2:1:240**.



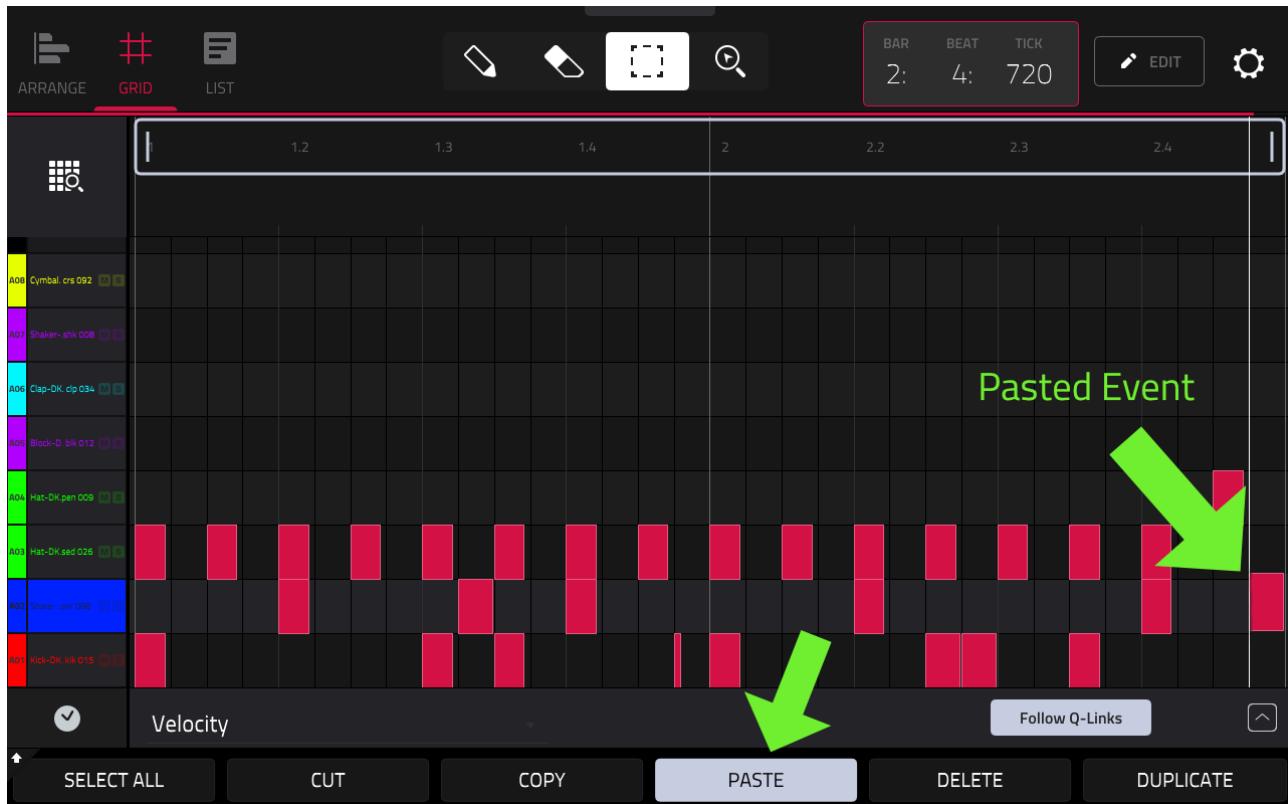
This time select [**SHIFT**] then **CUT**. This will also remove the event from your track, however it will keep a copy of the event on the MPC's 'clipboard'. The advantage here is that the cut event is still available for pasting elsewhere in the grid.

Tap on the time counter in the top tool bar, and move the playhead to **2: 2: 720**. To do this, turn the (DATA WHEEL) to move in "beats" increments then hold down [**SHIFT**] while turning the (DATA WHEEL) to move in units of the current time division (currently, **1/16**). Alternatively you can directly tap in the timeline bar and the playhead will jump directly to the time position you point to.

BO3: SEQUENCING WITH GRID VIEW



Now hold down [SHIFT] and press **PASTE** to paste the previously 'cut' event at the current playhead position:



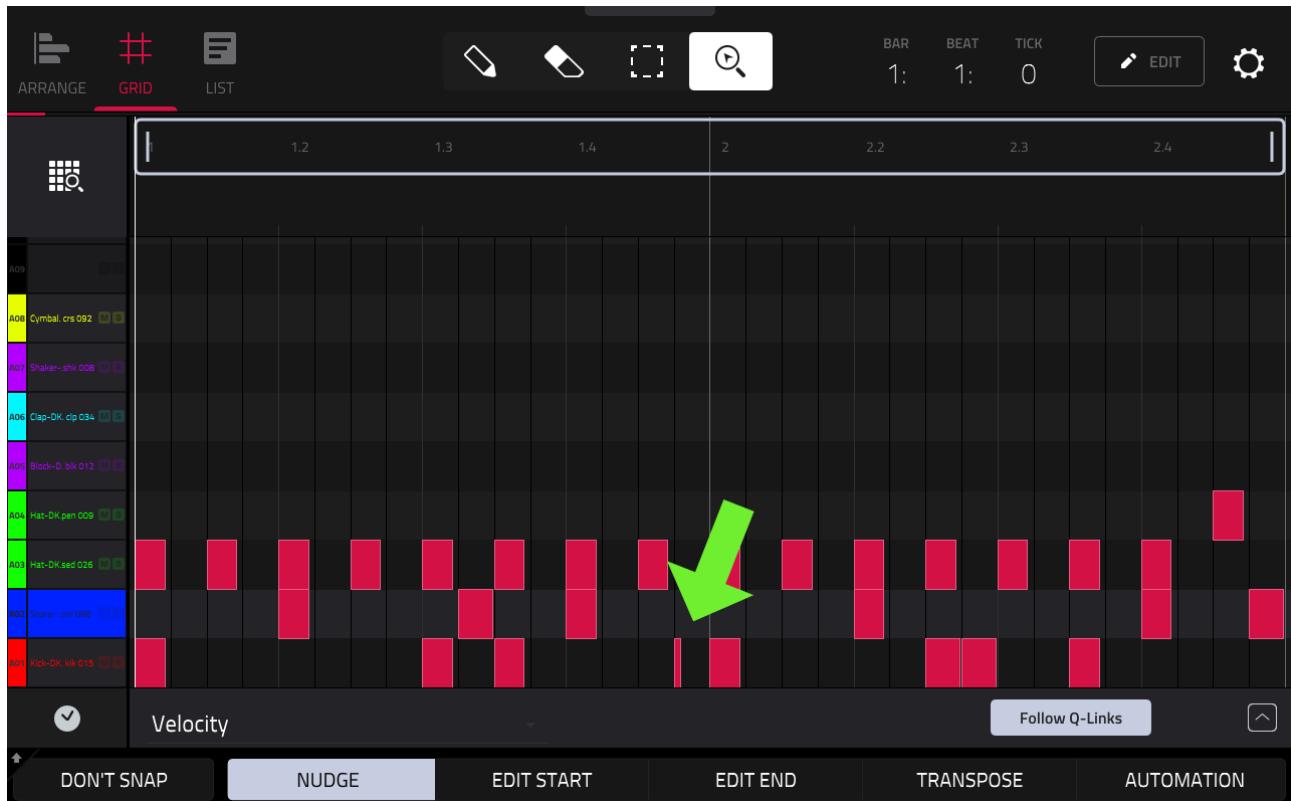
Hit **PLAY START** to preview the beat. Use the **pull down menu** to select my version in sequence 3, **Drum Beat Edit 1**.

EDITING VELOCITY

The colour of an event in GRID VIEW indicates the **velocity** of the event, with red representing the hardest hit (a velocity of 127). All our events are currently red, simply because any event added directly to the grid using the pencil tool is always entered at full velocity, and all the events we overdubbed in real time were played using [FULL LEVEL].

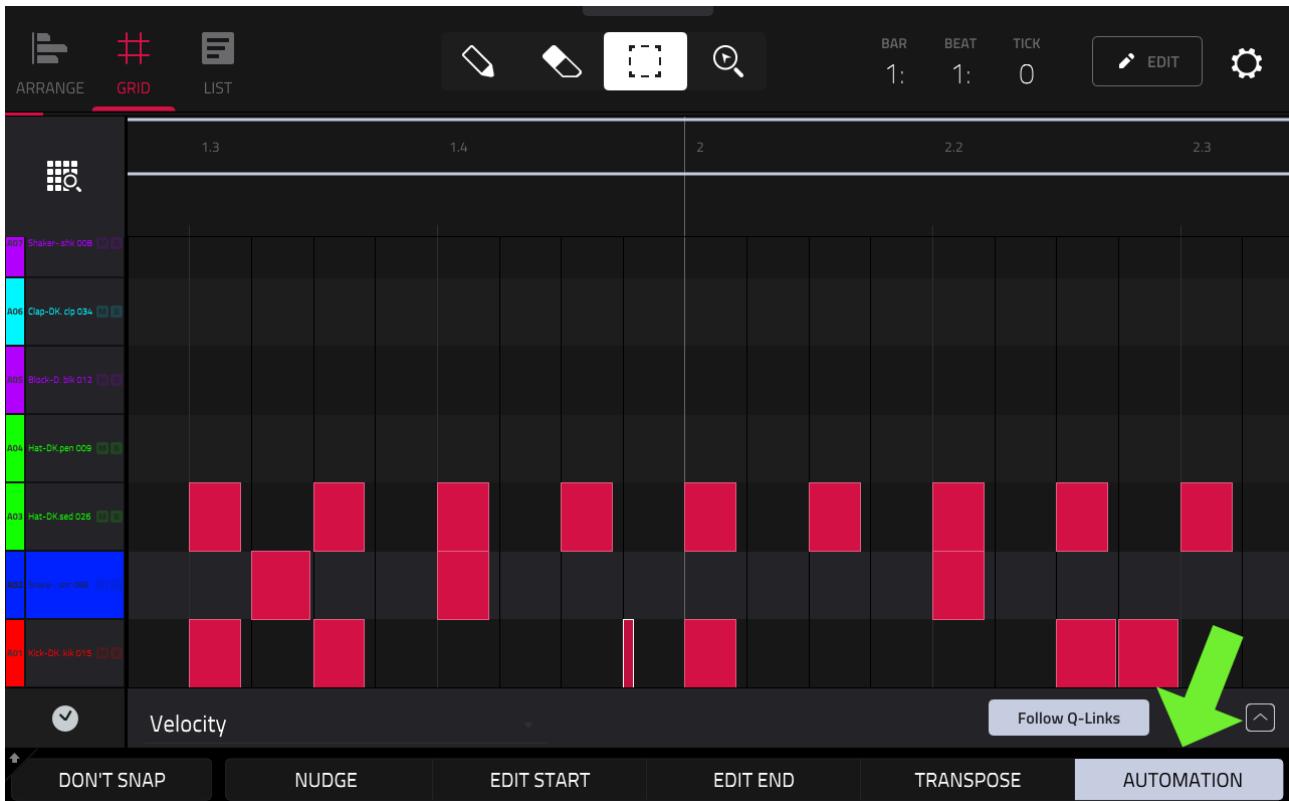
We can easily change the velocity of any existing event. Let's change the velocity of the kick event just before the start of the second bar:

BO3: SEQUENCING WITH GRID VIEW

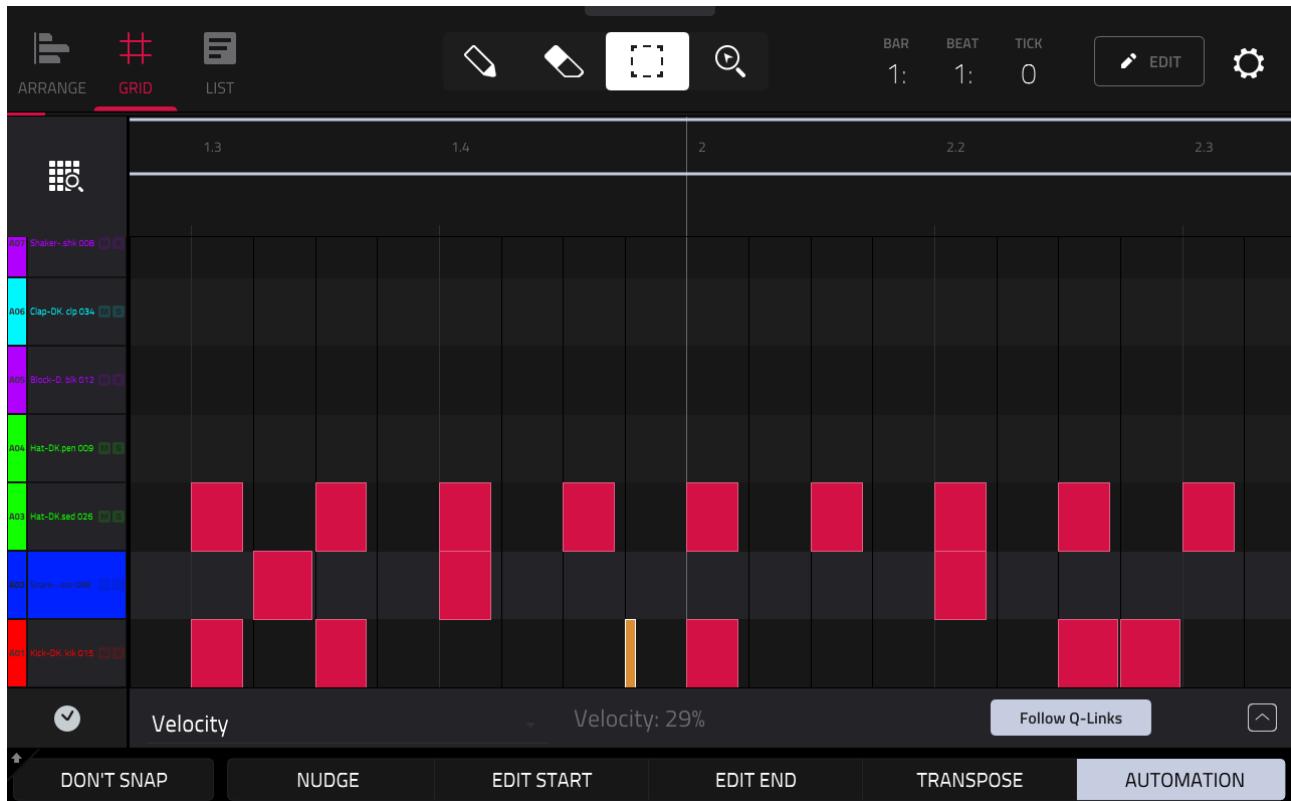


First zoom in for a closer look using the magnify tool and 'pinch & zoom' as before. Now use the **Selection tool** to select the kick event and press the **AUTOMATION** button in the bottom menu bar:

BO3: SEQUENCING WITH GRID VIEW

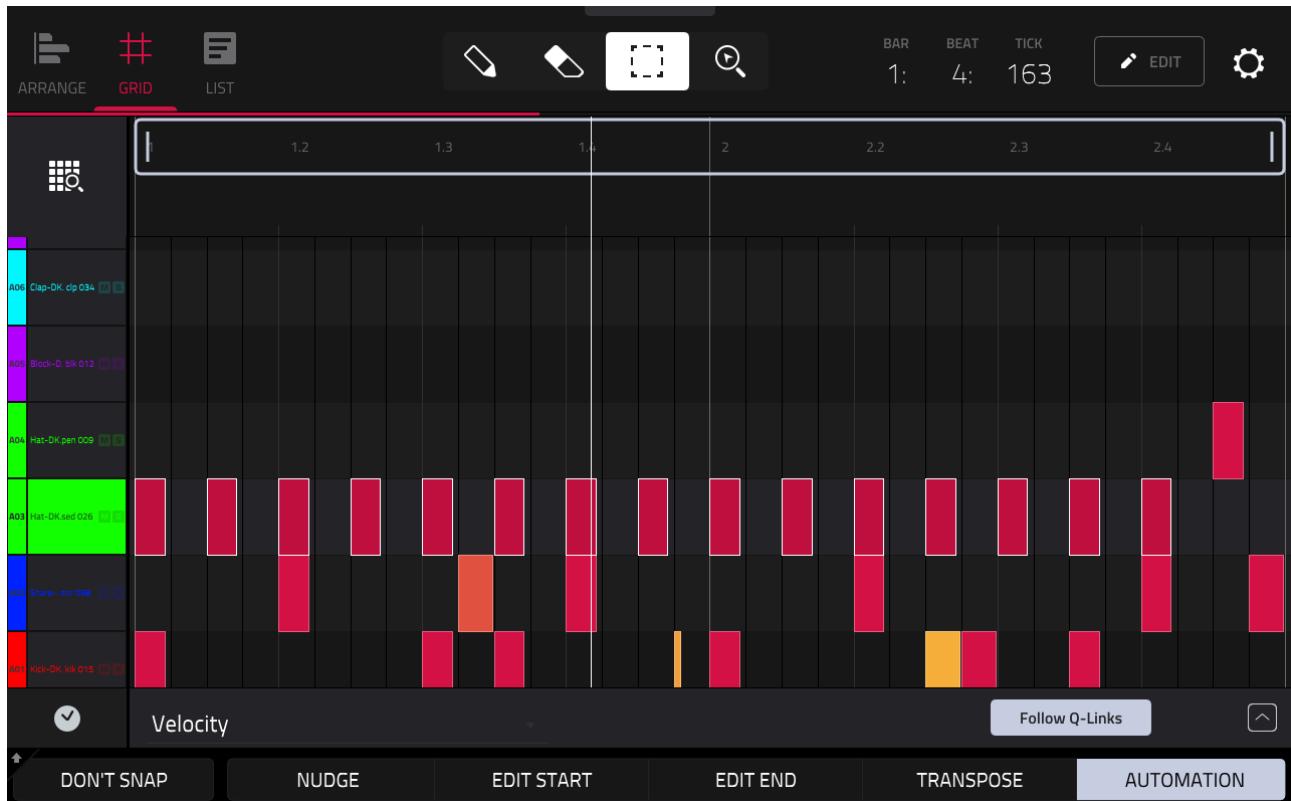


Now begin turning the (DATA WHEEL) anticlockwise; you should see '**Velocity: xx**' appear on the bottom bar, which indicates the velocity for this event is decreasing from 127. As you decrease the velocity, the event turns from red to orange to yellow – set a **velocity of 29%**.



Hit [**PLAY START**] to hear how the lower velocity on this kick makes it more of an 'incidental' hit, rather than an 'in your face' kick. We often refer to these kinds of notes as 'ghost' hits.

Let's do the same for that kick at **2: 2: 480**. After selecting that kick and with AUTOMATION still enabled, reduce the velocity with the data wheel until it's pretty soft, try **velocity: 21%**. Repeat this for the snare at **1: 3: 240**, this time with a velocity of around **70%**:



MODIFYING VELOCITIES OF MULTIPLE EVENTS

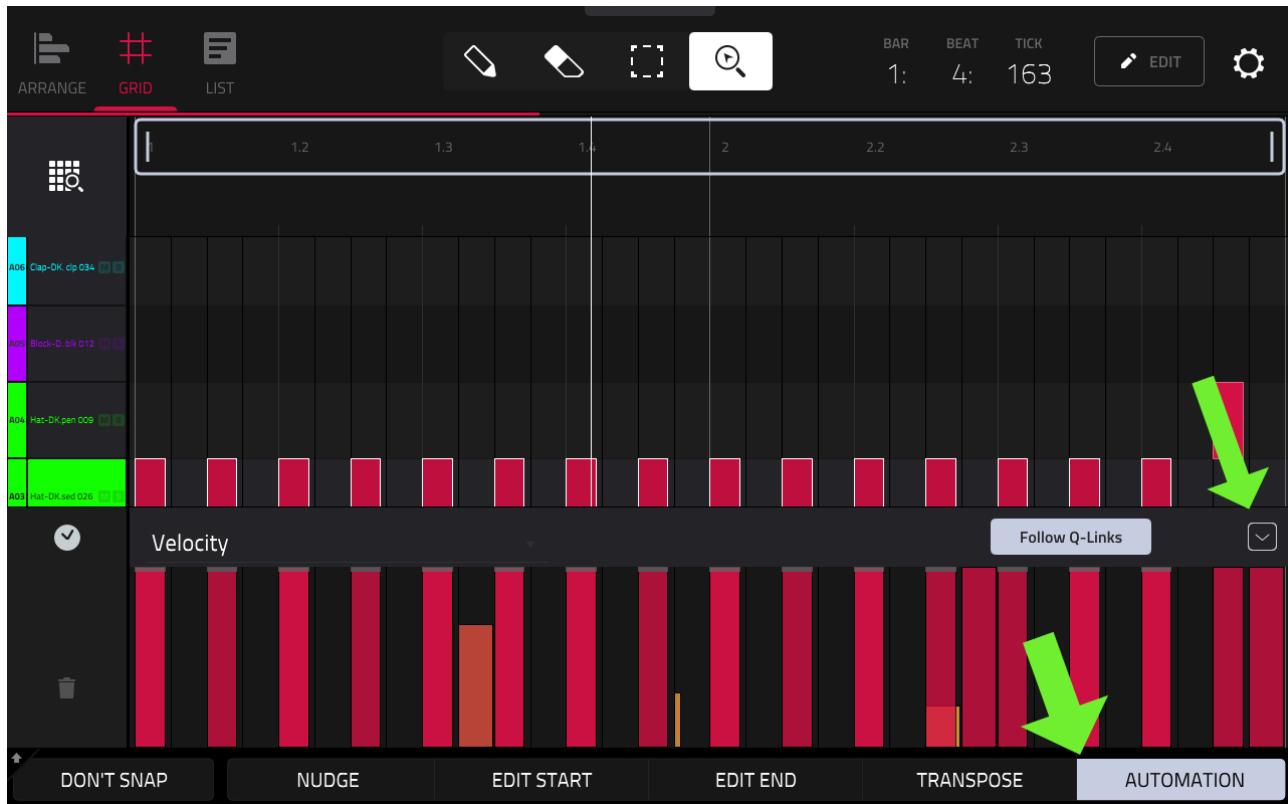
You can also edit the velocity of multiple events. Previously I mentioned the GRID settings, and that we needed **Hitting Pad Selects All Events** to be 'ON'.

Now hit each pad in your kit and observe the grid; each time you hit a pad, all the events in its row become selected. So to select all the [A03] closed hi hats just hit pad **[A03]**:

BO3: SEQUENCING WITH GRID VIEW

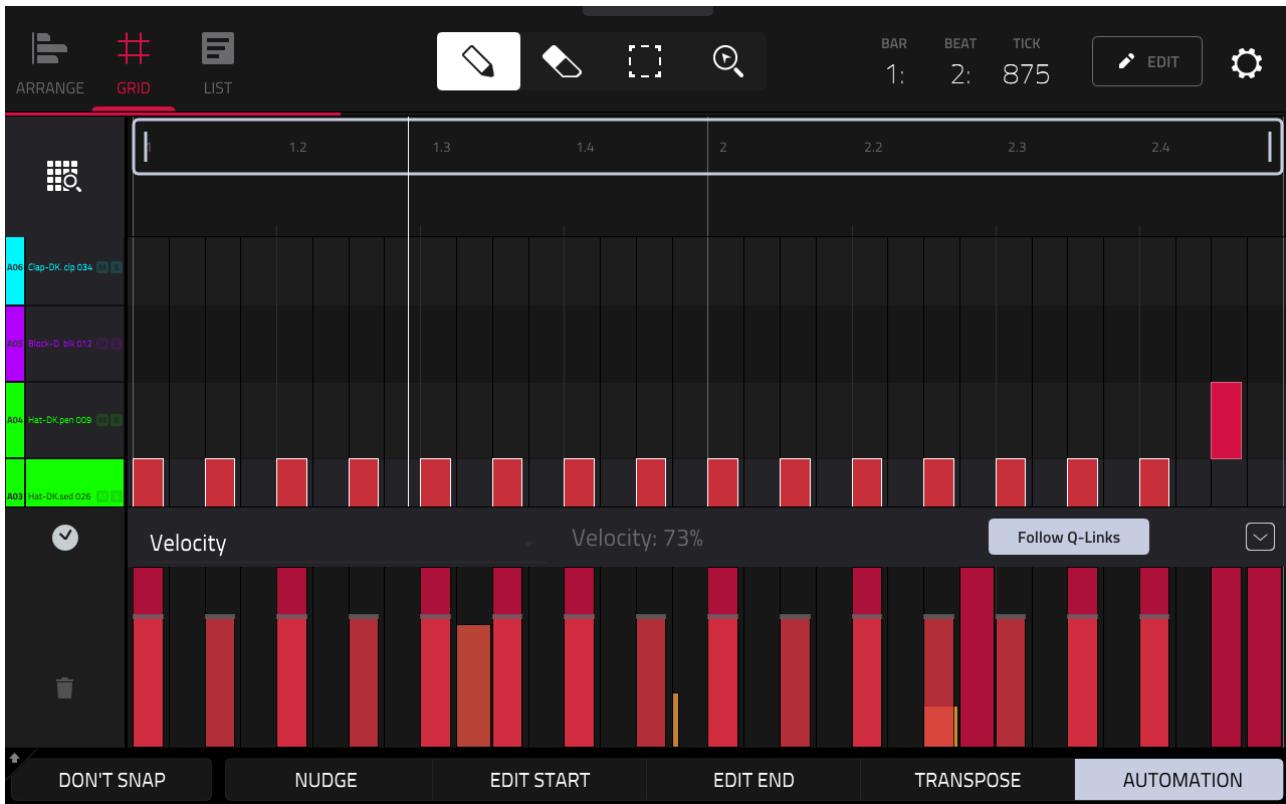


Just above the **AUTOMATION** button you'll see an **upward arrow icon**; click on this to expand the **automation lane**:



This shows the velocity for each event graphically in a solid vertical block. The taller the block, the higher the velocity. You can tap and drag any individual velocity block to decrease the velocity of the associated event.

With all close hat events selected along with the **AUTOMATION** button engaged you can turn the (DATA WHEEL) to adjust the velocity of all events equally. Or you can hold your finger on the velocity blocks and drag the velocity of all events up/down. Try setting a **velocity** for all A03 events to **73%**:



Closed hats usually sound better when their velocities have some variance. One way to achieve this is to choose the **pencil tool**, place your finger just above the velocity block for the first closed hat at **01: 01: 0**, and now 'draw' in a 'wiggly' line across the velocity lane – notice how the hi hat velocities are now different colours and different heights:

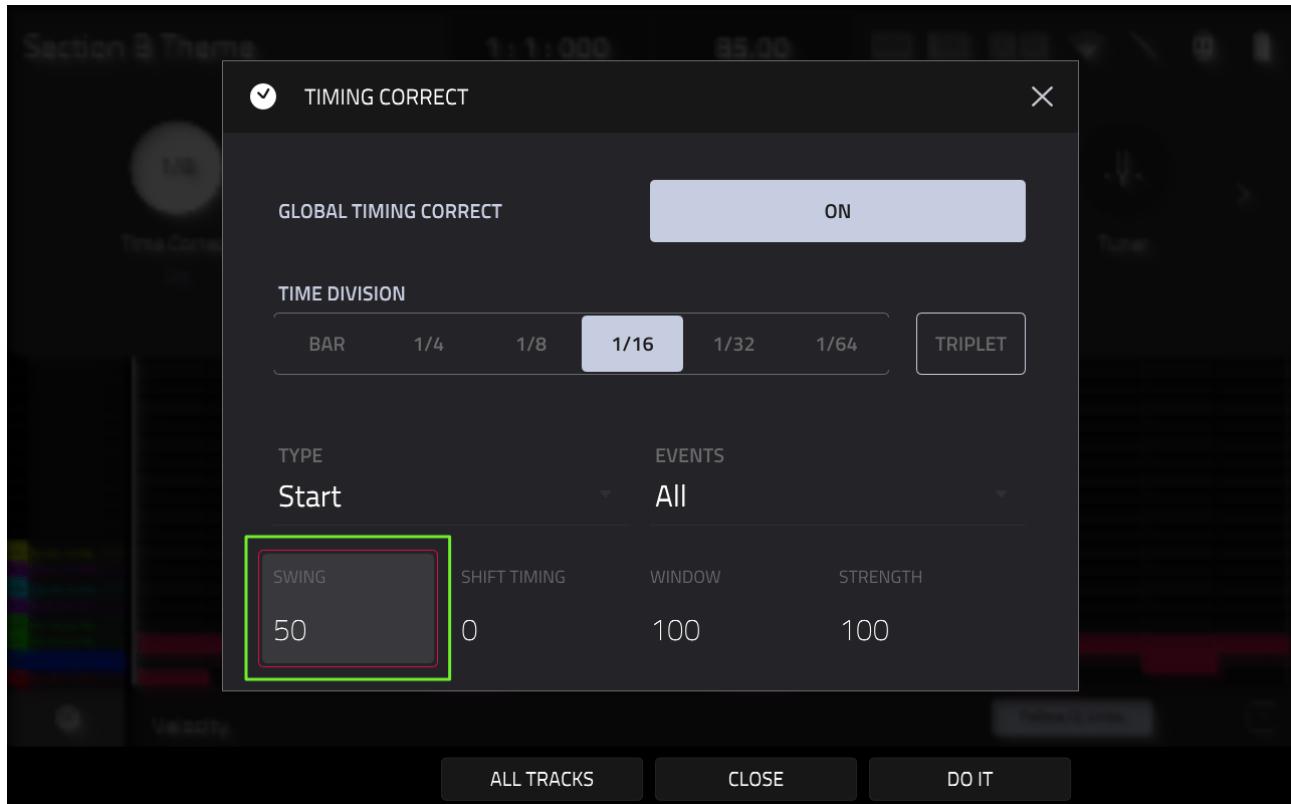


Hit [**PLAY START**] to hear the beat with the velocity changes.

APPLYING SWING

Everything we've programmed so far has used a specific timing correct division to apply a 'quantise' to all our events. While this makes your drums sound really tight it can also make it sound a little stiff and 'straight'. One way to loosen up your drums and add some additional groove is to use **swing**.

From the pull down menu select **sequence 4** (Drum Beat Velocity) for my version of the beat so far. Tap on the **TC settings icon** at the bottom left of the screen:



Ensure your **Timing Division** is set to **1/16** and you've set **EVENTS: ALL**.

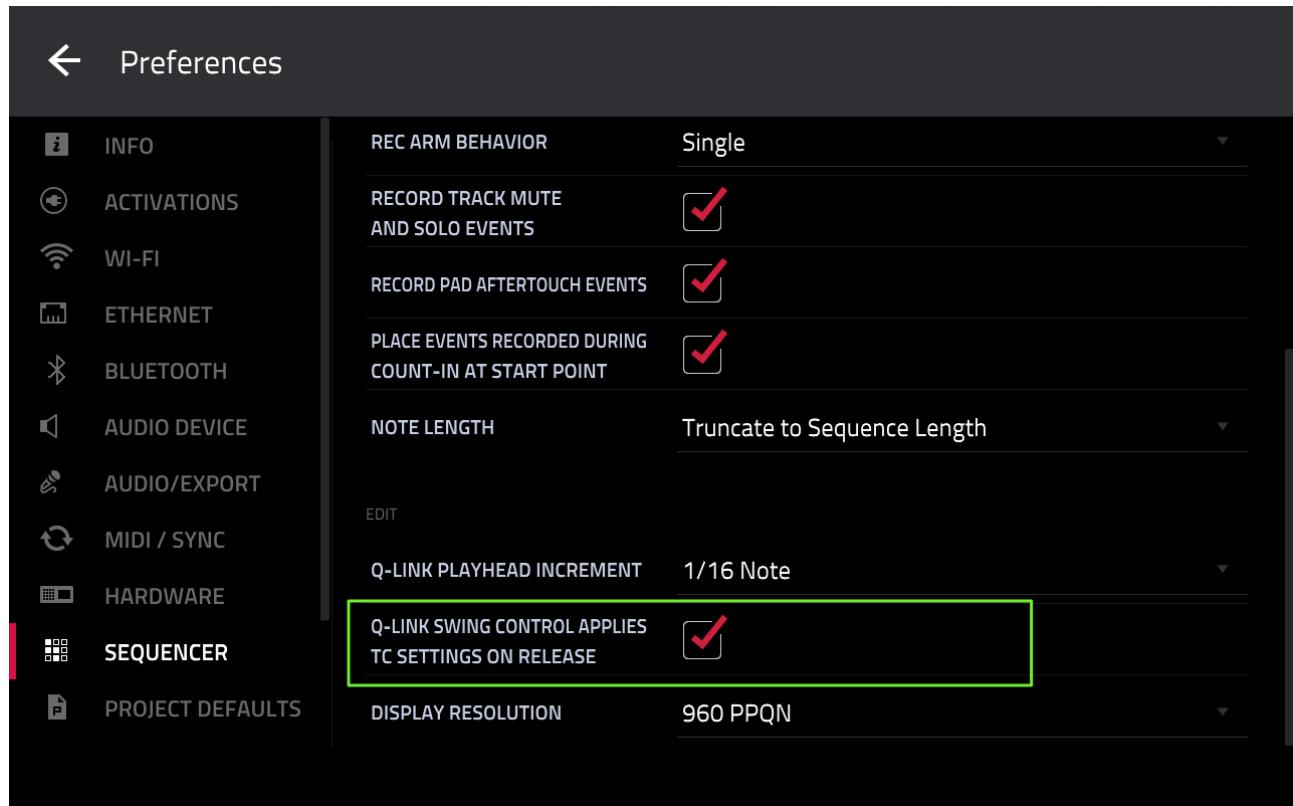
Notice the **SWING** parameter; by default this is set to **50%** which effectively means 'no swing'. Setting this to any value higher than 50% will begin to add increasing amounts of swing to your track, be it the events you record in real time, or retrospectively to existing beats.

Try a **SWING** of **67** and hit **DO IT** to apply 67% swing to all the events in your track. Hit **[PLAY START]** to hear how your beat sounds a little different. Use **[UNDO]** and **{REDO}** to view the differences in the events:



The 'swung' version of the beat sounds very different to the 'straight' version, despite only a couple of kicks and snares changing position. It's not necessarily better or worse, but by changing the swing you give your beat a completely different feel.

We can repeat the above process again to experiment with different swing settings, but let's instead use the 'real time' swing method. First, another preference change. Head over to **[MENU] > PREFERENCES > SEQUENCER** and check the option **'Q-LINK SWING CONTROL APPLIES TC SETTINGS ON RELEASE'**:

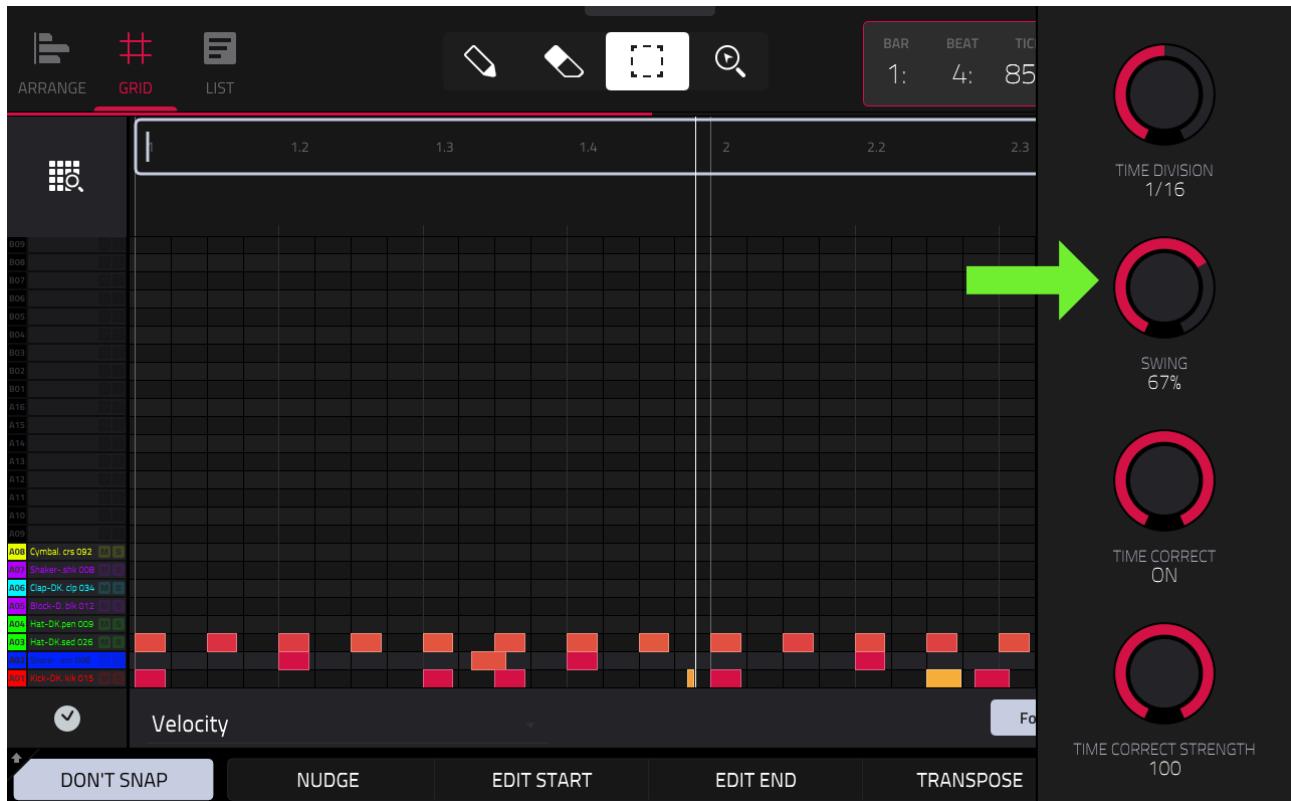


To view all the available Q-LINK assignments in GRID VIEW, hold down the **[Q-LINK]** button:

BO3: SEQUENCING WITH GRID VIEW



You'll see that there is a dedicated Q-LINK for SWING (Q-LINK 6); this is in the **second Q-LINK bank, second Q-LINK from the top.**



This is one of the weird Q-LINK pages that assigns vertical Q-link dial columns to horizontal rows, so unless you are on an MPC X with the OLED labelling over each Q-LINK, you'll definitely benefit from having the Q-LINK pop up window.



*If you did previously turn off the Q-LINK pop up you can re-enable this from the **Q-LINK** page - simply select **SHOW QLINK STATUS WHEN TOUCHED**.*

Now with your hand on (Q-LINK 6), hit [**PLAY START**]. While the sequence plays, start turning the Swing Q-LINK anti-clockwise and watch the value in the Q-LINK pop up; upon releasing the Q-LINK the new swing setting is

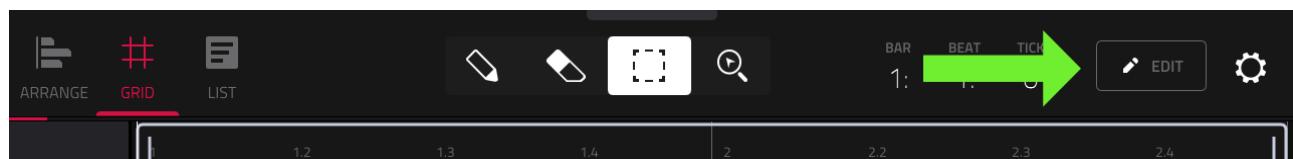
immediately applied to sequence, allowing you to hear the changes in real time.

Releasing the swing Q-LINK not only applies the current 'swing' setting, it actually applies **all** the current settings in the **TIMING CORRECT** dialog, so if you're not getting the results you expected, tap on the T.C. parameter in the toolbar and check your TC settings; especially the 1/16th time division and 'EVENTS: ALL'.

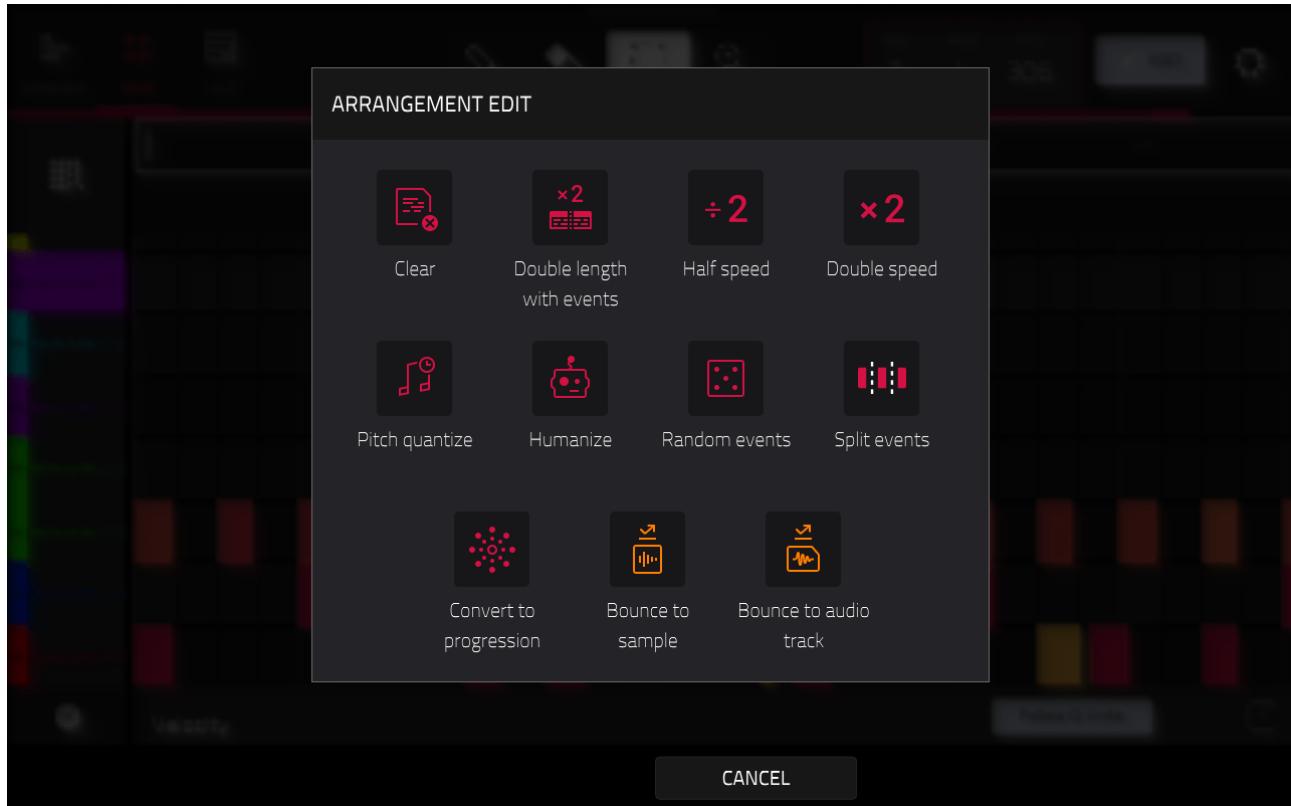
Try going back to a **Swing** of **50%** and release the Q-LINK to return the beat to its straight, 'un-swung' groove. Just keep on trying different swing percentages until you hear something that sounds good to your ears. I settled on a **Swing** of **62%**.

USING A NATURAL FEEL WITH HUMANISE

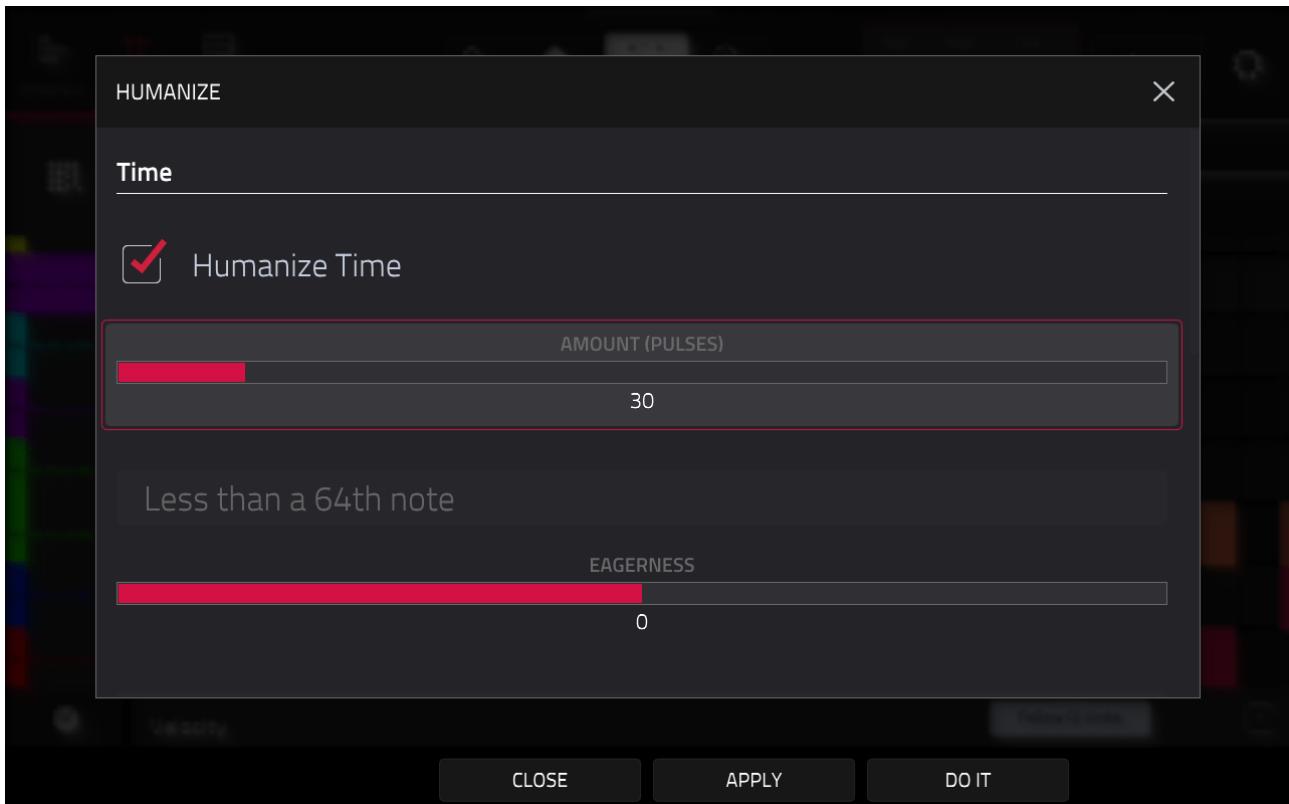
Still sounding a bit stiff? Let's add some random 'human' slop to our drums! Now tap the **EDIT** pencil icon in the top toolbar:



This opens the **ARRANGEMENT EDIT** screen:



Select **Humanize**.



Humanize can be used to add some subtle changes to a number of different parameters in your current track.

The first option is to **Humanize Time**; this will randomly change the timing of events to give them a more human feel. Let's keep this subtle, so choose an **AMOUNT** of **10**.

Next is the **EAGERNESS**. If we leave this at 0, some events will just be randomly shifted a little bit forward and backward from the original positions (with some staying where they are), giving, as Akai puts it, just a 'general sloppiness'.

Increasing or decreasing the EAGERNESS parameter is going to actively change the overall feel of the groove, with positive values forcing notes to

play after the beat, giving a more dragged feel, while negative amounts will cause events to play before their original position in the quantise template, giving a more rushed feel.

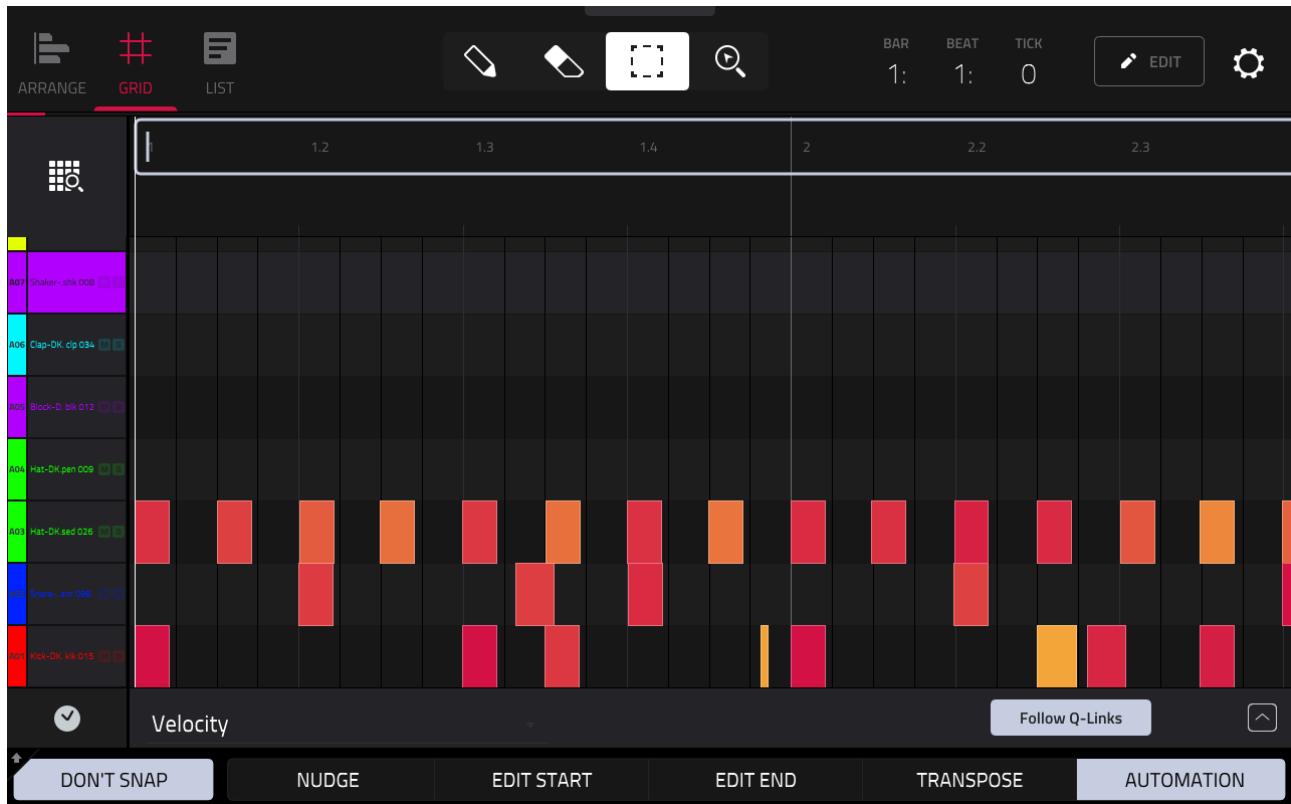
For this example, I just want to add some human texture but retain the general groove, so just keep **EAGERNESS** at **0**.

Scroll upwards to the next options. As this drum performance is using 'one shot' samples the length of each event is irrelevant, so just ignore the '**Length**' option.

Activate the checkbox for '**Humanize Velocity**'. This is going to introduce some variances in the velocity of all events, again making it sound a little more 'human' and less 'programmed'. Set this to **30**.

Finally you can use the **Input Filter** to only apply the changes to selected events only, but to humans the entire track, leave this unchecked..

Hit **DO IT** and return to **GRID VIEW**:



Hit [PLAY START] to hear the difference. Use [UNDO] and {REDO} to view the differences in the events before and after. Humanize is randomly generated (within the maximum defined parameters) and hence will give slightly different result each time, so your events will differ slightly to mine.

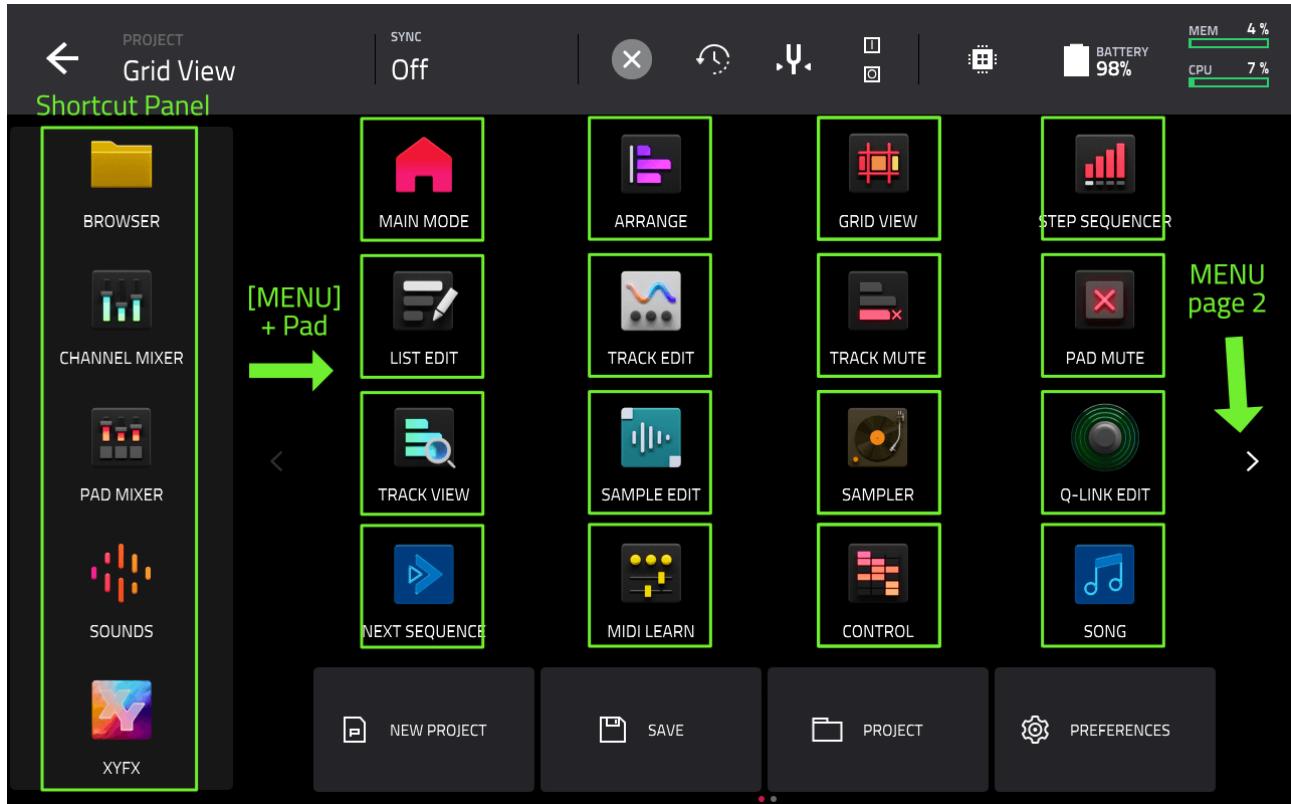
This sounds much better, but in the next chapter we'll head back to the drum kit itself and make some changes to the pads to provide even more natural feel.

You can check out my final version of the beat by selecting **sequence 6, Drum Beat Humanize.**

WORKSHOP: MENU CUSTOMISATION & SHORTCUTS

You're probably realising that using the MPC can involve a lot of jumping around different screens. If you're lucky your MPC model will have dedicated hardware buttons for all your favourite locations (including 'secondary' buttons via the [SHIFT] key), but it's always nice to have lots of alternative options and the MPC has these in abundance.

I previously mentioned that you can hold down the [**MENU**] button and tap a pad for quick navigation to certain screens which avoids using the touchscreen. Each pad shortcut is determined by the layout of the icons in the **MENU** screen:



The sixteen icons highlighted in green above mirror the grid layout of the sixteen rubber pads, so holding down **[MENU]** and **pad 10** will take you directly to the **TRACK EDIT** screen. **[MENU]** + **pad 15** will take you to the **GRID VIEW** screen.

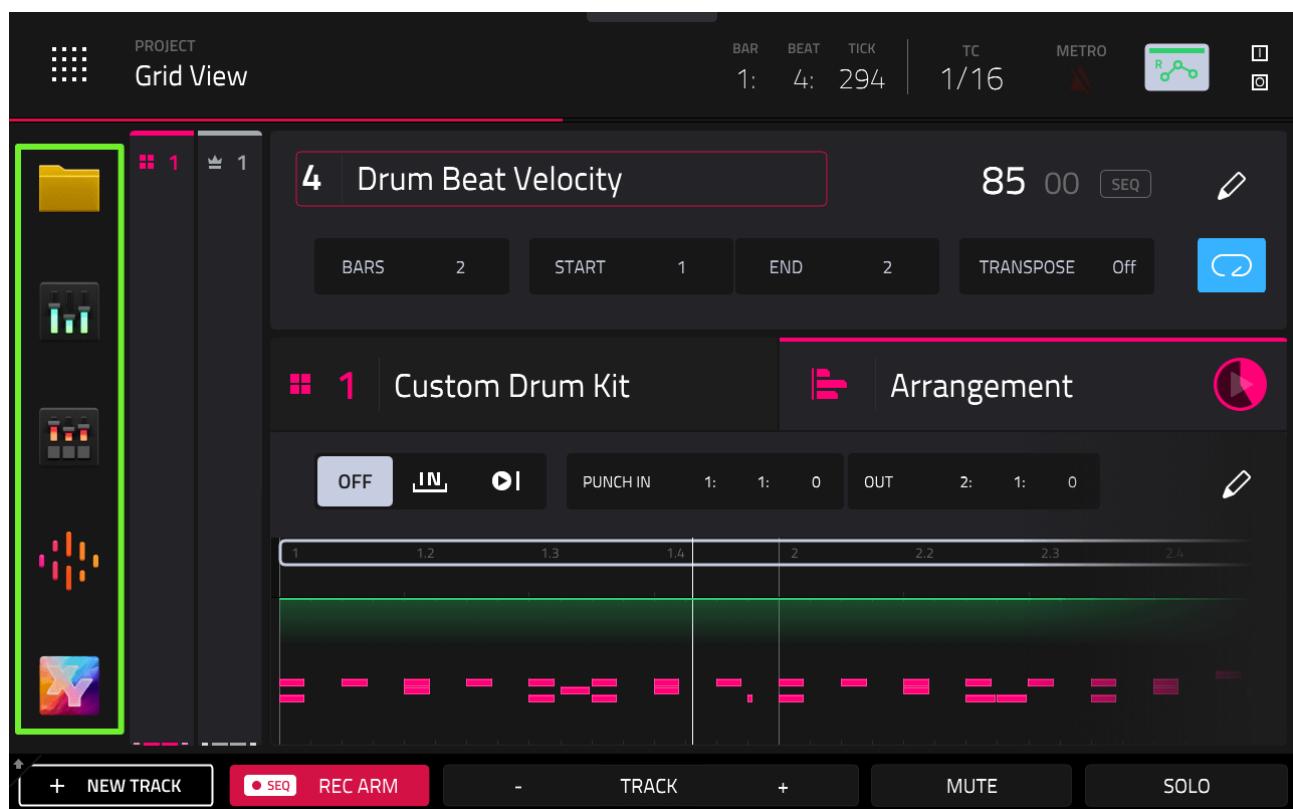
The layout of the MENU screen can be easily customised, so you are free to move the icons around to create your preferred layout. Simply hold down on any icon and drag it to a new location. Once you move an icon, it will also automatically adopt the relevant '**[MENU]** + pad' shortcut.



Remember, there are some shortcuts buried away on the second menu screen – this page is revealed by tapping on the right arrow icon. To drag an icon from this second page, drag it to the left

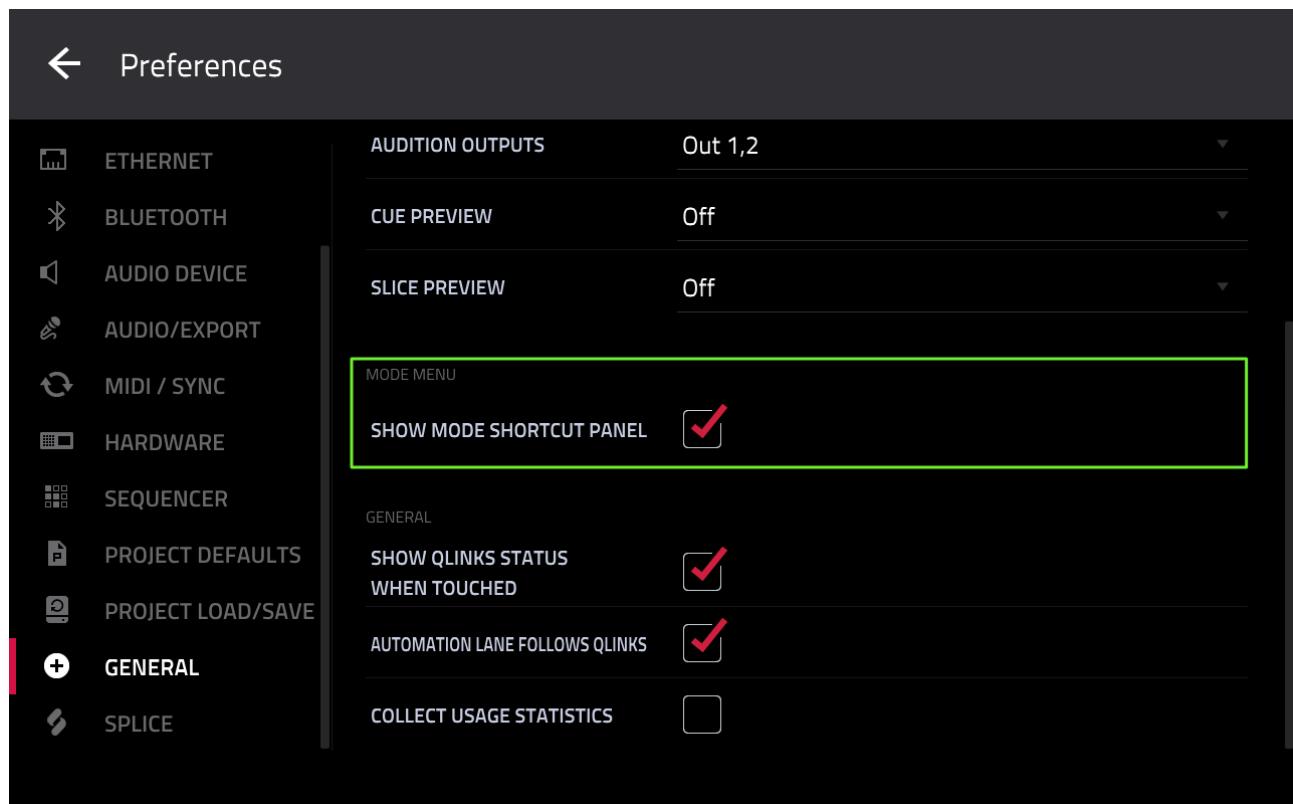
arrow and wait until the MPC automatically switches you back to the main MENU screen.

In addition to the sixteen icons that reflect the sixteen pads, you can also drag icons from the bottom tray (NEW PROJECT, SAVE etc) as well as from the left hand column (BROWSER, CHANNEL MIXER etc) – this is the same vertical column that appears in **MAIN**:

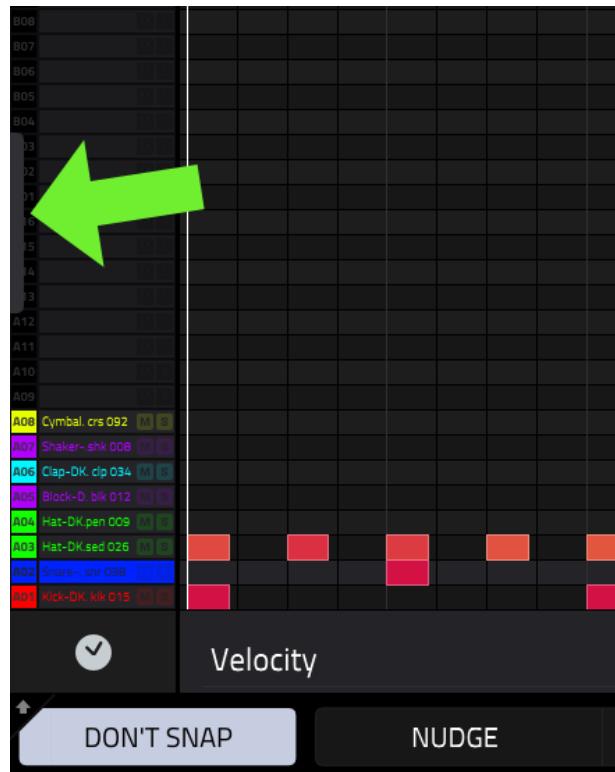


In fact, let's discover a third shortcut navigation option which is also directly linked to the layout of the icons in MENU ; the **Shortcuts Panel**.

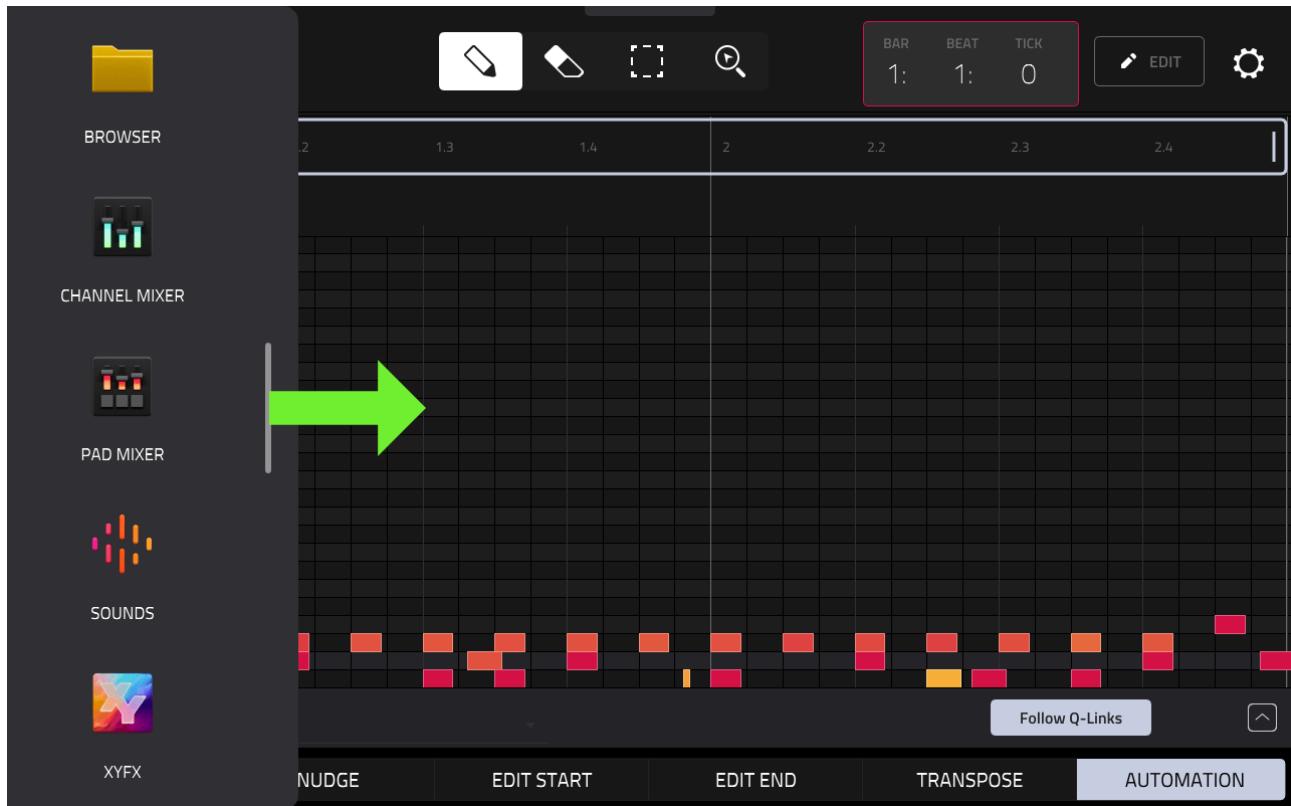
First a new preference setting. Go to [MENU] > **PREFERENCES** > **GENERAL** and check **SHOW MODE SHORTCUT PANEL**:



The shortcut panel is a menu that can be dragged out from the left hand side of most screens, similar to the way the top pull down menu functions. For example, go back to **GRID VIEW** and look closely at the left side of the screen:

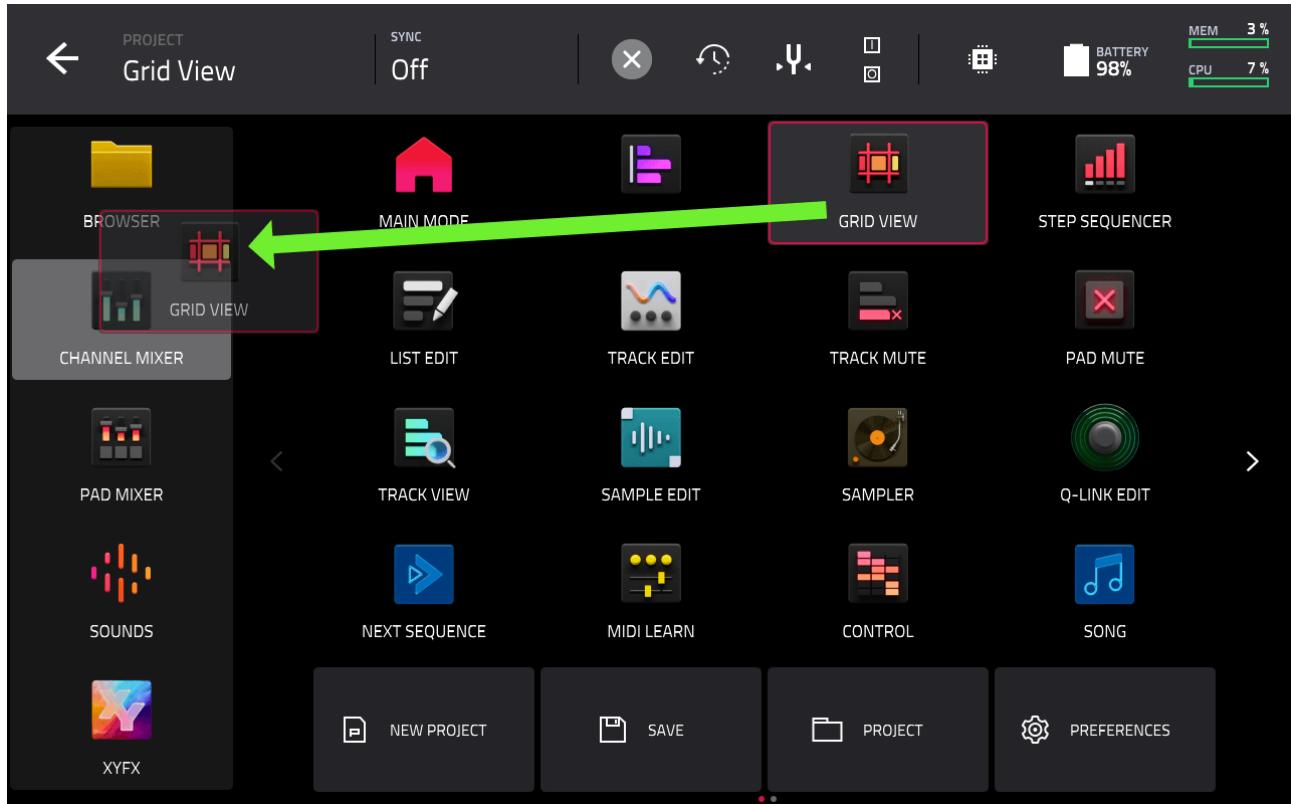


Just like the top pull down menu, the shortcuts panel is quite subtle. Tap and drag it to the right to reveal it:



The five shortcuts are the same as the five shortcuts within the first column in **MENU**. So to customise which five shortcuts appear here, head back to **[MENU]** and start dragging your favourite shortcuts over to this first column.

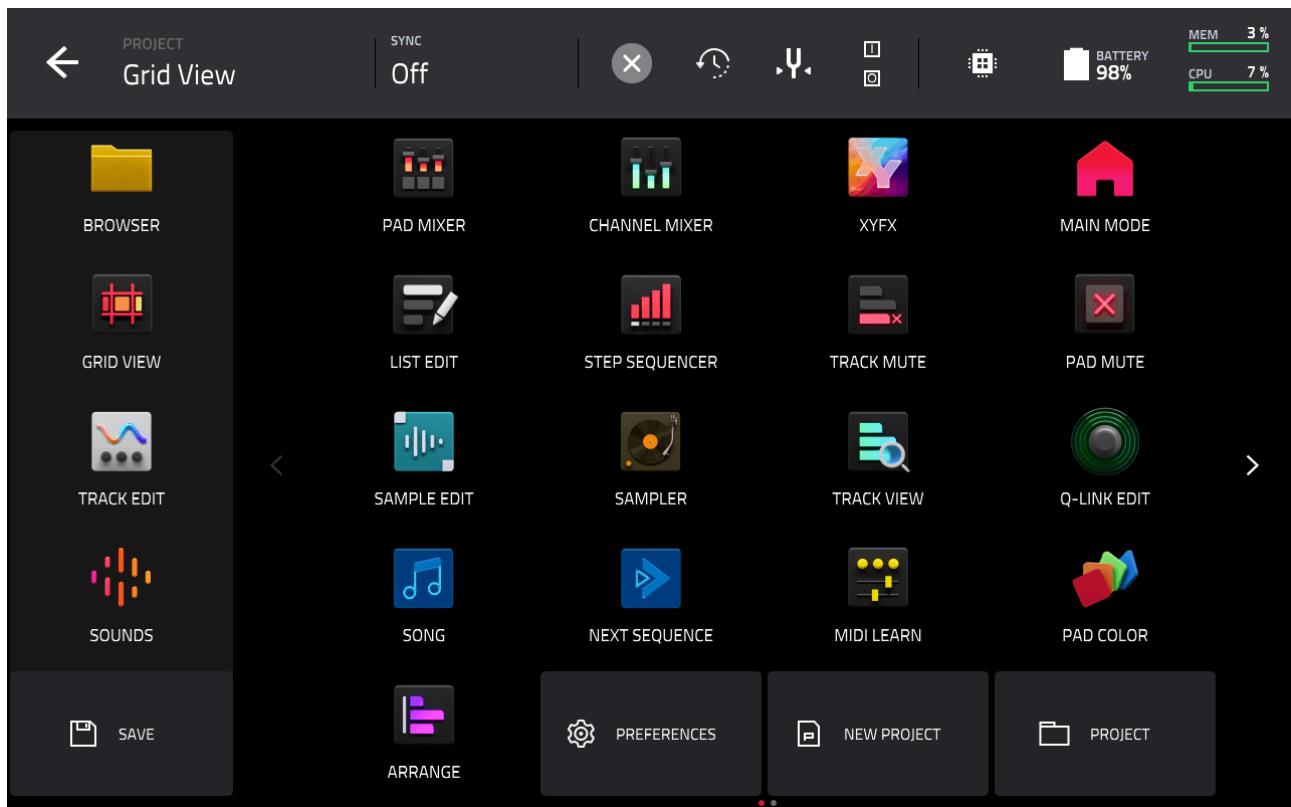
For example, let's place a shortcut to **GRID** directly under the **BROWSER** shortcut. Go to **[MENU]** and simply drag the **GRID VIEW** icon on top of the **CHANNEL MIXER** shortcut – this pushes all the icons down one place, 'ejecting' the XYFX shortcut entirely (it's now the first icon in the main 4x4 grid):



Drag any other icons over in the same way. I like to place the 'SAVE' and 'TRACK EDIT' icons on the shortcuts panel as I use an MPC Live and it doesn't have a dedicated hardware buttons for either of these. As you progress through the course, you may find you prefer to have shortcut links to pages like the Arranger, Channel Mixer or Track Mute.

Here's how I've re-arranged my MENU screen (but it will almost certainly have changed by the time this book is published!):

BO3: SEQUENCING WITH GRID VIEW



Also note that there is no option for a pull out menu in [MAIN] as the left hand shortcut column is a permanent feature there.

If you ever want to completely reset the layout, go back to [**MENU**], tap on the 'X' in the toolbar and select '**Reset Mode Menu**'.

B04: DRUM KIT EDITING PART 2

Before we start adding more instruments to our sequence, let's revisit our drum kit and learn how to further manipulate the sounds within it.

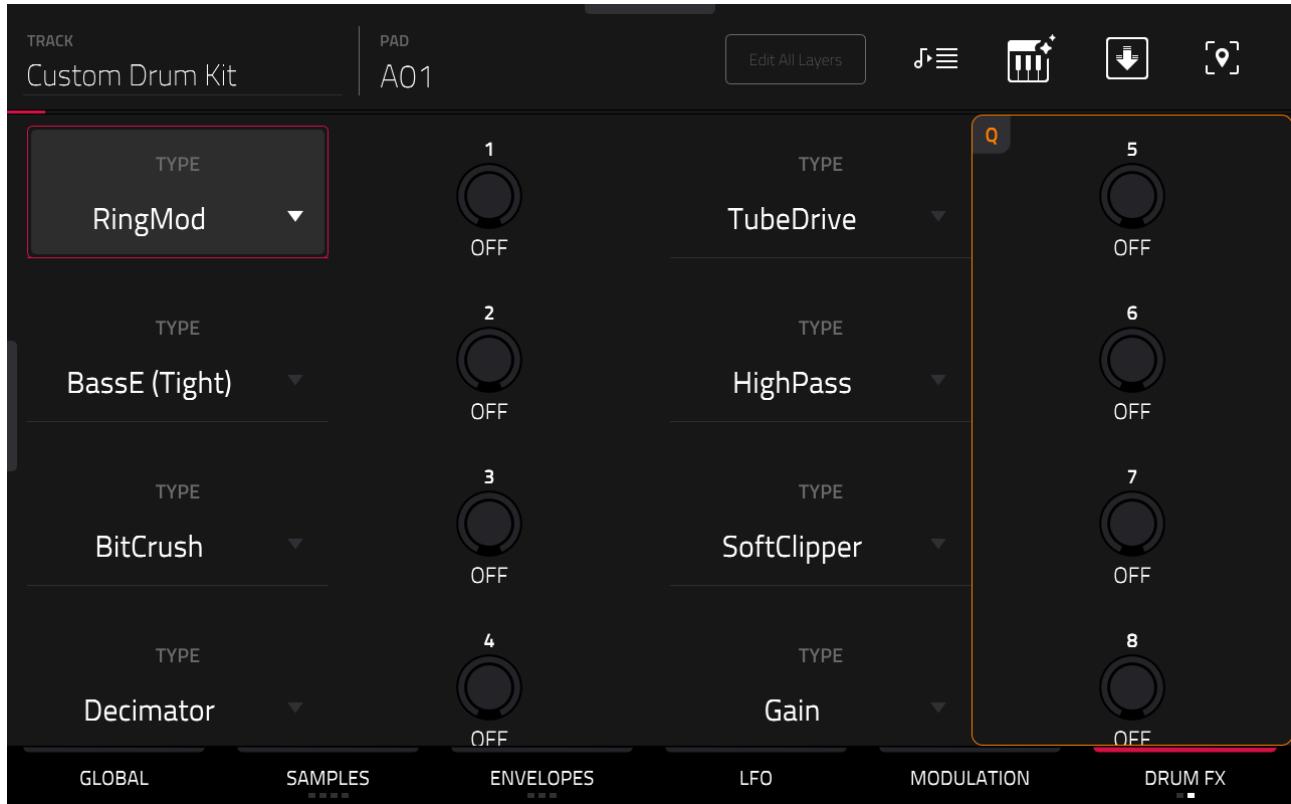
TOPICS COVERED IN THIS CHAPTER

- ✓ Adding Drum FX
- ✓ Using Insert FX
- ✓ Filters
- ✓ Advanced Layering Techniques
- ✓ Randomising Parameters
- ✓ Velocity Modulation

ADDING DRUM FX

Load up the project **B04 Initial.xpj** from the **B04** folder. Track 1 features the '**Custom Drum Kit**' we built at the end of chapter B02, along with the drum sequence we made in chapter B03.

Go to **TRACK EDIT > EFFECTS**, but then press the **EFFECTS** button again so it reads **DRUM FX**:



This page lets us manipulate the sound of our pad using up to eight simultaneous effects. The FX here use very low CPU and each only offer a single parameter to change, but this makes them perfect for quick and easy sound tweaks.

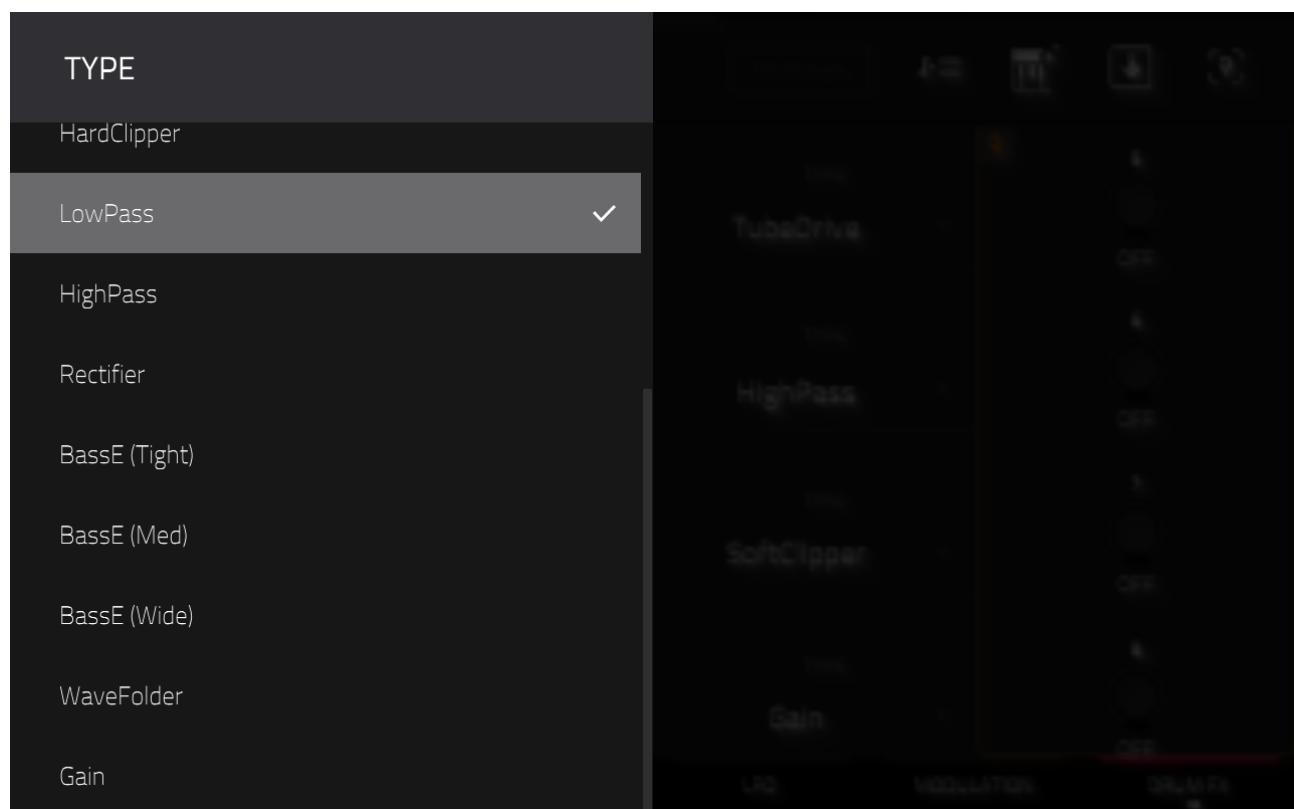
It's important to realise that when you apply any type of FX in the DRUM FX section, the FX is applied to the *entire pad*, i.e. it is applied to all layers.



When you add FX to a pad, or apply any other parameter change to a sample layer within TRACK EDIT, you are not modifying any of the underlying 'raw' samples in any way, you merely modify the way they sound when they play back on that specific pad. These

*changes are '**non destructive**', and can be modified or completely removed at any time.*

Select pad [A01]. Let's give this kick a bit more fatness using a low pass filter. There's currently 8 pre-assigned slots of DRUM FX available, but there's actually fourteen different FX available and we can easily change the effect assigned to any of the slots. Just double tap **SLOT 1 (RingMod)** to bring up the **TYPE** select box:



Select **LowPass**. A low pass filter is used to remove higher frequencies in a sound. It allows the frequencies below a specific 'cutoff' point to 'pass' while frequencies above that cutoff point are reduced (the amount of

reduction, or 'attenuation', is dependent on the type of filter, but we'll look deeper into that later).

Tap on the '**T**' dial and begin to turn your (DATA WHEEL) or turn (Q-LINK 14) clockwise and you'll be able to set the '**CUTOFF**' frequency for the filter.

At the initial settings the CUTOFF is set very high (20kHz, pretty much the highest frequency we can hear) so at this point the filter is effectively letting 'all' frequencies pass. As you turn the dial, the CUTOFF frequency value decreases, and as such lets less and less high frequency content through.

You can be as aggressive as you like, the lower the frequency the less it sounds like an acoustic kick. I'm going for a more subtle **CUTOFF** of **6.5kHz** which reduces the sparkle of the kick and gives it a bit more depth.

The opposite of a 'low pass' filter is, you guessed it, a '**high pass**' filter, which is used to reduce low and mid range content from sounds.. Here the filter allows frequencies *above* the CUTOFF point to pass but reduces the frequencies *below* the cutoff point.

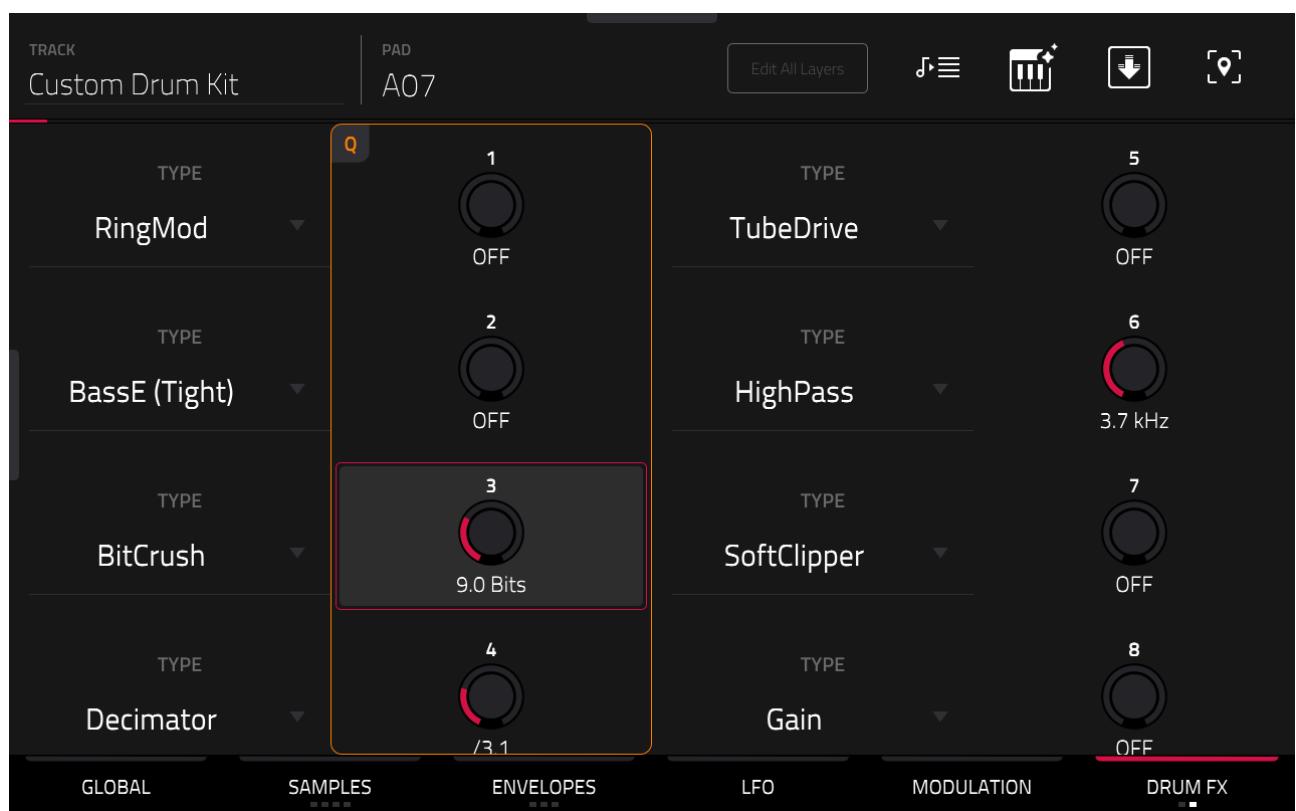
Select the shaker pad [**A07**] - let's use the high pass filter to remove lower frequency content from the shaker, keeping it contained entirely to the higher frequency region of our kit **SLOT 6** is already a **HighPass** filter so there's no need to change anything here. Tap in **SLOT 6** and start increasing the **CUTOFF** value while continually tapping pad [**A07**].

As you begin to increase the cutoff you'll initially hear the bass content of the shaker disappear, then the lower mid range becomes reduced. I

stopped at a **CUTOFF** of **3.7kHz**. Use the touchscreen to quickly take the CUTOFF dial back to 'OFF' to compare the difference.

Want to give the shaker some grit? Tap on **SLOT 4** and begin adding some **DECIMATOR** – the dial here isn't a specific 'unit', it just adds increasing amounts of 'decimation', which Akai say is an 'unfiltered downsampling of the sound'. Try a value of **3.1**.

Similar in nature to the DECIMATOR is **BitCrush** which reduces the bitrate of the sound for a more old-school flavour. Try a **bit rate** of **9.0 Bits**, giving the shaker some nice crunch.



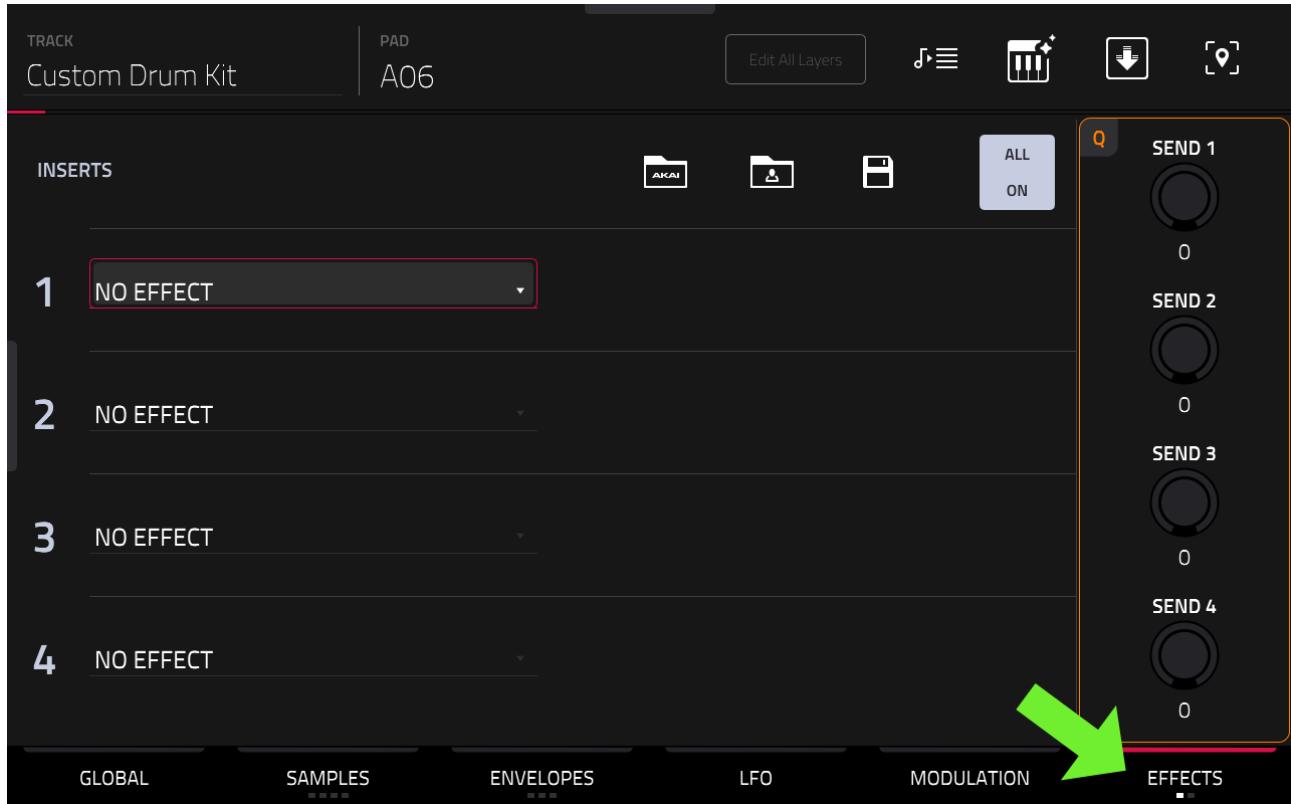
Select the clap on pad **[A06]**. Tap on **SLOT 1** and change from RingMod to **Rectifier**, which is a type of distortion. Increase to around **30.0%** for added grunge on the layered clap.

Now select the snare pad **[A02]**. **SLOT 7** is a **SoftClipper** which tries to emulate the type of saturation (distortion) found when driving analog hardware. Go easy here, too much clipping will kill the transients in the snare, try **x1.8**.

APPLYING INSERT FX TO PADS

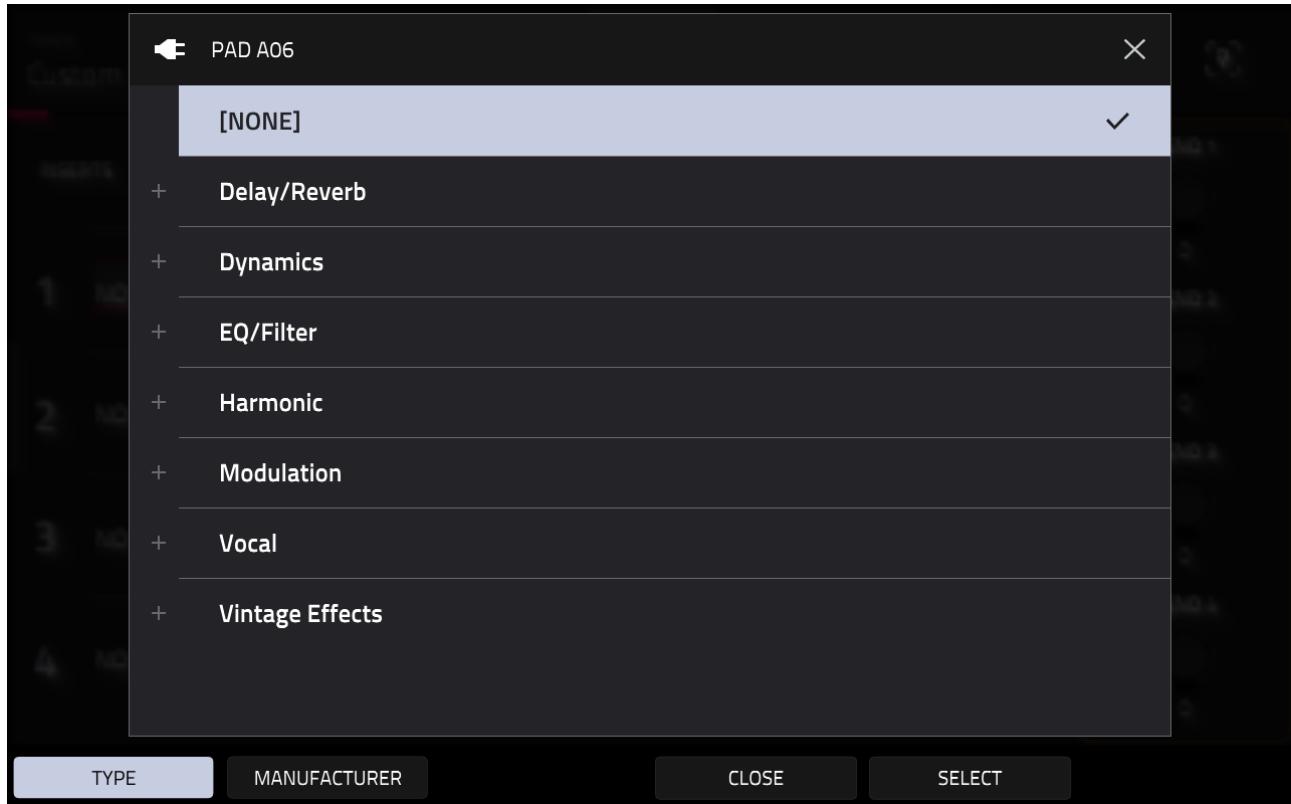
The DRUM FX section is perfect for quickly adding a selection of useful and low-CPU FX to your pads, but we can access a wider range of more highly configurable FX plugins in the main EFFECTS page of TRACK EDIT.

To access this page, simply hit the **DRUM FX** button again so it changes back to **EFFECTS**:



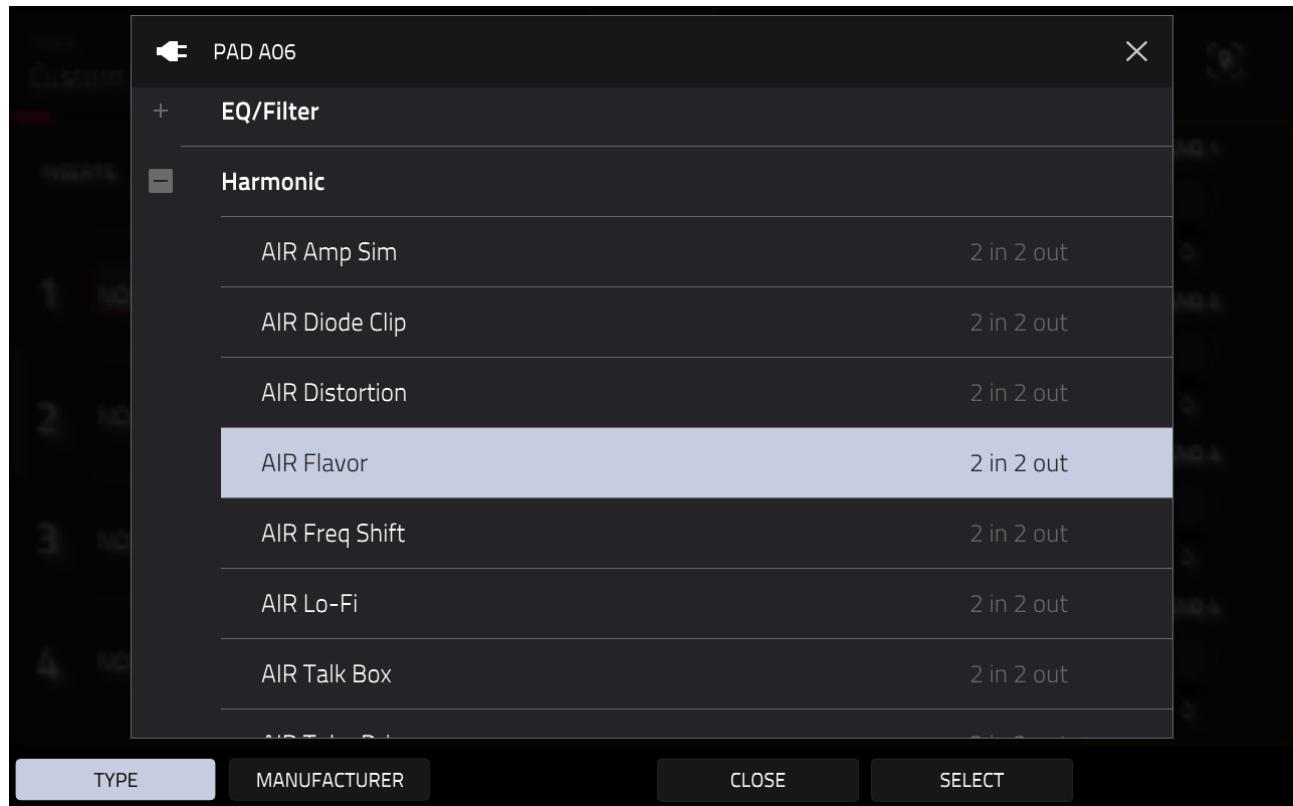
In the **EFFECTS** page you are able to 'insert' up to 4 different **FX plugins** across each pad. Like the DRUM FX plugins, the FX plugins in the EFFECTS page will modify the entire pad (i.e. all layers simultaneously) – they cannot be applied to an individual layer.

Select the layered clap pad **[A06]**. Double tap **INSERTS SLOT 1** (where it says 'NO EFFECT') to bring up the **EFFECT SELECT** screen:

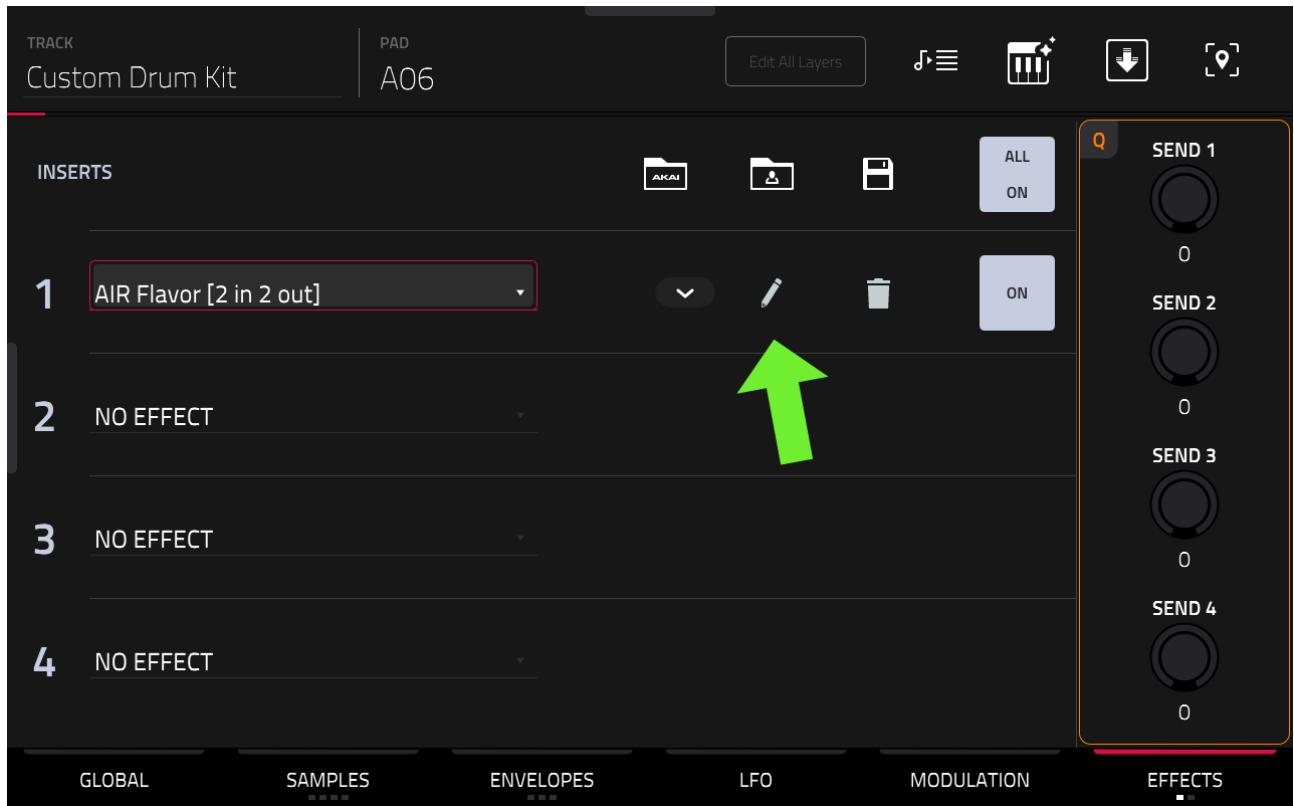


Here you'll see a list of all the included FX plugins within the MPC – if your list does not look exactly the same, make sure you've selected **TYPE** at the bottom of the screen, this ensures your FX plugins are organised into manageable groups.

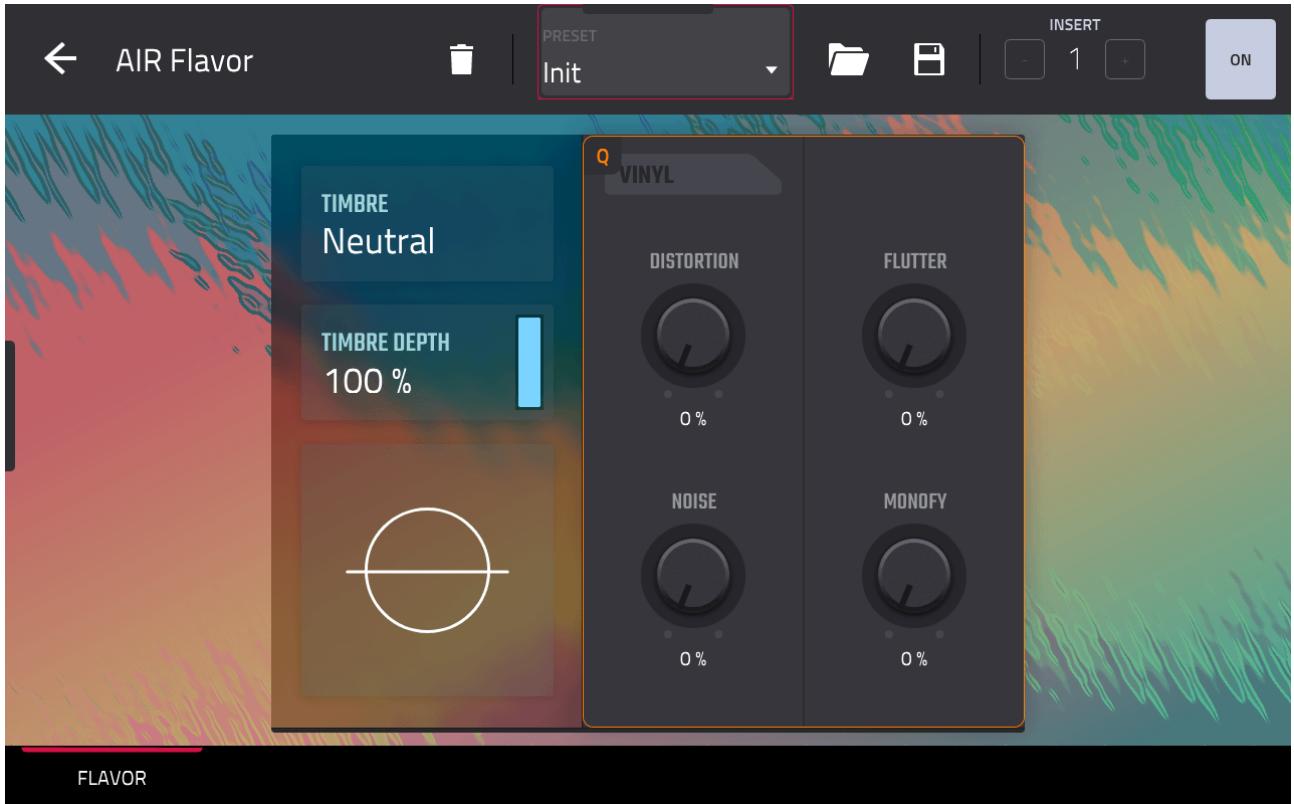
As you can see, there are many different categories of FX plugin, let's choose one from the '**Harmonic**' section:



The Harmonic section mostly contains distortion and lofi plugins. Double tap **AIR Flavor** to select it:

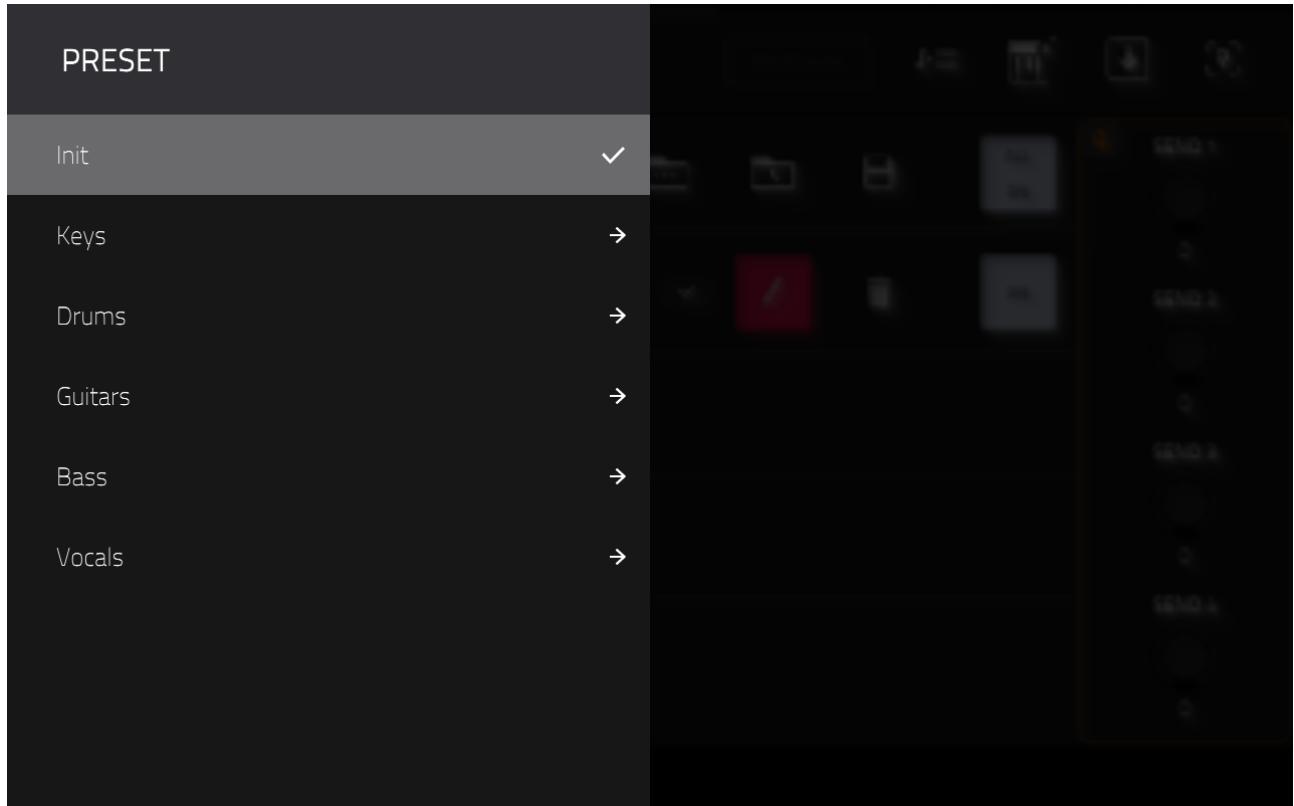


AIR Flavor can add a range of lofi textures to your sounds. To change the parameters of the plugin, tap on the '**pencil**' icon:



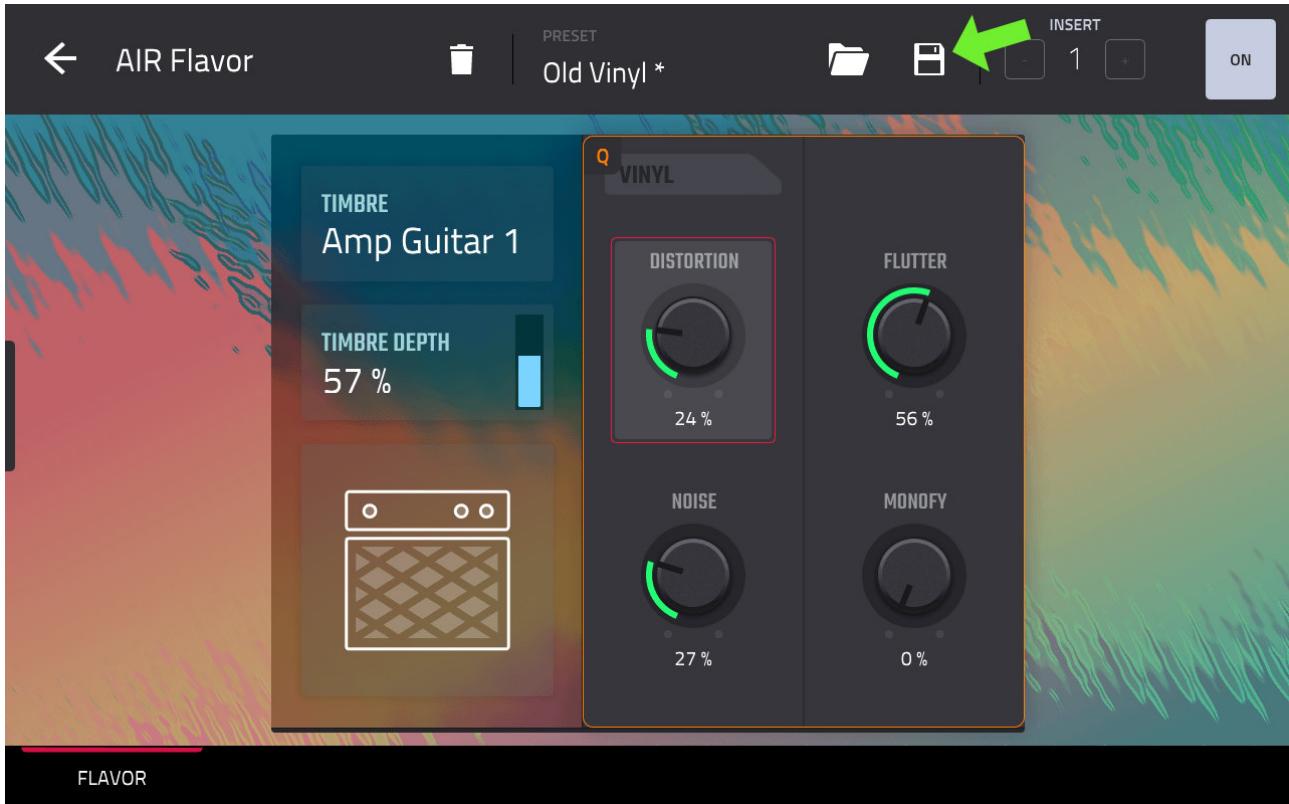
As you can see, the FX plugins offer many more treatable parameters compared to the DRUM FX. One of the benefits of using the FX plugins is they come with a range of ready-made presets, just like the instrument plugins do.

Double tap on the **PRESET** box in the top toolbar to view the PRESET categories:



This is just a guide and to be honest I personally feel that this is the type of effect where any preset can be used with any sound, so I prefer to close the PRESET window and just turn the (DATA WHEEL) until I hear something I like.

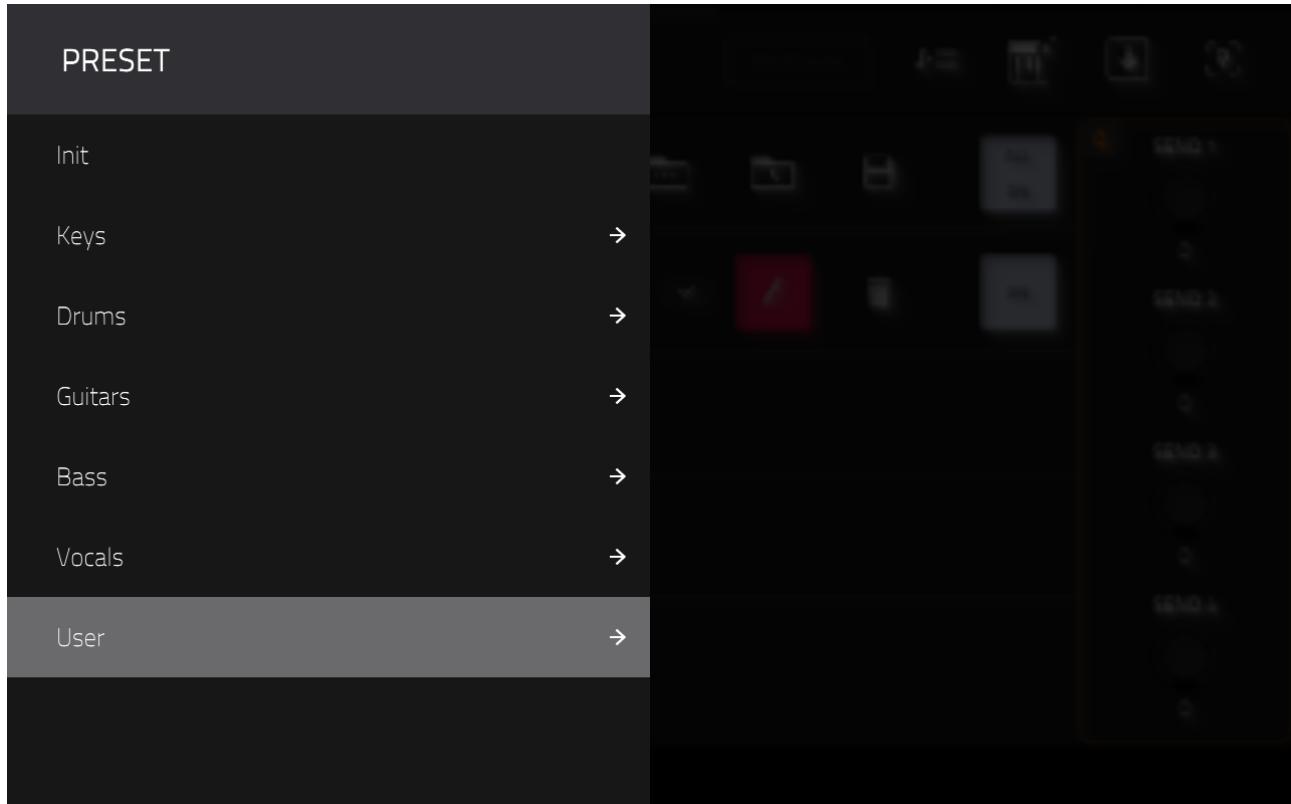
In fact one of my 'general' favourites is the **Keys > Old Vinyl** preset:



Remember presets are a nice starting point, and you should definitely try tweaking to create the personalised sound. The first think I would change is the **MONOFY** parameter as this will reduce our lovely clap panning motion, so set this to **0%**. Back off a little on the vinyl **NOISE** parameter, and add a little more **DISTORTION**.

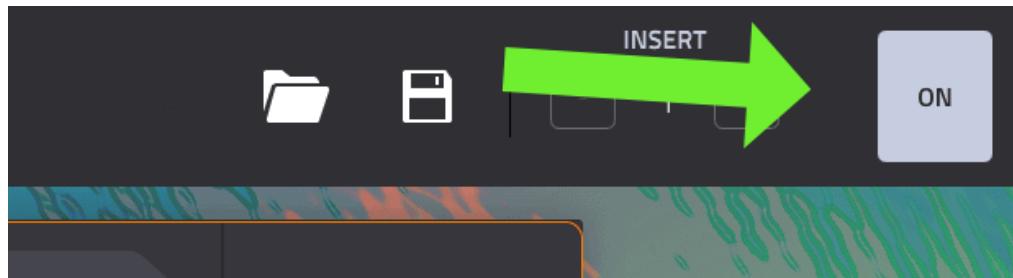
If you like this custom preset, you can save it; hit the **DISK icon** in the top toolbar and give it a name like '**Old Vinyl Stereo**'. This is one of the only times where I feel its fine to save to the internal drive (just use the default saving location offered).

After saving your new custom preset will be placed inside a dedicated '**User**' category:



*User presets are plugin-specific, so you'll only see a '**User**' category for a plugin after saving a custom preset for that specific plugin.*

You can compare how your effected sounds compares to the original 'dry' version by hitting the 'bypass' button at the top right of the screen:



Just tap so it changes from **ON** to **OFF** and preview the sound by hitting pad **[A06]**. Just remember to set it back to **ON** when you are finished comparing.

Tap the top left arrow in the toolbar to return to the main **EFFECTS** page. Select pad **[A08]**, our crash cymbal. The original sample used for this sound is a mono (single channel) sample - it's common to find cymbals converted to mono as they tend to be quite long samples so halving the number of channels quite literally halves the amount of memory they use in your project. But we can use some FX to give this cymbal some stereo width again.

Tap on the **INSERT 1** box for pad **[A08]** and choose the '**Modulation > AIR Stereo Width**' plugin. Tap on the pencil icon:



The stereo width plugin attempts to mimic the sound of a stereo sample by taking a single channel (mono) source and sending that same out of the left and right channels with a slight delay between the two signals, which can hopefully give a good approximation of stereo.

There's a few parameters here that can be manually tweaked; for example the WIDTH setting controls how much stereo 'spread' there is across the left and right speakers, while the DELAY controls how much time difference between the left and right channels. However, there's a perfectly configured preset that already does the job for us.

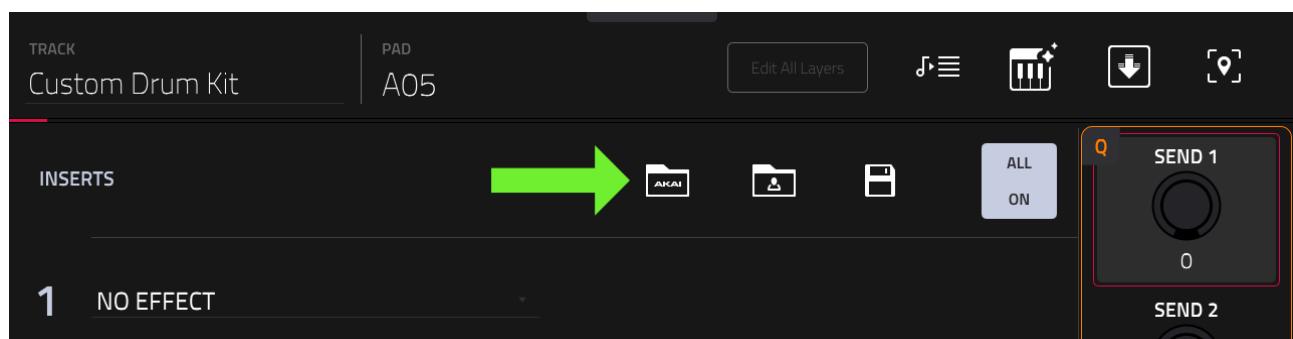
Select the first preset, '**Add width to Mono Signal**'. Again, use the **BYPASS** button to compare the difference with the un-effected version. The only

adjustment I made was to put the cymbal back on the right side of the stereo field, using **PAN TRIM: R10**.

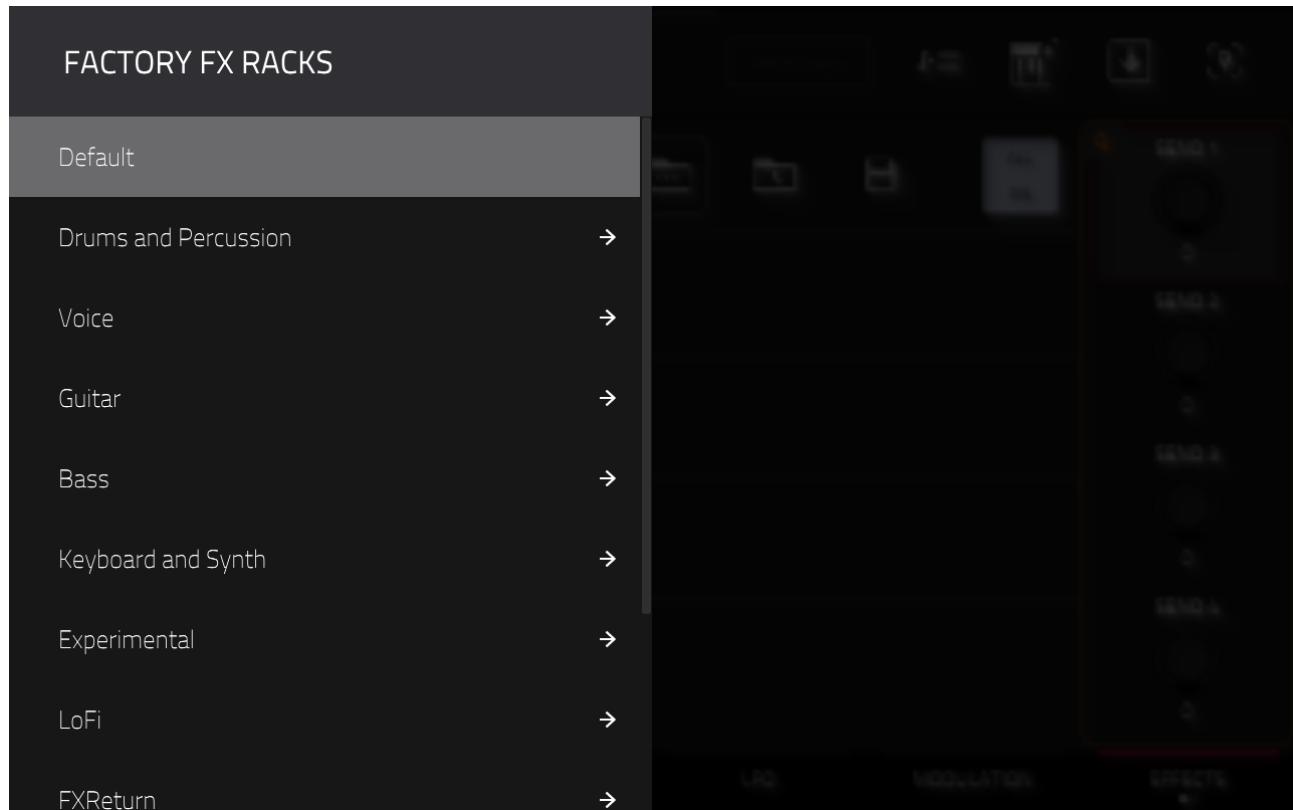
USING FX RACKS

On the subject of 'presets', Akai go one further by providing '**FX Racks**', each one comprising of multiple FX plugins, all pre-configured for you.

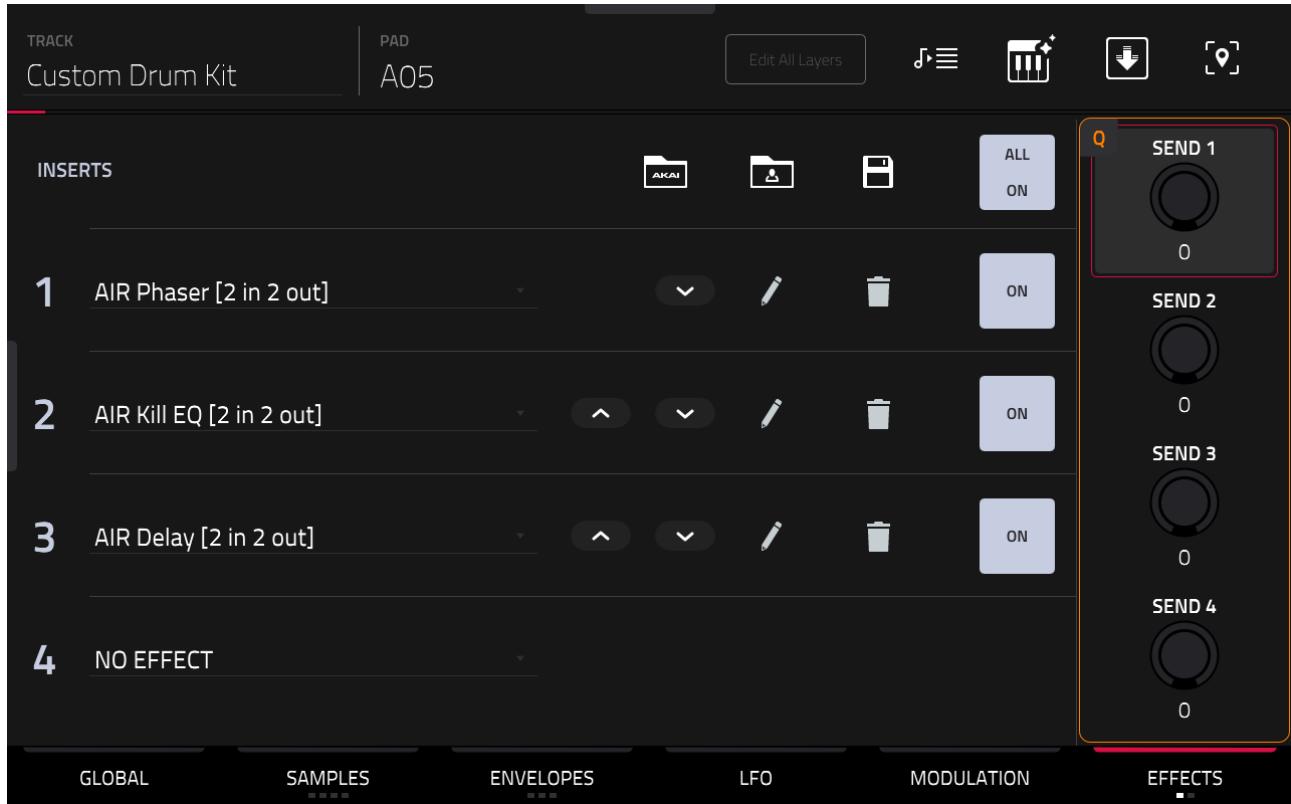
Return to the main **EFFECTS** screen and select our wooden block pad **[A05]**. Tap on the **AKAI** folder:



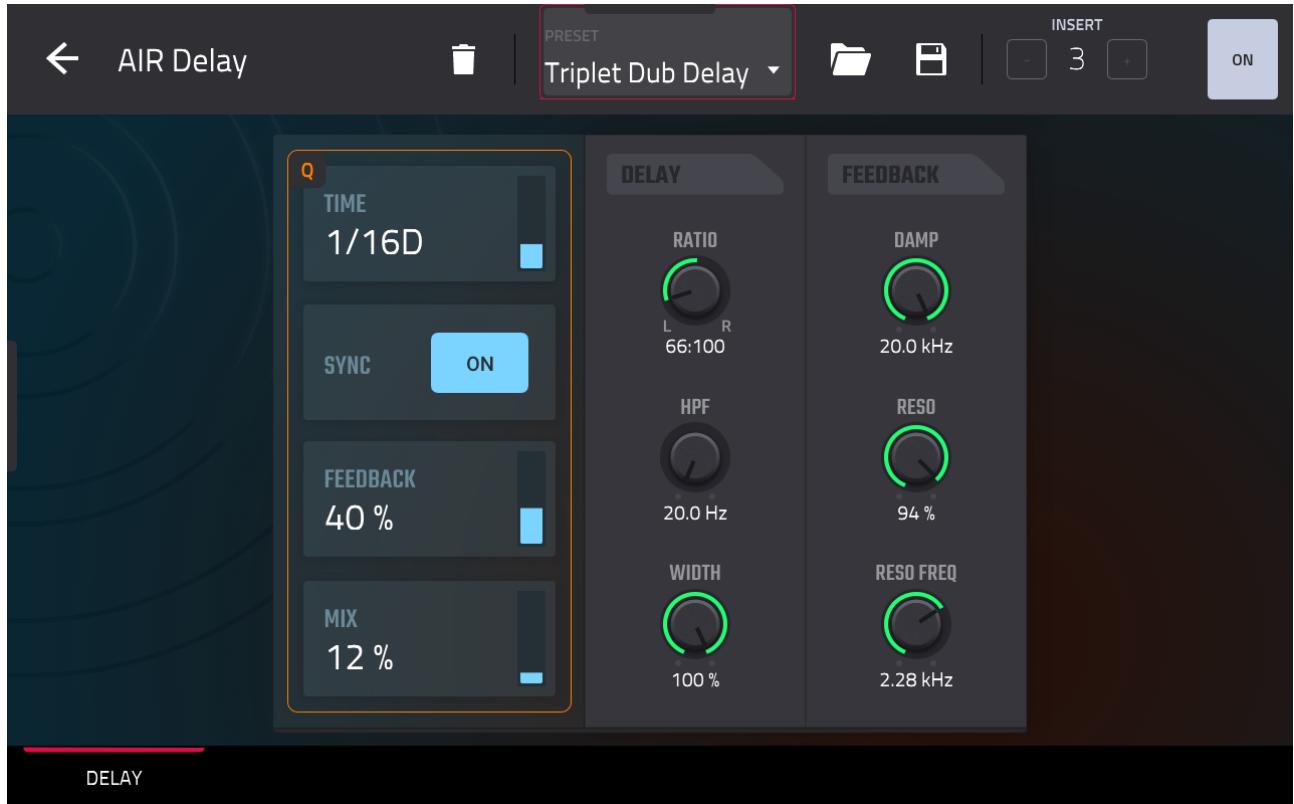
This opens the **Factory FX Racks**, which are all organised into categories:



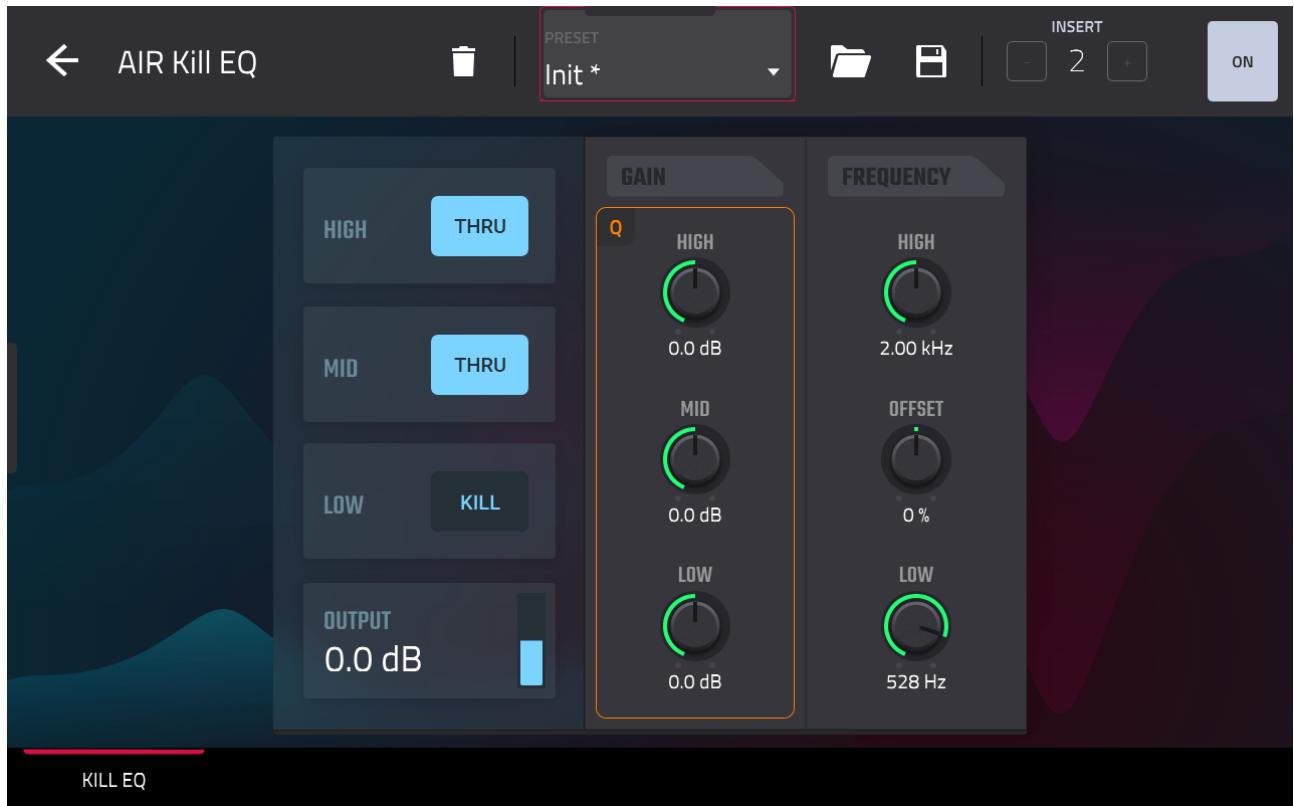
Choose **Experimental > Crossover Phaser Break**:



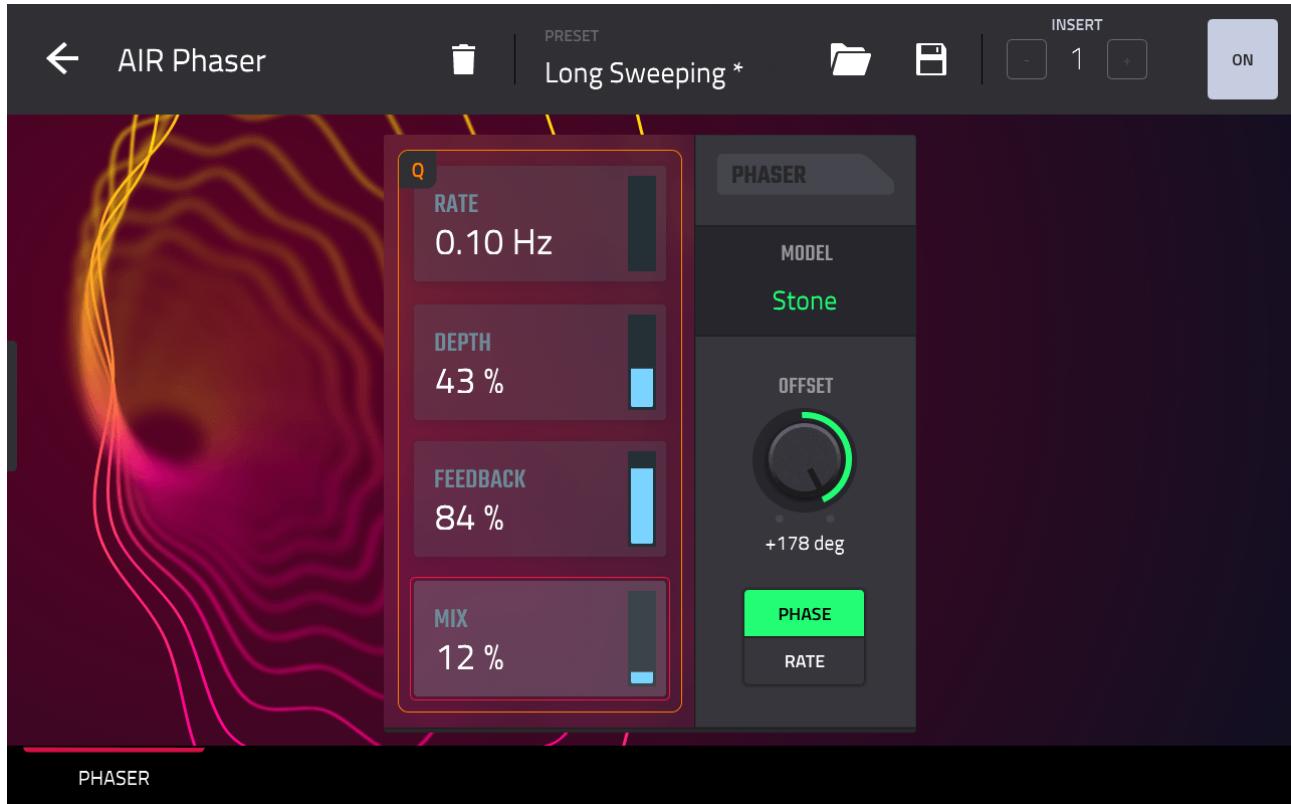
This has applied three FX plugins to this pad – hit the pad to preview. The AIR Delay adds a 'pinging' delay effect via its **Triplet Dub Delay** preset:



The **AIR Kill EQ** is set up like an aggressive low pass filter and removes ('kills') any low frequencies below 200Hz – I changes this to **528 Hz** to remove some harsh lower-mid frequencies as well:



AIR Phaser adds that swiping modulation effect, but perhaps it's a little too much, so hit the **pencil** for **INSERT 1** and reduce the **DEPTH** and **MIX**:

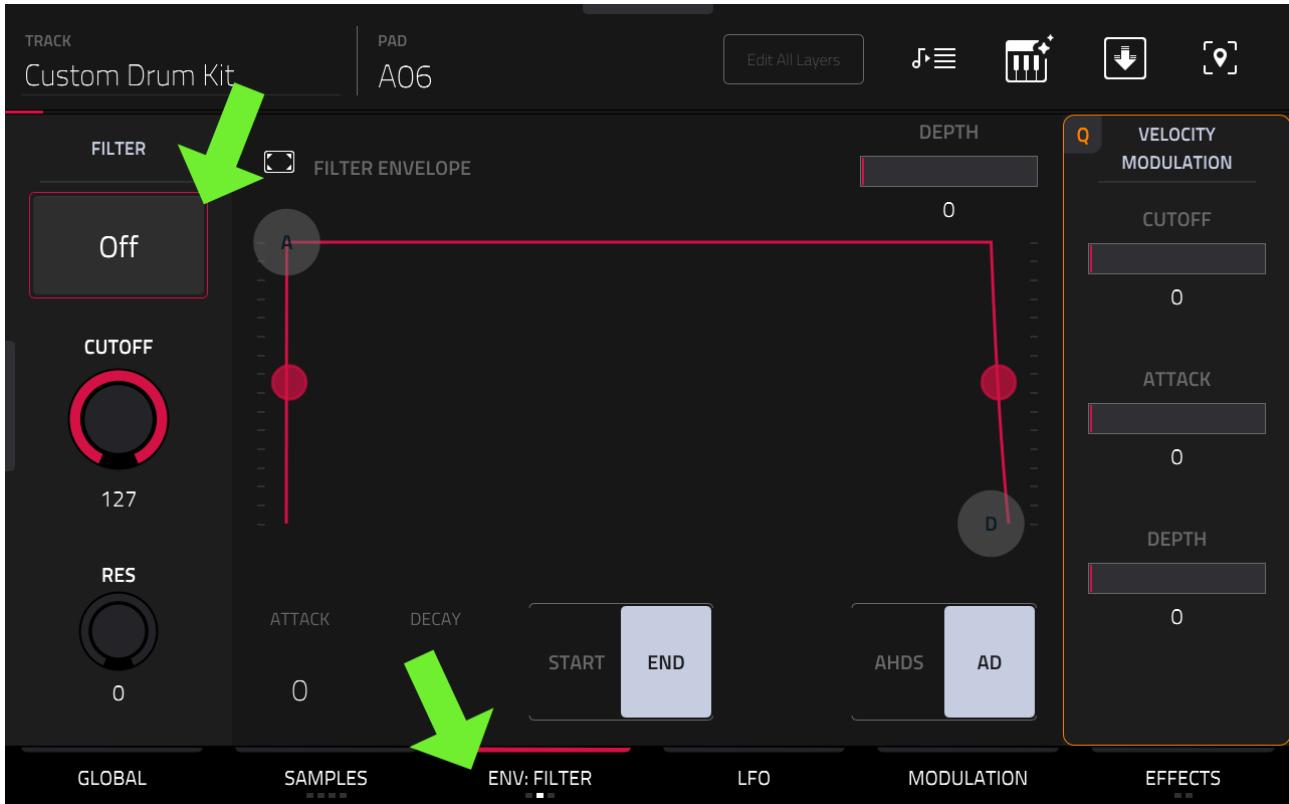


Let's leave it there for the moment, and we can revisit FX as we progress through the song building process.

BAND BOOST FILTERING

In addition to the two filters available as drum FX, each pad is also sent to a dedicated filter stage, just after passing through the 'amp envelope' stage which we've met previously.

Select pad **[A06]**. Tap on **ENVELOPES**, then tap it again so it now reads **ENV:FILTER**:



The dedicated filter stage offers many more filtering options compared to the simple 'single parameter' DRUM FX filters, and we'll be looking at this stage in more depth throughout the course.

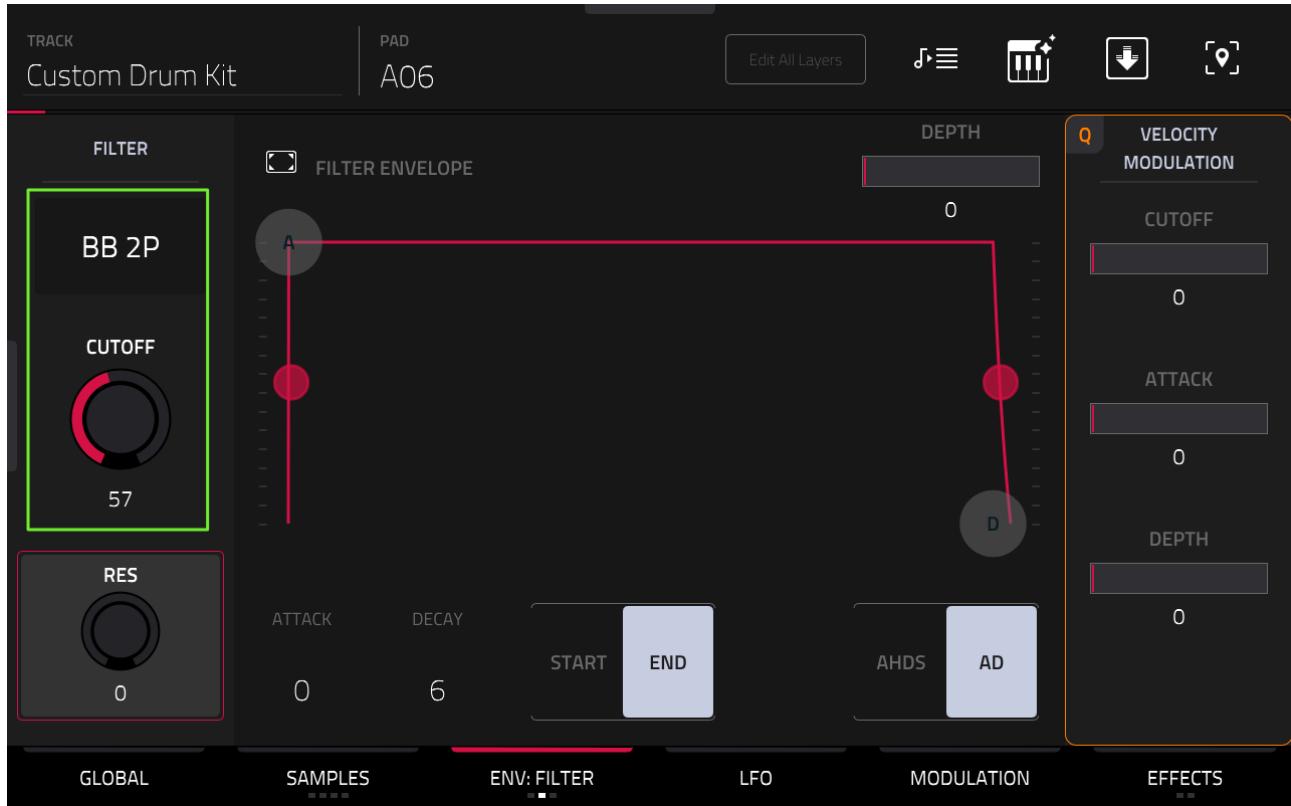
For the moment I just want to focus on using a different type of filter. By default the filtering stage is set to 'OFF' and no filter is selected. Tap on the **FILTER** parameter and turn your (DATA WHEEL) To start scrolling through the different types of filters available.

First we see all the different '**low pass filters**', then the '**high pass filters**'. Next are the various **band** filters. While high and low pass filters attenuate frequencies strictly above or below a specific cutoff point, 'band' filters focus on passing, boosting or attenuating *within* a frequency range.

For example **Band 2** is a **band pass filter** which will only allow frequencies around a specific cutoff point to pass through; all frequencies both above and below that frequency band are reduced. Select **Band 2** and play with the **CUTOFF**. As you sweep through the CUTOFF you can hear that both the high and low frequencies have been taken out so you are only hearing the clap within a specific frequency range (the actual range isn't specified).

Repeat with a **BS2P** filter. This is a 'band stop' filter, and is effectively the reverse of a band pass; now the frequencies within the selected band are removed ('stopped'), and the frequencies either side of the band are 'passed'.

Finally try a **BB 2P** filter. This is a 'band boost' filter – now we are boosting the frequencies within the selected band, while all frequencies either side of the band are untouched. Set the **CUTOFF** to **57**, this brings out the 'crunchy' vibes of the clap nicely.



ADVANCED LAYERING WITH SIMULTANEOUS PLAY

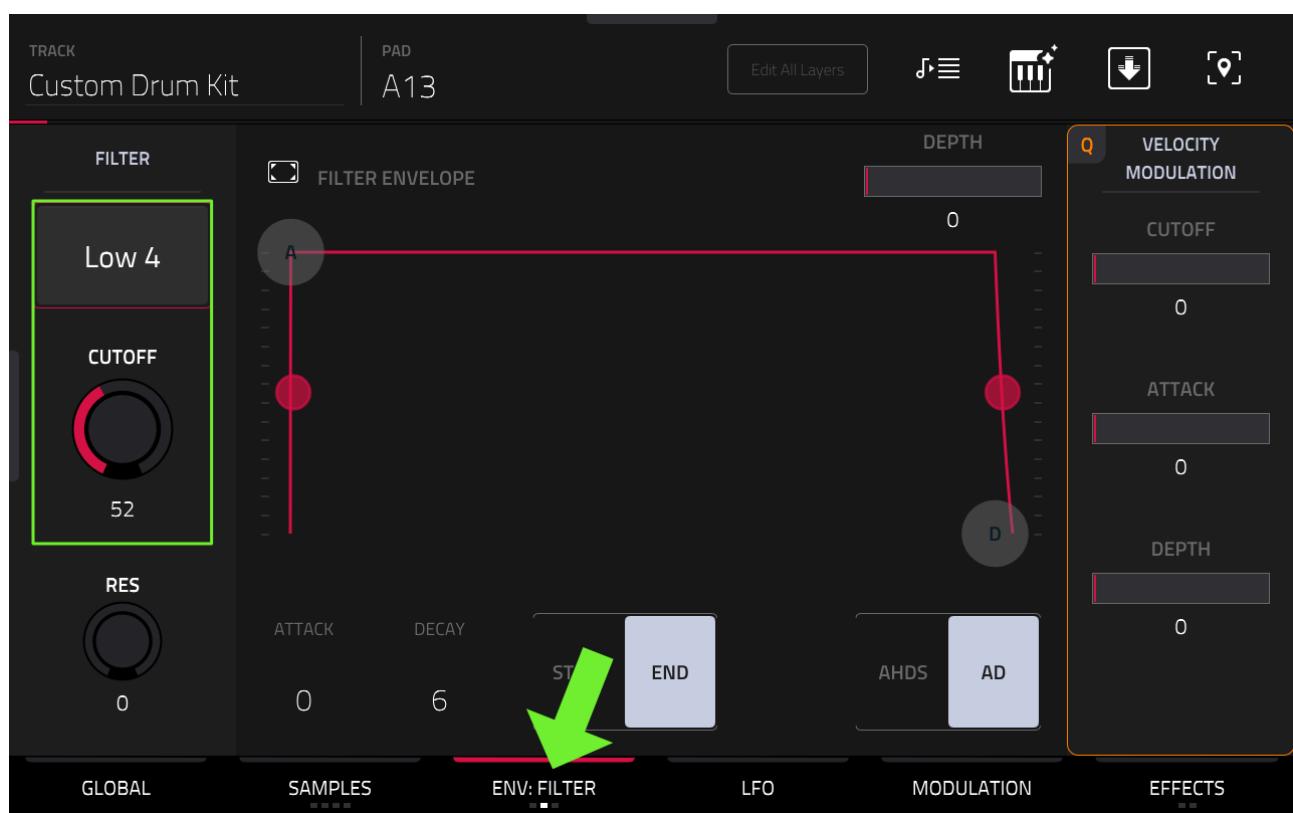
I'd like to add another layer to our kick, one that's going to give it some extra 'balls'. A common way to achieve this is to use a kick drum that has been passed through heavy low pass filtering.

So far we've created all our layered drums using some of the built in pad 'layers' provided with each pad, and these work great when we limit ourselves to adjusting 'layer-only' parameters, such as LEVEL, SEMI, OFFSET and PAN.

But it's not possible to apply a filter to a specific pad layer; filters (just like DRUM FX) are applied to an *entire pad*. But there is a nice workaround which will allow us to effectively create a 'filtered pad layer'.

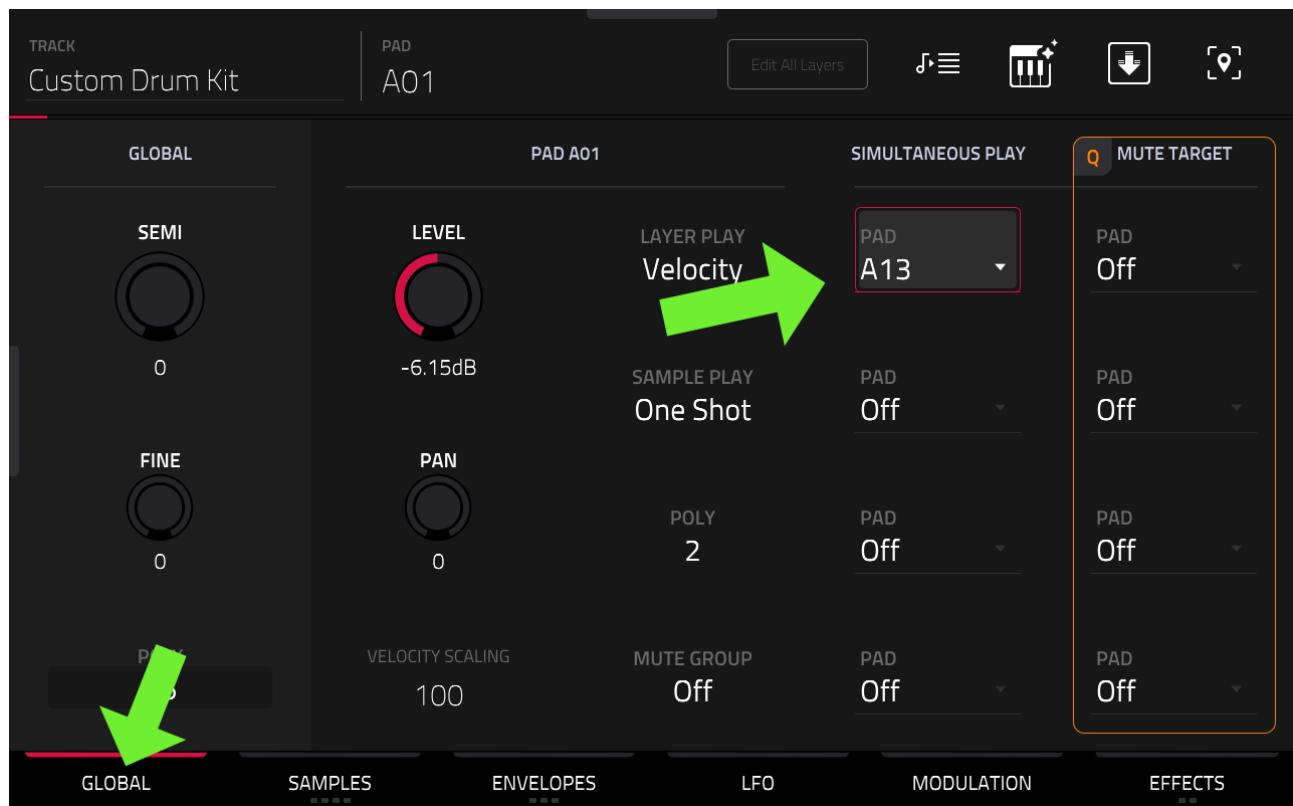
Select pad [A13], go to the **BROWSER** and from the **B04** folder double tap the **Kick-DKV kik 018** sample to load it directly to pad [A13]. As you can hear, it's a deep, thumping kick.

Go to **TRACK EDIT > ENVELOPES** and press **ENVELOPES** again to enter the **ENV: FILTERS** screen; set a **FILTER** of **Low4**:



This is a '4 pole' Low Pass filter, similar to the low pass filter we applied in the DRUM FX screen but with a slightly more aggressive filtering action. Set the **CUTOFF** to **52**.

Now go to the kick on pad [A01] and select **GLOBAL**:



Under **SIMULTANEOUS PLAY** you can configure up to four pads to be simultaneously triggered each time pad [A01] is played. Set the first slot to **A13** and preview pad [A01] and you should also hear our filtered kick 'layered' with it.

You can now go back to pad [A13] and tweak the sound so it sits perfectly with the A01 kick. There's two ways to edit here; first you can tweak [A13] in isolation (as it is now), but if you'd prefer to tweak [A13] and hear the entire layer in real time, simply set up a '2 way' simultaneous play relationship.

So on pad [A13], go to **GLOBAL** and configure its first **SIMULTANEOUS PLAY** slot to [A01]. Now you can tweak any parameter on our A13 'filtered layer' and you'll immediately hear it affects the overall layered sound.

On [A13] go to **ENV:AMP** and shape the kick layer a little to reduce the initial attack transient and remove some of the decay.



On this screen you can then play with the **LEVEL** dial on the left side column to adjust the overall mix. In fact, take the **LEVEL** down to **-INF dB** and will previewing pad [A13] (and hence the entire layered kick), start increasing the **LEVEL** until the filtered kick adds just the right amount of 'oomf'.

RANDOMISATION

One of the problems we face when working with sampled drums is the 'machine gun' effect, which you'll often hear very clearly within hi hat patterns where the same sample is played in quick succession, with each hit sounding identical to the last. This can affect any drum sound and can make your drums sound sterile and robotic, even if the sequence itself is full of feel and groove.

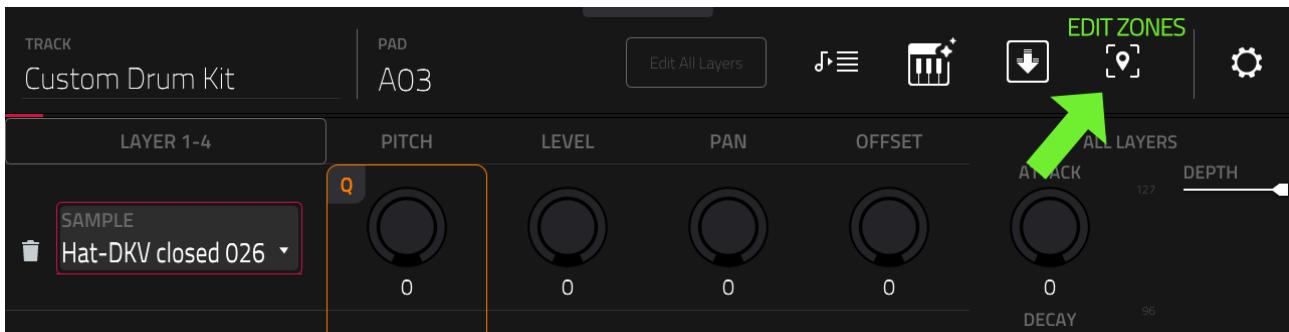
Real instruments sound little different each time they are hit, even if they are hit at the same velocity. The character and tone of a sound is often referred to as its 'timbre' (pronounced 'tamber'). When we only have a single sample to work with we have to rely on some clever tricks to help introduce some variance in our drum sounds.

Select pad **[A03]**, go to **TRACK EDIT > SAMPLES** and hit the **SAMPLES** button another three times so it reads **RANDOM**:



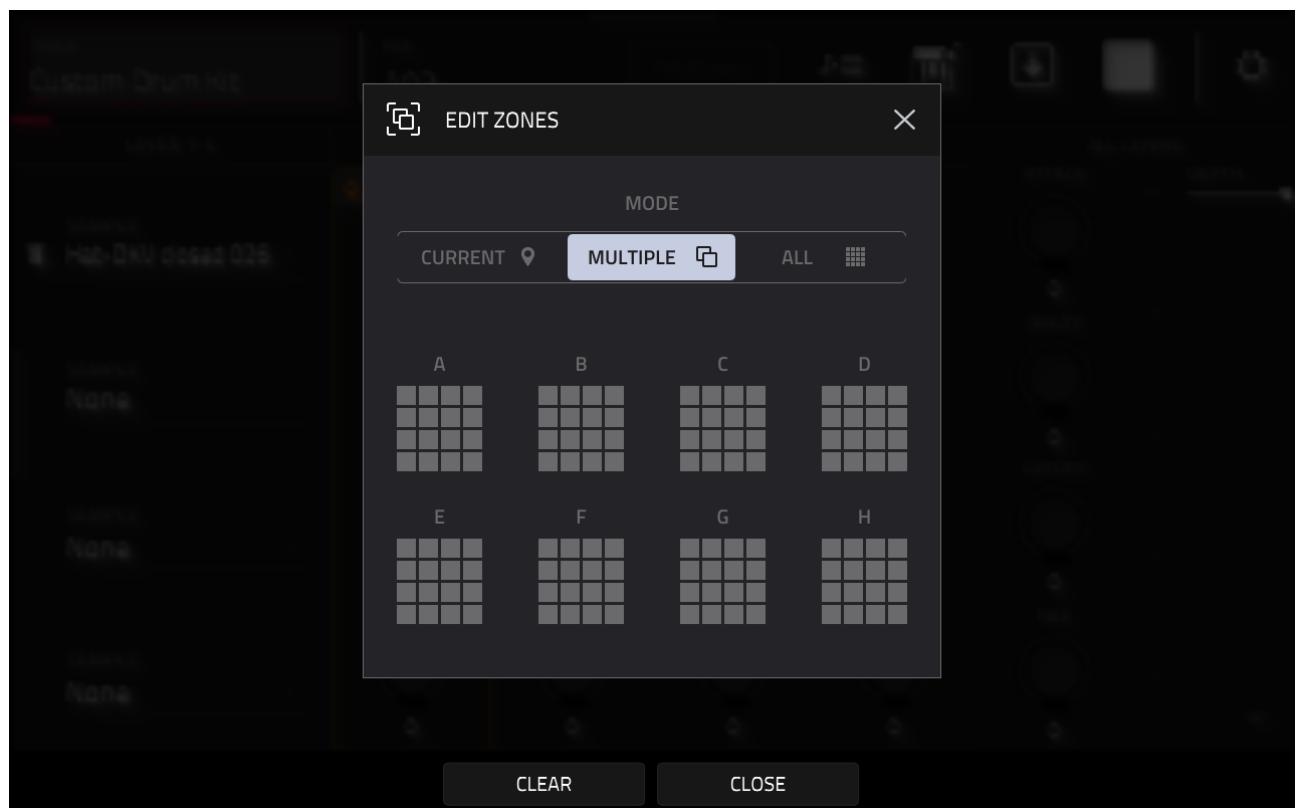
On this screen we can configure a number of pad layer parameters to change on a randomised basis which can help add some subtle variety to our drum sounds and hopefully avoid the machine-gun effect.

Let's change the RANDOM settings for a group of pads. Tap on the **EDIT ZONES** icon:

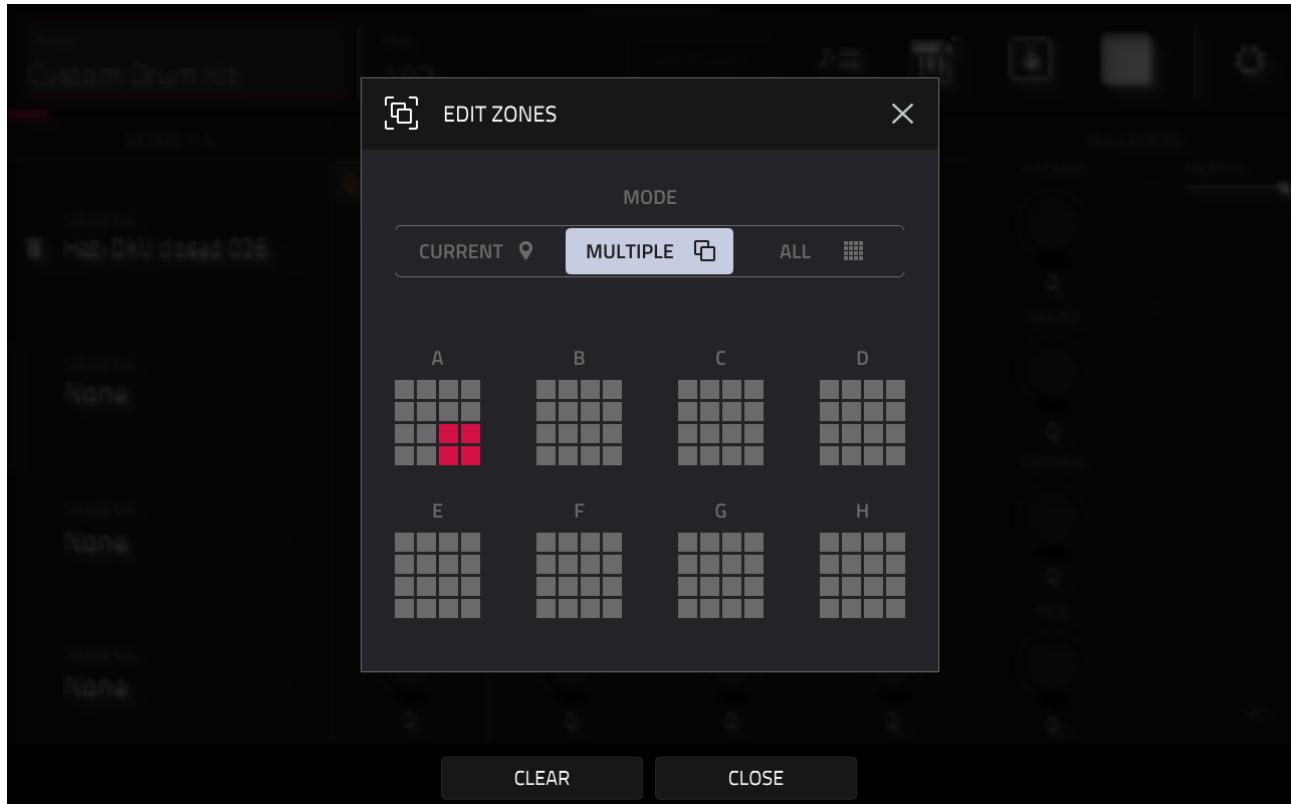


EDIT ZONES allows you to edit the parameters across multiple pads simultaneously, avoiding the need to apply the exact same edits to each pad individually. The 'ALL' setting will apply any parameter changes equally across all 128 pads, while 'MULTIPLE' allows you to select a specific set of pads.

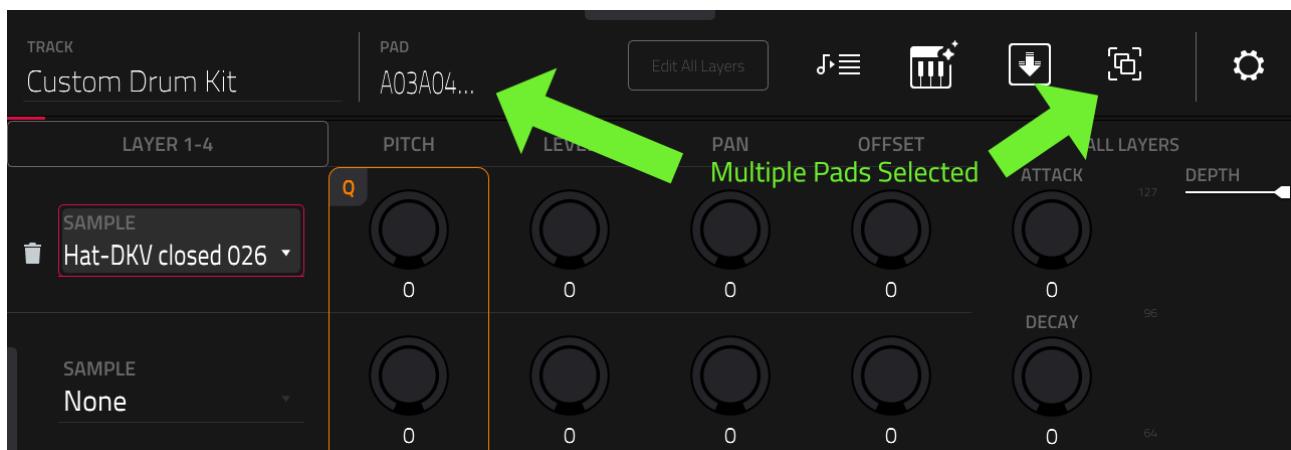
As we are going to edit four pads together, select the **MULTIPLE** option:



Tap on our hi hats on [A03] and [A04], the crash cymbal on [A08] and our other 'top' sample, the shaker on [A07]. They now show as red in the **MULTIPLE** screen to indicate that they are all selected:



Hit **CLOSE** and select any of the four pads. You'll see that the **PAD** field in the top toolbar is showing we have multiple pads enabled:



And if you look at the pads themselves, you'll notice that the grouped pads are lit in yellow (apart from the currently selected pad which is green). Any edits we make now will affect all four pads simultaneously and equally.

Randomise settings change specific parameters on each layer of a pad each time it is hit, regardless of the velocity, so let's take velocity out of the equation and enable [**FULL LEVEL**].

The first four options are layer specific. The first is **PITCH** - you can tap on this and change with the (DATA WHEEL) or turn the top Q-LINK (Q-LINK 13).

How much pitch you apply is going to depend on the type of sample you are applying this to, so you'll always need to experiment to find a good balance between subtlety and excessive pitch changes, but 'similar' types of sounds tend to require similar settings, which is why I've grouped these four sounds together.

First try a really high setting so you can hear just how this feature works, so set a **PITCH** of **100** and continually hit pad [A03] and then pad [A04]. Obviously this sounds very unrealistic at such an extreme setting, so reduce the **PITCH** to something more subtle. Try a **PITCH** of **24**.

Next is **LEVEL** (Q-LINK 14), which will provide a random variance in volume level. Try a **LEVEL** of **25**.

The **PAN** parameter (Q-LINK 15) is going to provide random panning variance, so is less 'natural' sounding and more used as a special effect (a PAN of 100 gives random hard left/right panning). For our current purposes we should leave this at **0**.

The last layer-specific option is **OFFSET** (Q-LINK 16). By increasing the OFFSET value the sample on this layer will start playback at a random start point each time it is hit. Definitely keep this one quite subtle otherwise you can really kill the attack transients. Try an **OFFSET** of **10**



The next column contains four parameters that will affect the entire pad rather than targeting a specific layer. The issue with these is that the parameter changes offered here don't really sound great when the pad is hit at a hard velocity, for example, we don't really want anything other than a 'sharp' attack on hard hits, so I prefer a different method when it comes to parameters such as attack and filter cutoff (which we'll be covering this later in this chapter).

You can test how this affects the machine-gun nature of the closed hat using NOTE REPEAT. Just make sure **T.C.** is enabled and set to **1/16**.

Remember you can set T.C. from any screen using the '**pull down menu**' – to change TC settings, tap and hold on the **T.C.** icon:



Now hold down [**NOTE REPEAT**] and pad [**A03**] together and listen to how the closed hat changes timbre each time. Now try the shaker on pad [**A07**] – sounds pretty good!

Now check the other two pads in our group. Maybe the PITCH setting of 24 is a bit too much for the crash and the open hat, and the OFFSET seems to be causing an occasional click, so let's change this. First head back to **EDIT ZONES** and set it back to **CURRENT**.

Now select pad [A08]. We can reduce the **PITCH** setting to something a bit less aggressive, try **PITCH:15** and set the **OFFSET** to **3**.

An alternative to changing the parameters themselves is to change the **DEPTH** of the randomness using the slider at the end of the screen. Hit pad [A04] and reduce the **DEPTH** to **80**, which takes some of the 'edge' off the random changes.



Save your work to your own '**Projects**' folder, then check out up my version, **B04 Final.xpj**

B05: SAMPLING TECHNIQUES

One of the most essential core skills to learn is the art of sampling, so in this tutorial we're going to sample some 'cuts' from a record and use those recording to create some melodic one-shots for our kit.

TOPICS COVERED IN THIS CHAPTER

- ✓ Sampling external audio
- ✓ Using the Sampler
- ✓ Vinyl sampling workflow
- ✓ **Workshop:** Sampling from smartphones & other devices

Sampling is essentially 'recording' audio from external sources such as vinyl, CDs, live performances via a microphone and even directly from sites like YouTube. The audio we sample can be used as building blocks for further editing using the tools in our MPC to create our own unique sounds.

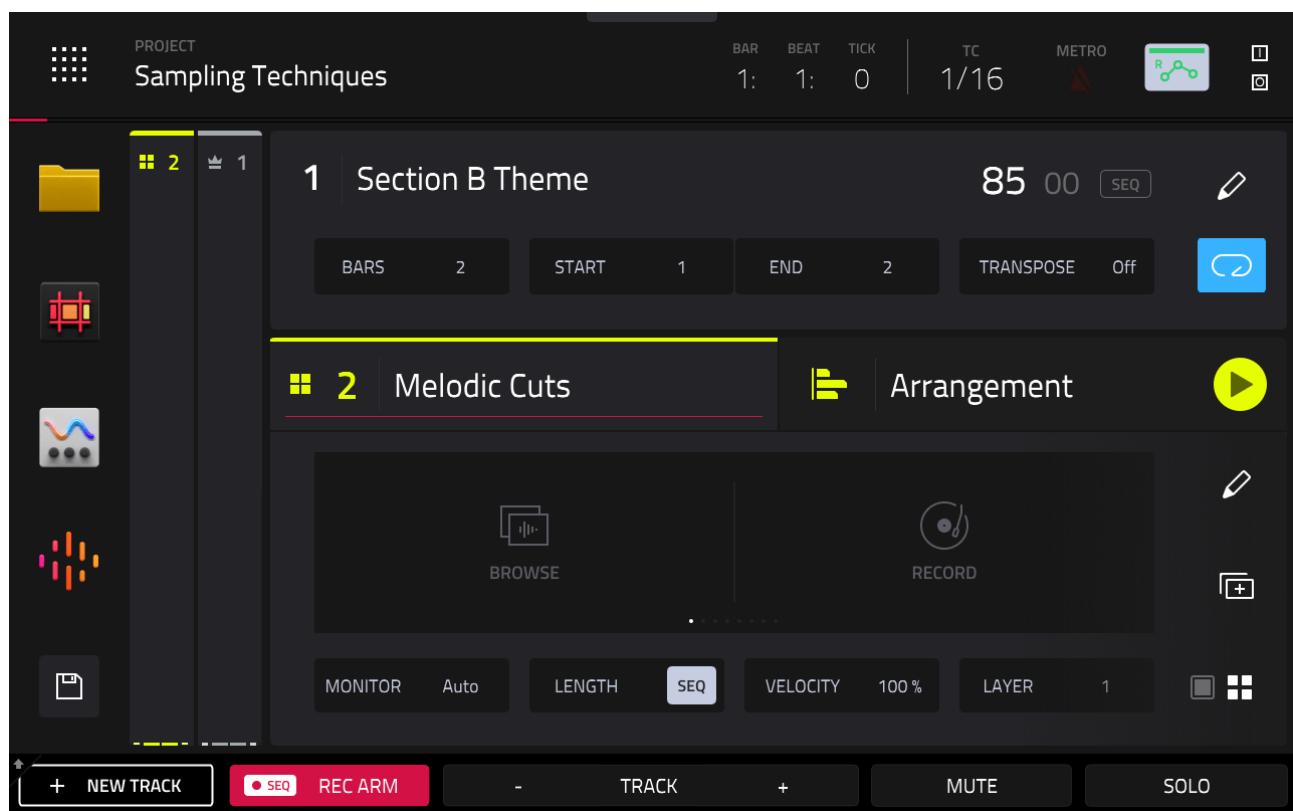
In this tutorial we're going to sample some audio from old vinyl record which we'll then convert into some melodic one shots for use in our 'Custom Sampled Drum Kit'.

SETTING UP A VINYL SAMPLING SESSION

First, go to the **MPC Bible 3 Project Files > B05** and load up the project file **B05 Sampling Techniques.xpj**.

In this project, 'Sequence 01' contains a copy of the existing project we've been working on throughout Section B, with a drum kit and MIDI performance on track 1.

Let's build some melodic sounds within a completely new track. Hit the **+NEW TRACK** button at the bottom of **MAIN**, tap **Drum** to create a second DRUM track in this sequence. Tap and hold on the default name and use the keyboard icon to rename it **Melodic Cuts**:



SAMPLING EXTERNAL AUDIO

Previously in the course we've only dealt with ready-made samples which we just loaded into the MPC via the browser. Sampling on the other hand lets us record *anything* into our MPC, be it short snippets from vinyl records, sounds of nature, vocals, banging on saucepans, dripping taps.

Literally anything that emits sound can be recorded into the MPC and made into a sample which we can then assign to our pads and further manipulate.

In this chapter I'm going to focus on sampling 'cuts' from vinyl, although this could just as easily be sampling from a folder of songs you downloaded to your phone. The idea is you explore each record looking for some interesting parts to sample; each time you discover something that might be useful you sample that snippet into your MPC.

The key point of this workflow is to quickly create a bunch of 'raw' samples which you can save and then revisit at a later date for further sorting, editing and manipulation. It's a great way to quickly build a library of raw sampling food that can be used in future projects.

To record audio into an MPC we'll need to connect the audio '**output**' of our source (e.g. turntable, synth, guitar, computer, smartphone, microphone etc) into the audio **inputs** of the MPC.



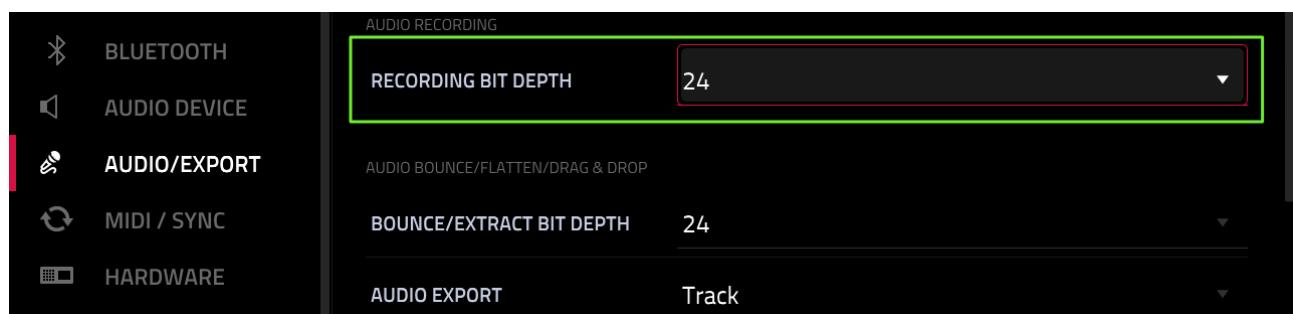
I've created a detailed guide in [Appendix B](#) which explains how to physically connect the most common sound sources, so

head over to that if you need some help setting up the necessary audio wiring for your MPC model.

For the purposes of this part of the course, I'm going to assume that you have a stack of vinyl (or a big collection of songs on your smartphone) and are sampling short 'cuts' to build a collection of useful individual samples to use later in your beats. I'll also assume that you have already connected the audio outputs of your turntable or phone to your MPC audio inputs using the guide in [Appendix B](#).

CONFIGURING THE MPC SAMPLER

Before we begin recording, head over to **MENU > PREFERENCES > AUDIO/EXPORT** and ensure your **RECORDING BIT DEPTH** is to **24**:

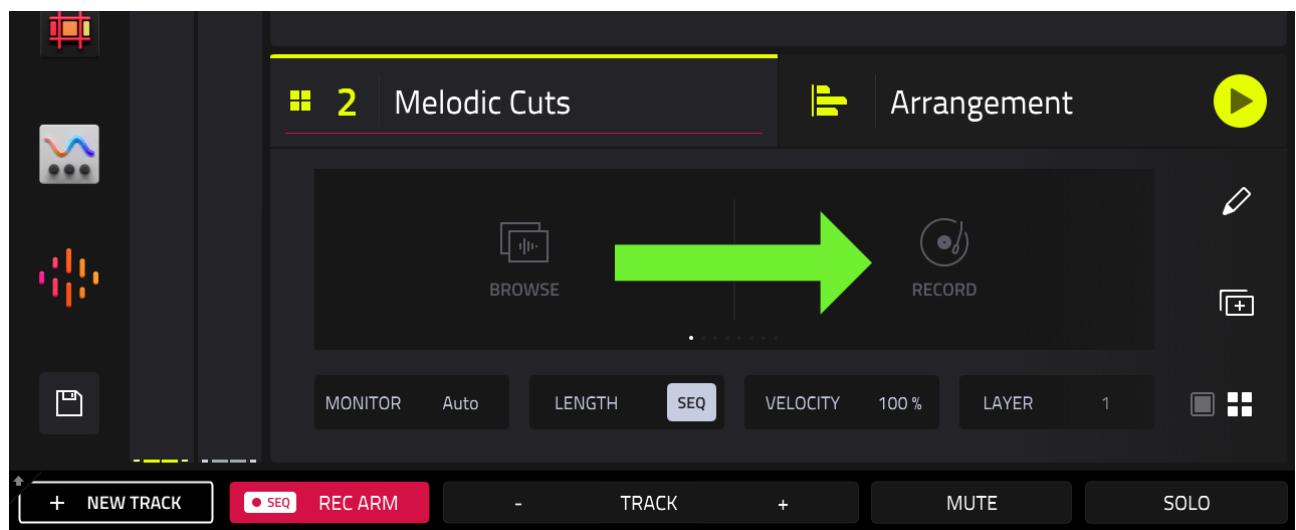


This ensures that any audio recorded in the MPC is always in 24 bit rather than the lower quality 16 bit.

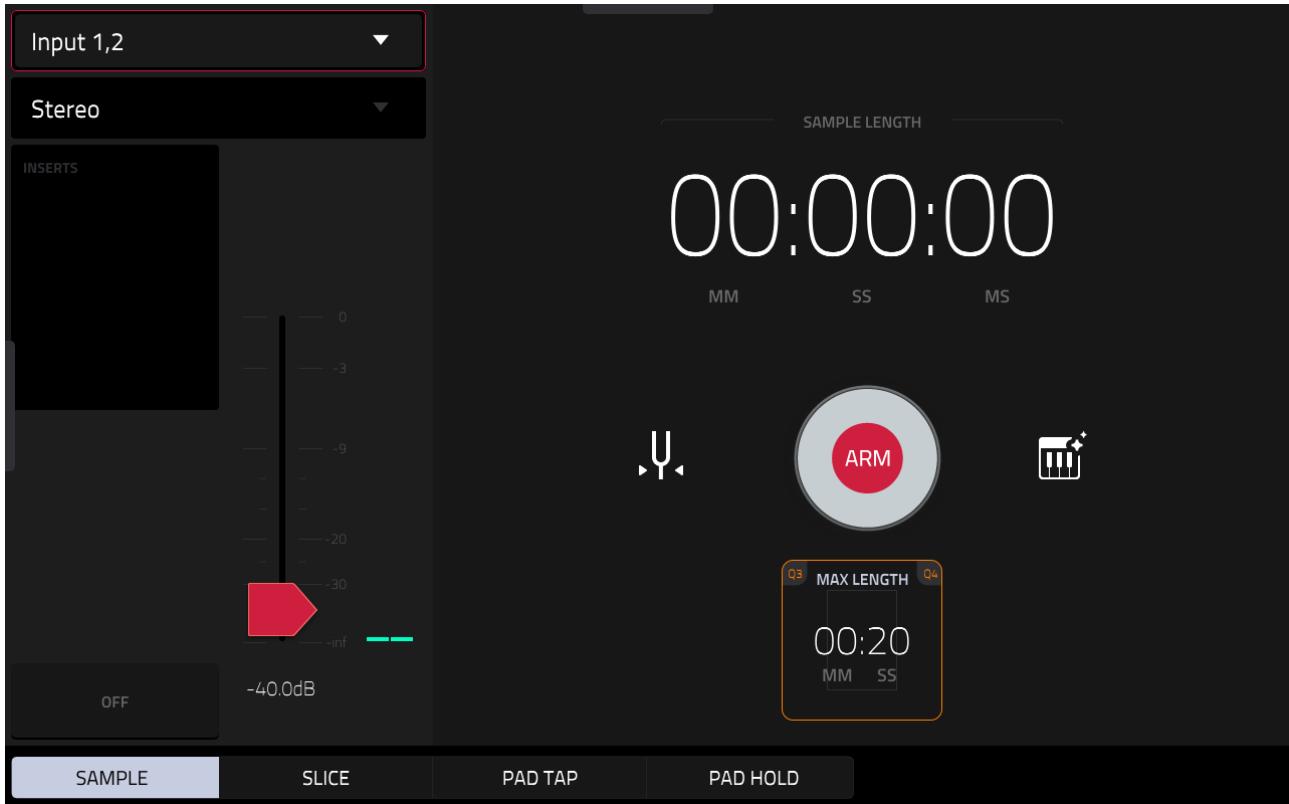
The primary way to sample audio in the MPC is to use the SAMPLER. Your MPC model may have a dedicated **[SAMPLER]** button or possibly a

secondary **{SAMPLER}** button (for example, **[SHIFT]** + **[MIX]** on the MPC Live 2).

Otherwise you can go to **[MENU]** > **SAMPLER**. Alternatively from the **[MAIN]** screen you can tap any empty pad on a DRUM track and you'll see a **RECORD** icon appear in the track tab:



All these options take you to the same **SAMPLER** screen:



Any audio we record in this screen is automatically converted to a sample and held in the sample pool within our current project – at which point we can treat it just like we would any other sample e.g. assign to pads, layered, processed etc.

First we need to tell the MPC where our incoming audio is being routed to. The default '**INPUT SOURCE**' setting of '**Input 1,2**' is usually the one to use unless you have an MPC X and connected your turntable to recording inputs '3 & 4' in which case you should of course set this to '**Input 3,4**'.

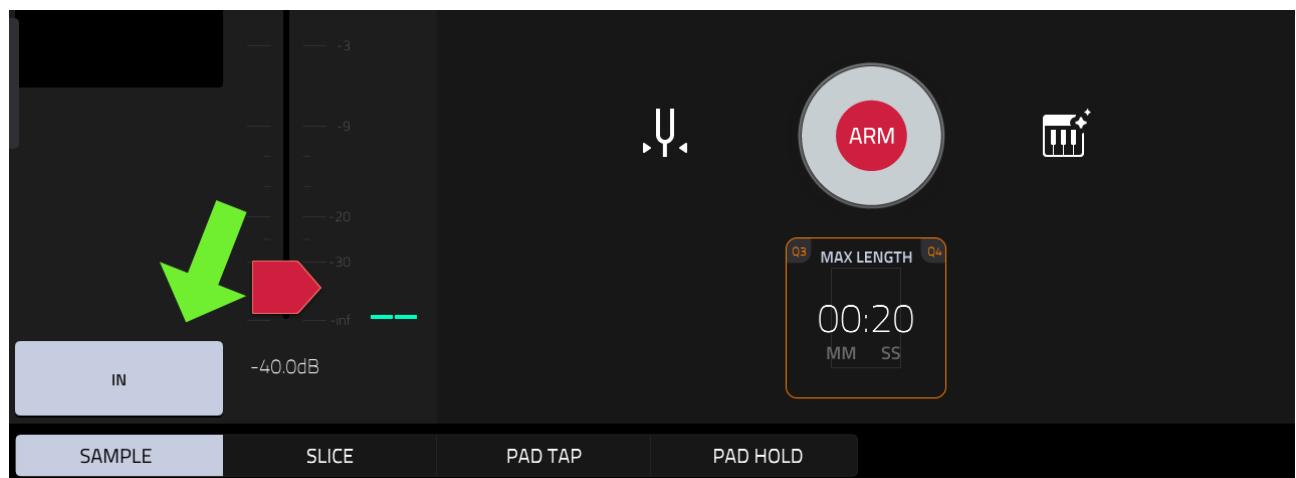


It's important to note that Akai sometimes physically label the '1 & 2' recording inputs as 'L' and 'R'.

By selecting a 'stereo pair' of inputs like this you will ensure that the MPC is sampling ('recording') both left and right channels of that incoming signal.

Underneath is the '**Output**' parameter which defines whether the sample produced by the MPC during the recording process is either '**Mono**' or '**Stereo**', and in normal usage should match the number of channels used in the 'Input' section, so for a typical vinyl recording session, set this to **Stereo**.

Next you'll need to decide how you wish to **monitor** the audio you are sampling. Remember that the main audio outputs of your turntable are now being routed to your MPC, not their normal audio route (e.g. via a mixer or amplifier). To monitor the audio through your MPC just set **MONITOR** from OFF to **IN**:



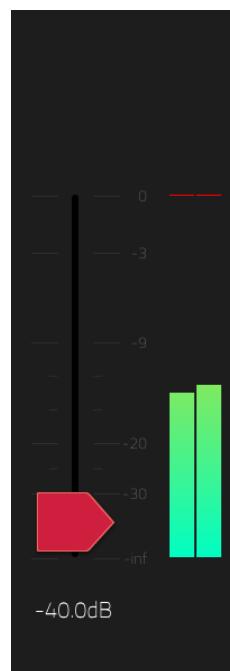
Now any audio coming from your turntable will be heard through your MPC audio outputs (and through the MPC headphone output).



The **INSERTS** box here can be used to apply FX to the incoming audio. We'll be looking at FX as we progress through the course, but for the moment I recommend you just ignore the FX options.

The volume of the audio signal coming into your MPC is controlled by the (REC VOL) dial which is either found on the back of your MPC or on the top panel (e.g. MPC X). Turning this dial clockwise will increase the amount of gain added to the incoming signal, which in turn is going to increase any inherent noise in that signal (e.g. background hiss, hum etc).

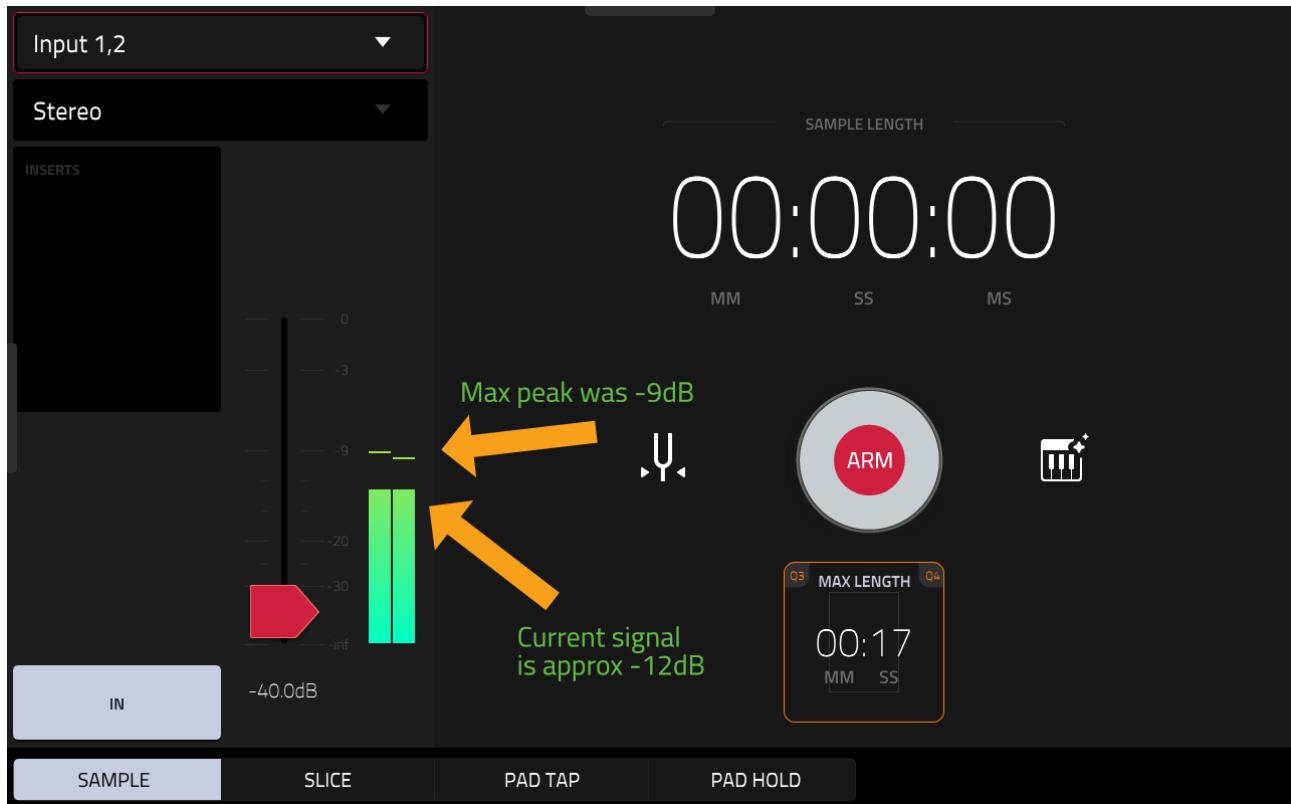
It's important to manage the level of the incoming signal as we definitely don't want it to clip or distort. The level of the incoming audio signal is shown by the **LEVEL METER**:



Any signal exceeding 0dB is going to distort to some degree (and digital distortion tends to sound really bad), and generally speaking we should try to stay comfortably away from that absolute maximum level. When recording in 24 bit we should be fine keeping the maximum incoming signal level no more than **-12dB**.

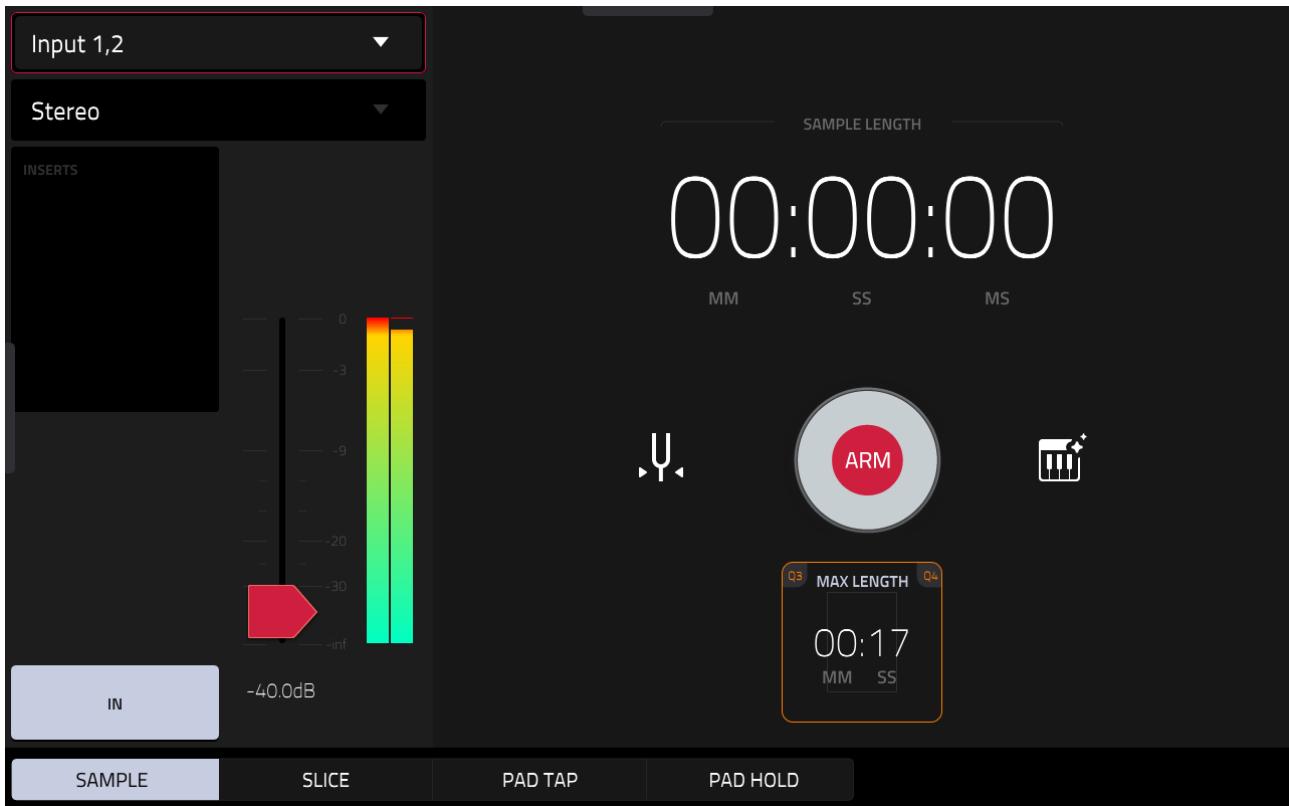
To set a suitable incoming level, always start with the (REC VOL) dial on your MPC turned down to zero so we can avoid any unexpected pops or bangs which could blow your speakers. If you are running through a DJ mixer then make sure you first set the volume channel slider to the maximum level. Then set the 'gain' controls on your mixer to approximately the midway point. If sampling from a smartphone, set your phone's output volume to the maximum setting.

Begin playing your audio source and gradually turn the (REC VOL) dial on your MPC to increase the incoming recording level. With **MONITOR** set to **IN**, you should begin to hear your audio as well as observe the level meter in the sampling screen rising and falling.



Gradually bring up the (REC VOL), stopping once the signal is peaking at around **-12dB**. You can see the highest level ever reached by the coloured lines at the top of your level meter. In the example above the maximum level was -9dB.

In the example below the signal is clearly too hot and you can also see the red lines at the top of the meter which indicate that it reached at least 0dB.

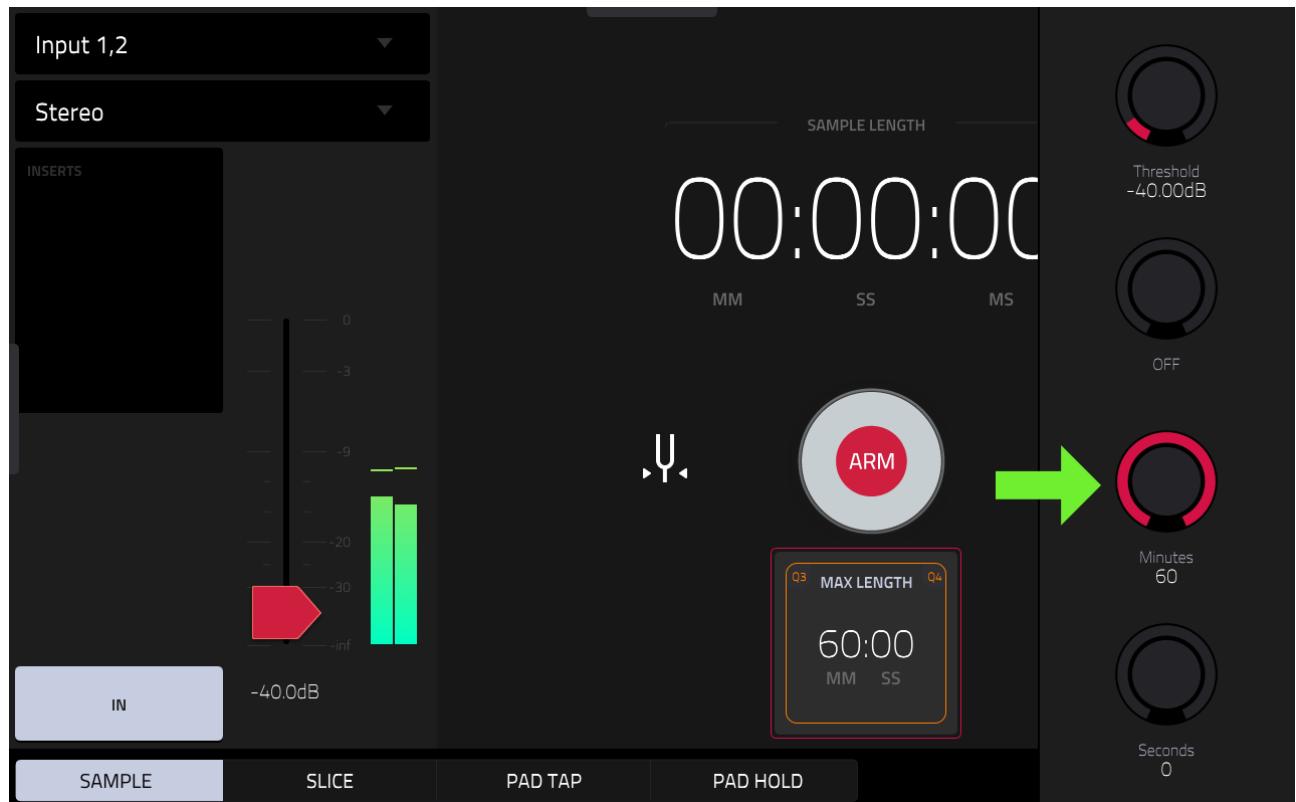


To reset these maximum peak indicators, just double tap anywhere on the level meter.

MAX LENGTH controls the longest possible recording time for each individual sampling attempt; once recording reaches the defined MAX LENGTH, recording will stop automatically.

When sampling cuts you'll be recording snippets of audio each of variable, unknown lengths so it's better to stop each individual recording manually. So for this particular workflow I would suggest you set the **MAX LENGTH** to something comfortably long to ensure your sampler never stops while you are recording a particularly long cut; typically I just set it to the maximum value of **60 minutes**.

The quickest way to change MAX LENGTH is to use the Q-LINKS; '**minutes**' is controlled by (Q-LINK 3) and '**seconds**' by (Q-LINK 4):



The **Threshold** level is represented by the red arrow on the level meter, this can be used to only allow recording once the input signal exceeds a specific volume level . For a typical vinyl recording session, where we will be manually triggering recording whenever we find a useful cut, I recommend you set **THRESHOLD** to the very lowest setting (**-40.0 dB**), which disables this feature.



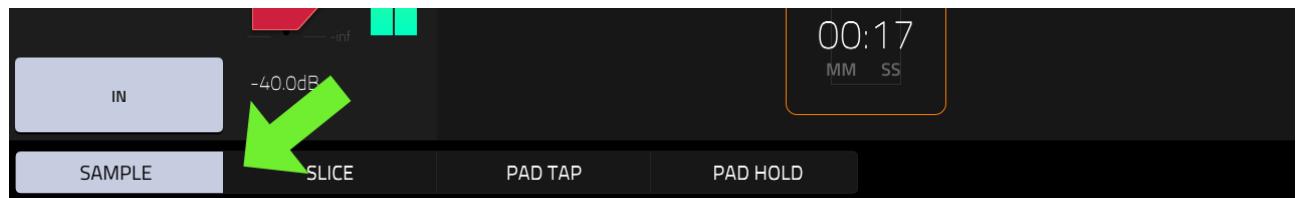
THRESHOLD is often used in combination with MAX LENGTH to help automate recording of many individual instrument notes ('multisampling'), or in combination with the sampler's 'arming'

feature in instances where we don't have any hands available to manually trigger recording (e.g. if you were sampling yourself playing guitar) - we'll be multisampling in Section C!

TRADITIONAL VINYL SAMPLING WORKFLOW

There are actually several unique workflows that we can use when sampling from records. In this section I want to focus on techniques that will produce a bunch of unique, individual samples from our recording (we'll be looking at the 'chopping' focused workflows in Section C).

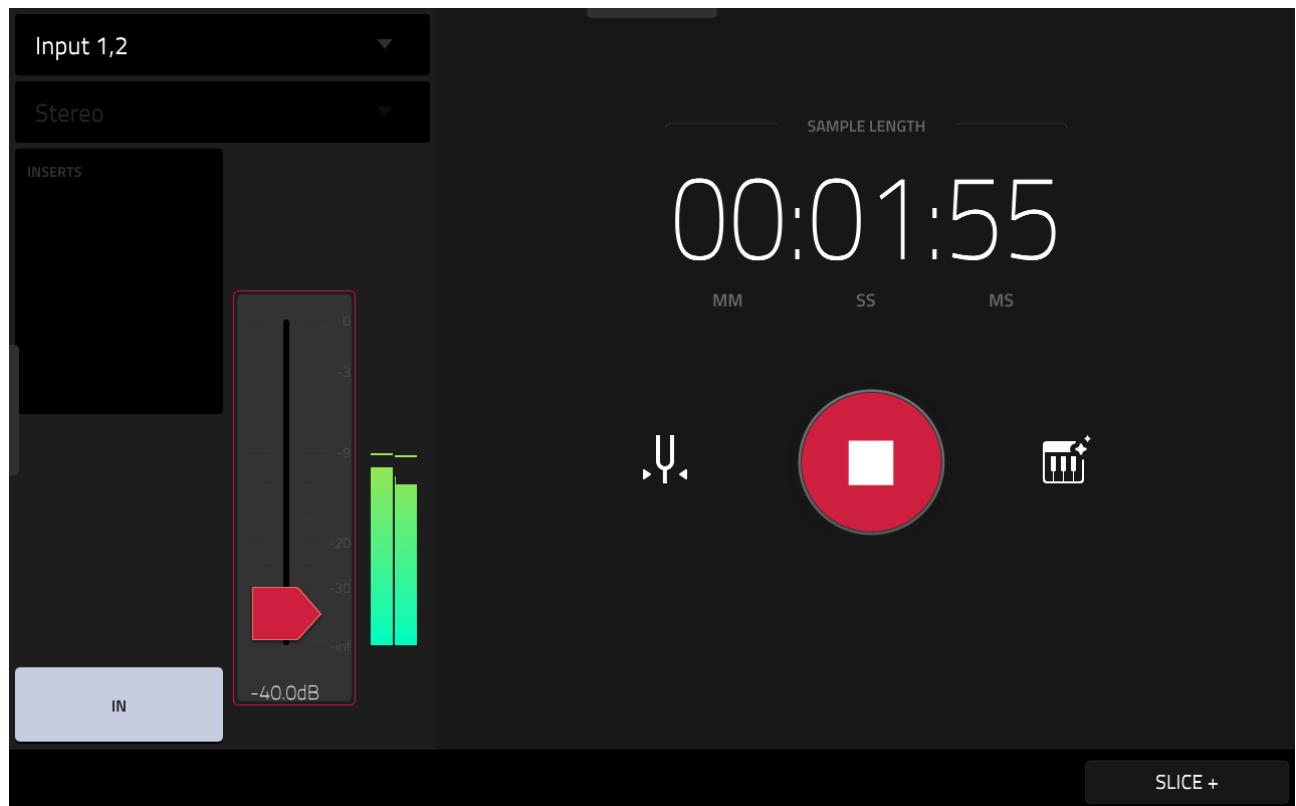
The 'classic' vinyl sampling workflow is very simple. First make sure the **SAMPLE** button is active at the bottom of the screen (it will be by default):



With vinyl I'll use one hand to continually drop the needle up and down on my turntable, to 'explore' the record looking for potential cuts. When I hear something interesting, I take the needle back slightly and drop it back down (or spin the record back), and then hit the **ARM** button in the MPC sampler with my other hand.

As **THRESHOLD** is set to **-40.0 dB** (effectively 'no threshold'), the MPC will immediately start recording.

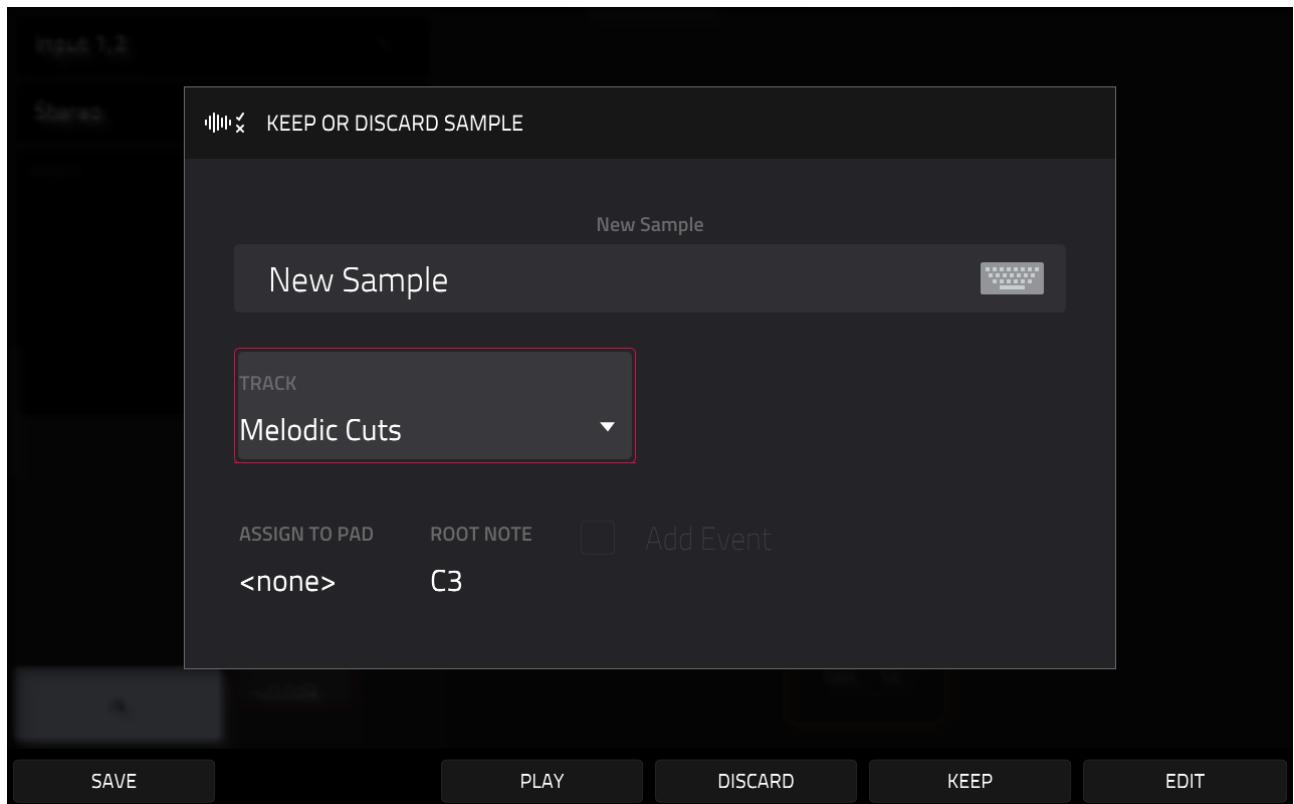
At this point you'll see the ARM icon change to a '**STOP**' icon and the **SAMPLE LENGTH** parameter will begin to display the current length of the actively recorded sample:



Once I've captured enough of that cut I press the '**STOP**' icon on screen and the MPC immediately stops recording. You can then hit the STOP button on your turntable/phone (or just let it continue playing – you'll hear it, but nothing will currently be recorded).

At this stage of the sampling process it's absolutely no problem if you record some 'excess' before and after your audio segment; it's better to record a bit too much than too little, and later we'll be able to tidy up our samples if required.

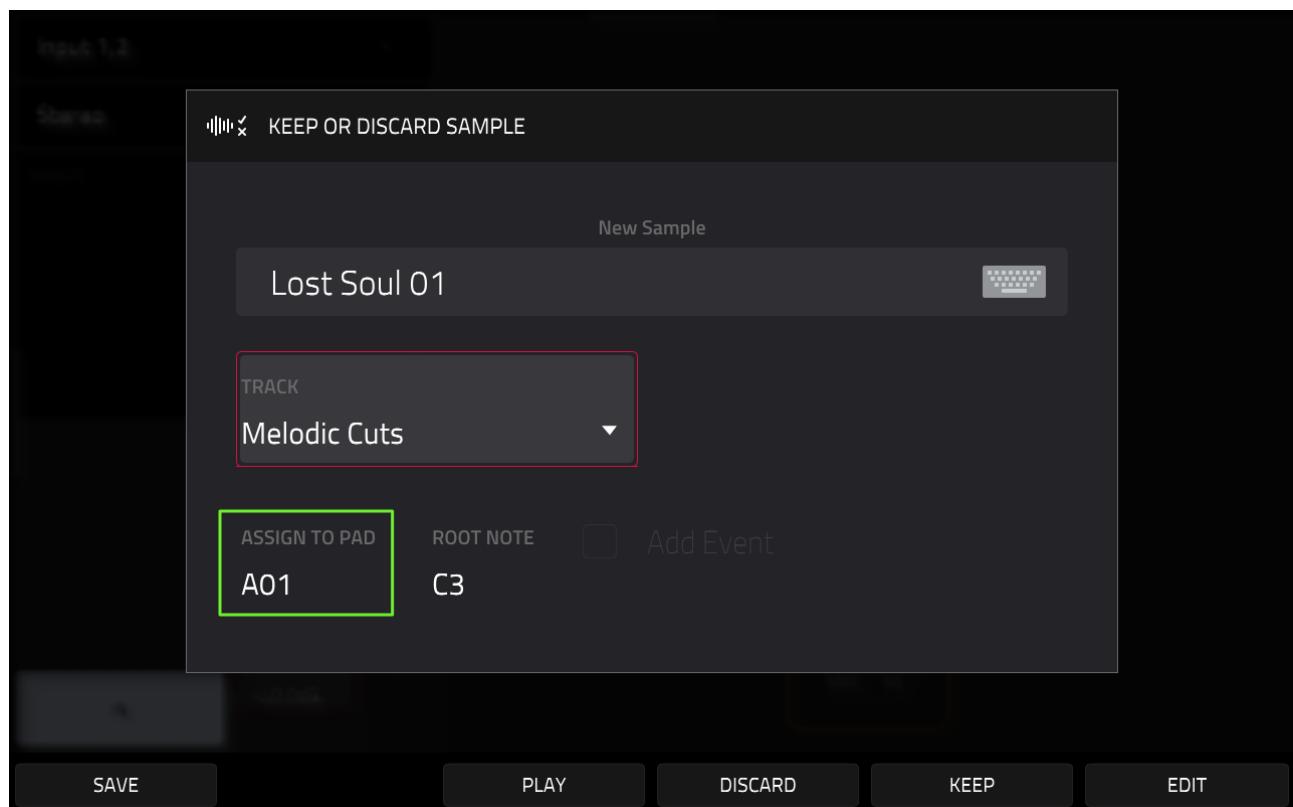
After successfully sampling your cut, you will see the following '**KEEP OR DISCARD SAMPLE**' screen:



Press **PLAY** to preview the recording you just made. If you don't like what you hear, simply press **DISCARD** and you can start the sampling process again.

If you want to keep the sample, think about giving it a descriptive name so that you can remember the song and/or artist it came from. Touch the 'keyboard' icon to the right of the current sample name to bring up the keyboard, enter the name and hit **DO IT**. Any subsequent samples you record in this session will automatically use the last name entered but with an incrementing number appended to the end of the file name (e.g. Lost Soul 01, Lost Soul 02 and so on).

If you just want to put the sample into your project 'SAMPLE POOL', just hit **KEEP**. Alternatively tap pad **[A01]** and you'll see **ASSIGN TO PAD** change from 'None' to **A01**.



Now when you press **KEEP** your sample will be assigned to pad [A01] in the track listed in the **TRACK** field (which will default to the currently selected track in MAIN – in this case, track 2, **Melodic Cuts**). It will also of course also be available in the project's overall sample pool. But if you are unsure, just leave it as '<none>' as you can always assign it to a pad later.

After pressing **KEEP** you are returned back to the main SAMPLER screen where you can continue recording cuts. This time the process will be a little quicker as the MPC will automatically name your sample for you each

time, but you can of course override this name whenever you need to. If you are using the ASSIGN TO PAD option notice that any already assigned pads on this screen will be lit in yellow so you don't accidentally override the existing pad assignment.

By the end of this process you will have many newly recorded samples in your project's sample pool, so make sure you re-save the project, thus safely storing all those samples to disk.



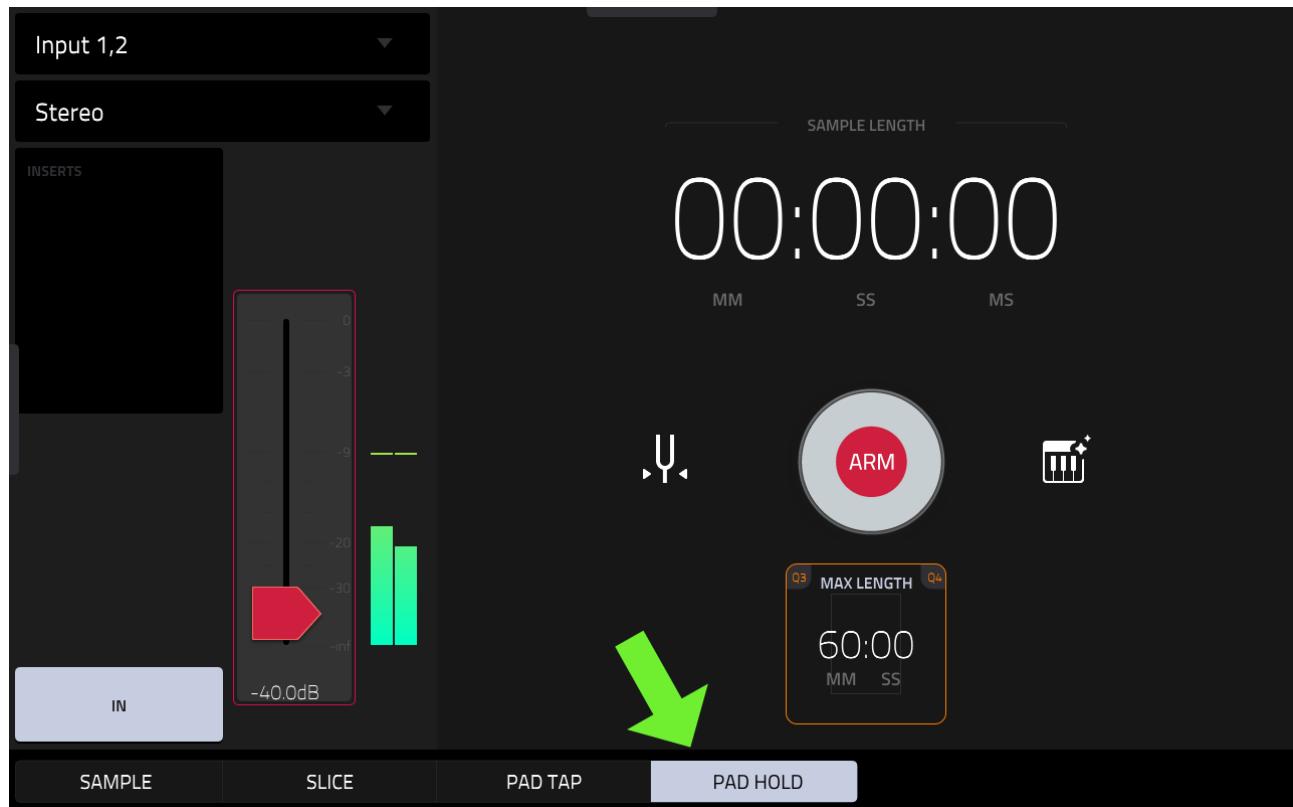
Remember, this workflow is not just limited to sampling from vinyl, you can substitute any audio source such as a smartphone, CD player, computer, tape deck and so on.

THE PAD HOLD HACK

As we've seen, the 'KEEP OR DISCARD' screen gives you a chance to preview, name, assign your sample to pad or even discard your newly recorded sample. However, if you just want to quickly record a bunch of cuts from one or more records it's often overkill to have to go through this laborious process each time you record a sample.

There is a little hack that will speed up this process for us without leaving the sampler screen. First, let's assume you have a new record to 'explore'. As before, make sure the **SAMPLE** button is engaged and record your first sample by hitting **ARM** then **STOP**; on the **KEEP OR DISCARD** screen set a name and select **KEEP**.

Now tap on the **PAD HOLD** button:



At this point you can continue to record your samples by hitting **ARM** to instigate recording, then pressing **STOP** to stop the recording. However, with PAD HOLD engaged, you'll never see the 'KEEP OR DISCARD' screen. Instead, the MPC simply automatically names and 'keeps' each sample the moment you press STOP – It will use the original name you entered 'plus 1'.

This workflow offers a very quick way to record multiple samples directly into your project, but it doesn't give you the opportunity to preview or discard, so you'll have to do all that later.

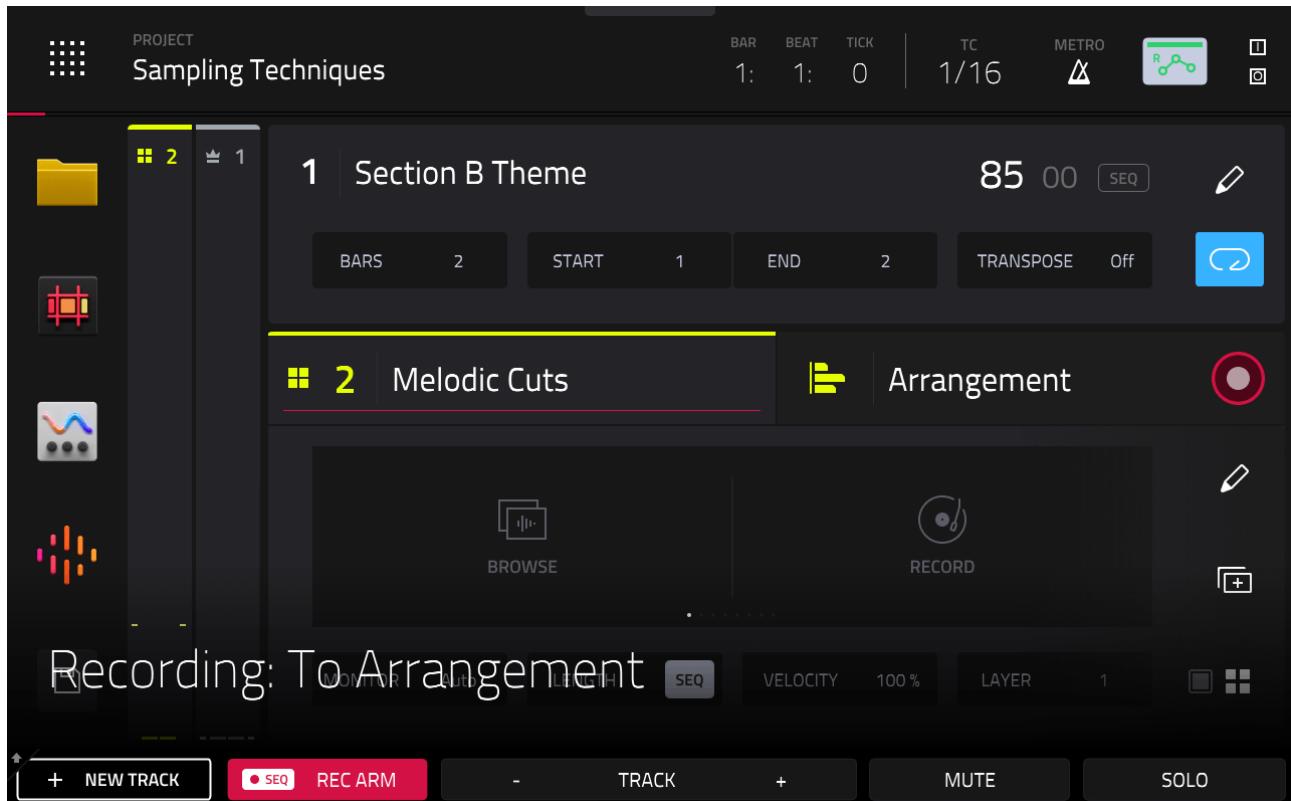


To speed this up even more, just start using the PAD HOLD option from the very first step. In this case the MPC will just use whatever sample name you may have entered in any previous sampling session, or if this is a new session, it will use Sample 01, Sample 02, etc.

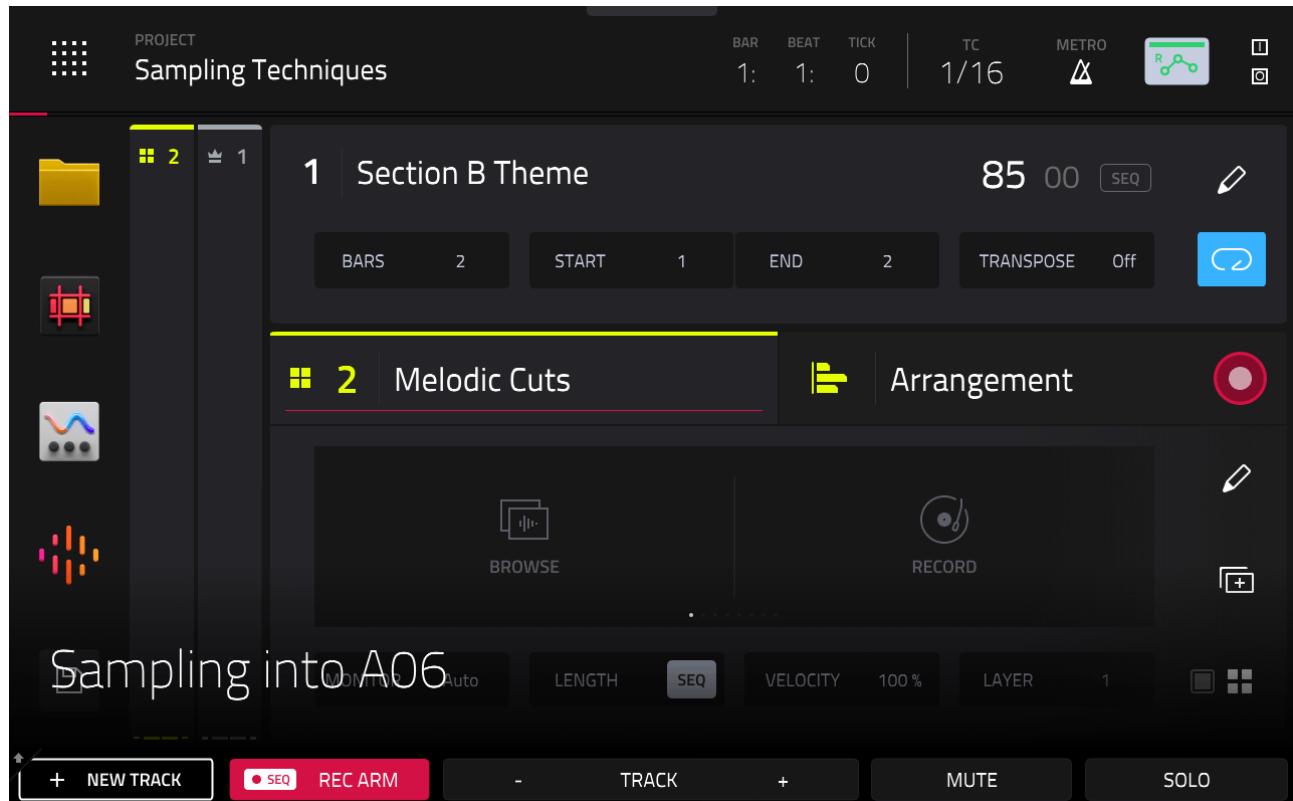
SAMPLE-TO-PAD WORKFLOW

Another way to quickly record multiple cuts from a record is by sampling directly to the pads in the current DRUM track. First configure the desired recording settings in SAMPLER screen as you did before (i.e. recording inputs, max length, threshold, monitor etc).

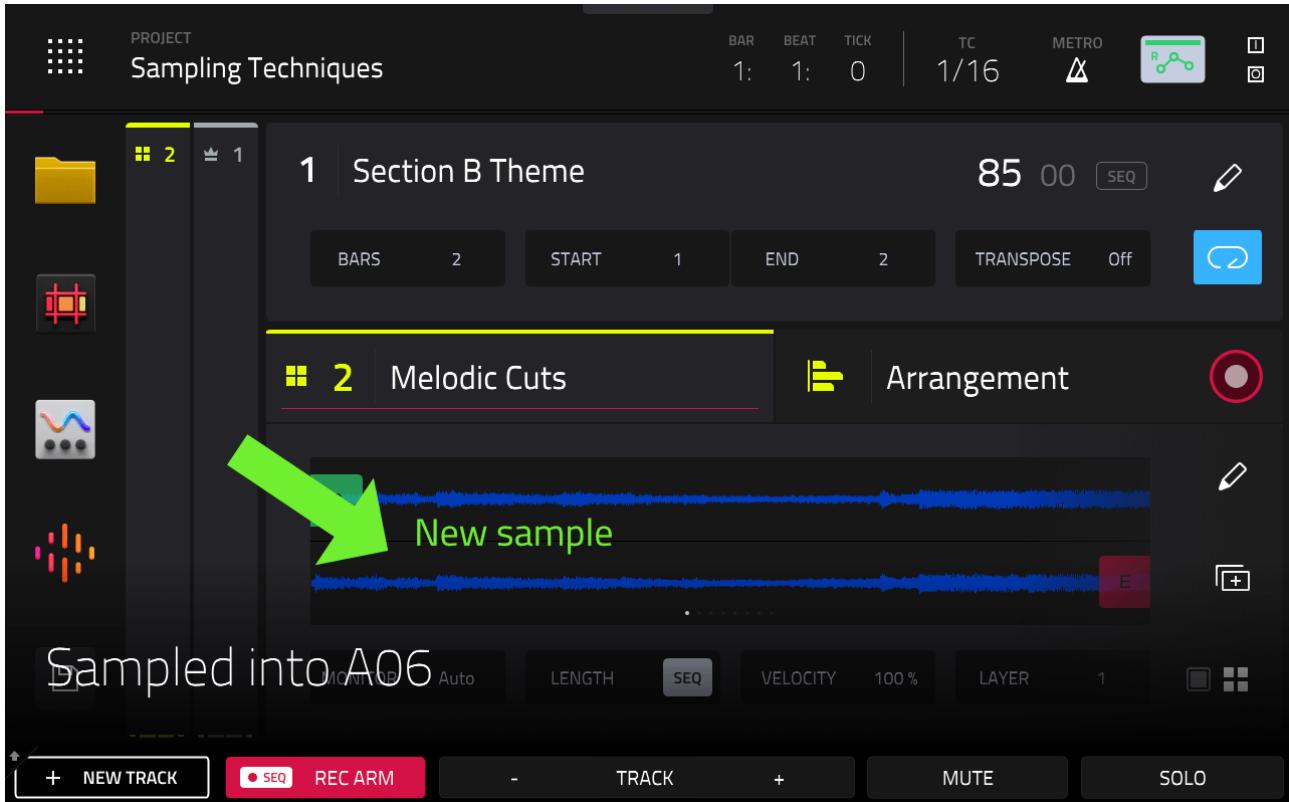
Now go to [**MAIN**] and ensure your **Sample Cuts** track is still enabled. Press the physical [**REC**] button and the message '**Recording to Arrangement**' should appear on screen.



Begin to explore your record and when you find a section that you wish to sample, hit the pad you wish to sample to, for example, pad [A06]. You'll now see the message '**Sampling into A06**' and pad [A06] will begin to flash:



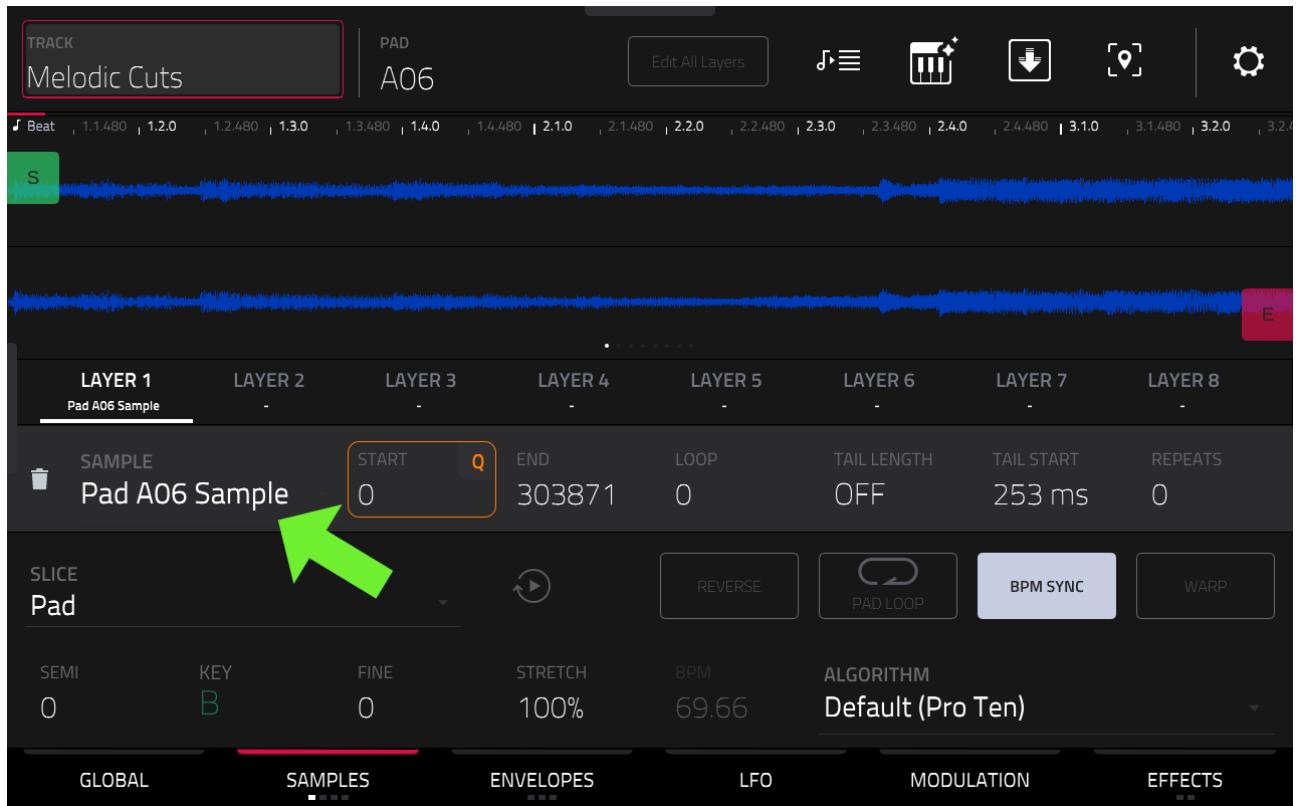
At this point the MPC is actively recording; to stop recording hit pad [A06] again and you'll see the message '**Sampled into A06**':



Your sample is now simultaneously recorded and assigned to pad [A06] in the current track. Now continue to explore your record and when you are ready to record the next cut, just hit pad [A07] to begin recording this next cut to pad [A07]; press [A07] again to stop sampling to it.

Repeat for all the cuts you need to record. If you run out of pads in BANK A, hit the [**BANK B**] button and start recording on pad [B01]. The MPC won't let you sample over any pad that already contains a sample – in these cases it just plays back the pad instead.

Once you've finished the entire sampling session, press the [**STOP**] button to leave 'sample to pad' mode. Head over to **TRACK EDIT > SAMPLES** to check out some of the pads:



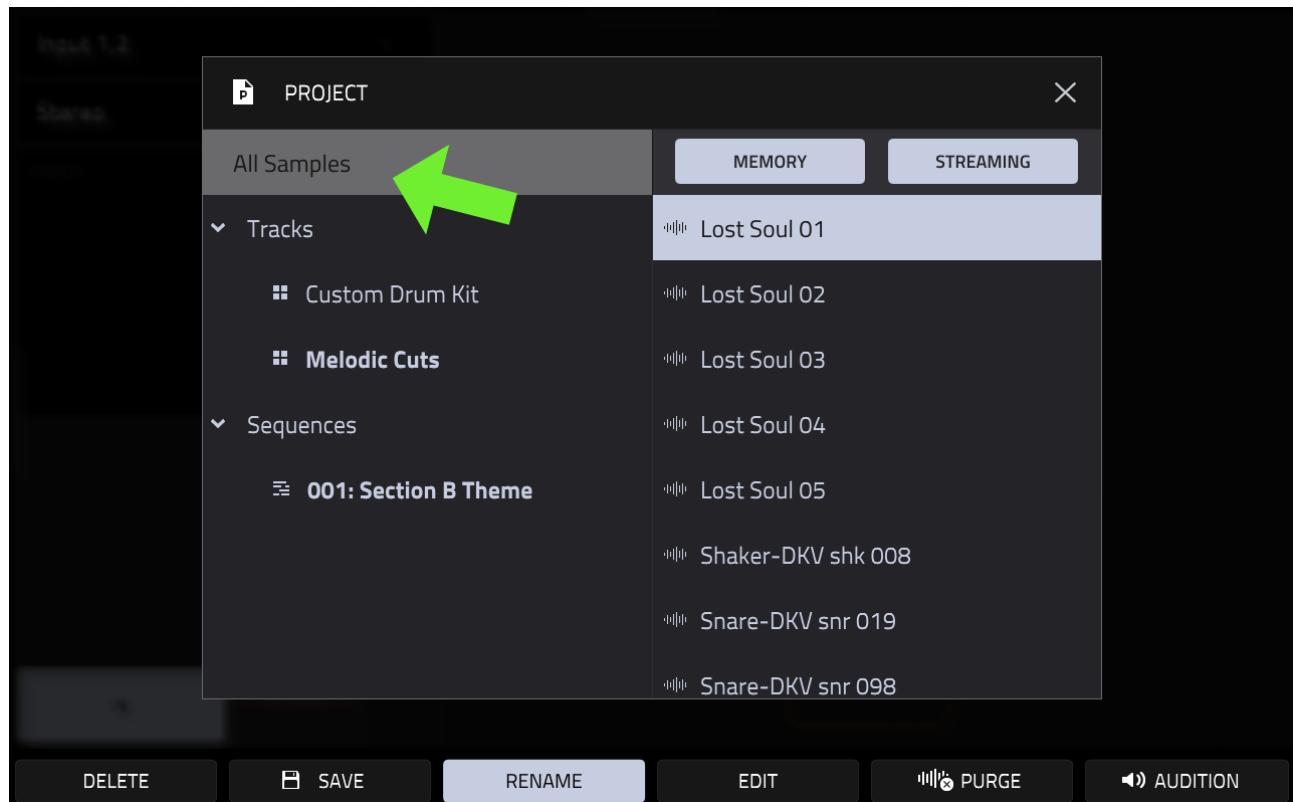
This pad-to-sample method is a great way to record multiple individual samples while simultaneously assigning them to the pads in a kit.

However, it's worth noting that this method allows no control whatsoever over the name used for each sample - as you can see, this method uses an automated name ('**Pad A06 Sample**') and it's currently not possible to change this before recording.

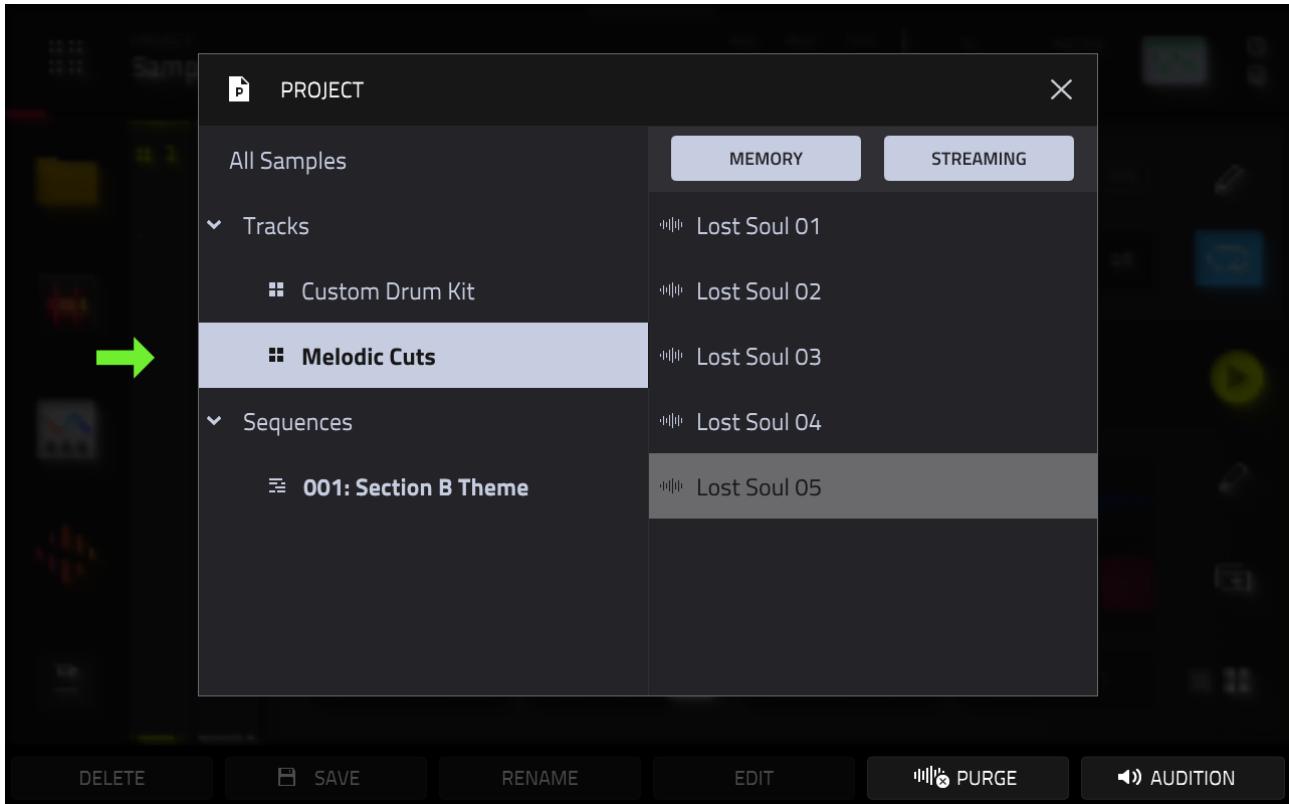
VIEWING THE SAMPLE POOL

After recording your samples you'll eventually want to view, edit and manipulate them, and we'll be looking at ways to achieve this in the forthcoming chapters in the course. But if you just want a quick overview

of the samples in your sample pool, one option is to head over to [**MENU**] > **PROJECT**:



On the left side of the screen make sure you have '**All Samples**' selected; on the right hand side of the screen you will now see all samples currently sitting within your sample pool. Or if you used the KEEP OR DISCARD screen to assign your cuts directly to a track, tap on the **track name** in the left hand column and the right hand column will now only display the samples assigned to that track:



Tap on any sample to preview it (requires **AUDITION > AUTO**). With any sample selected, the bottom menu bar offers a number of options:



'DELETE' will permanently delete this sample from your sample pool. **SAVE** will give you an opportunity to save just this sample to your disk; if you've already saved your project then the sample itself will already be saved as part of the project, but you could use this to save a separate backup copy (on a different disk for example).

EDIT will take you to the SAMPLE EDIT screen where you can perform various sample processing techniques on this sample (next chapter!).

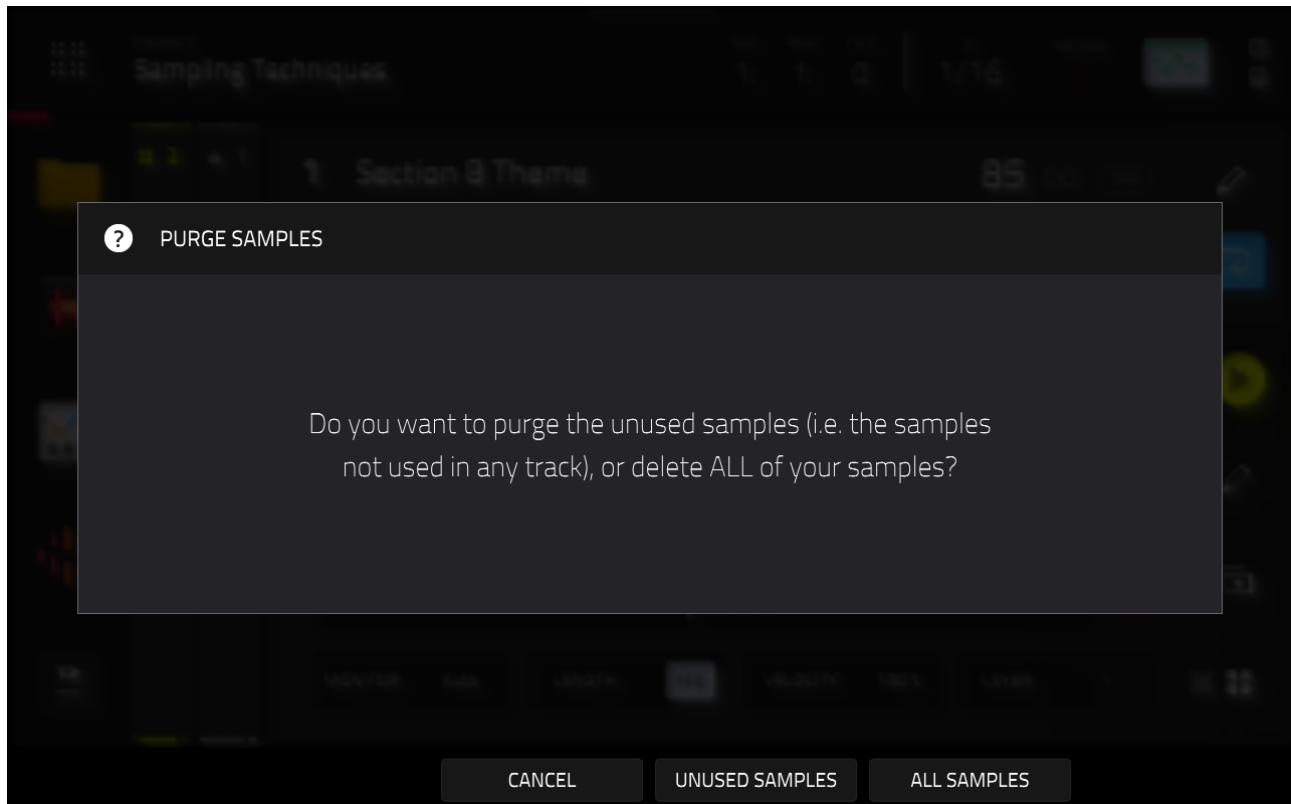
RENAME let's you change the name of the currently selected sample, which is useful when your sampling workflow lead to a bunch of samples with automatically generated names (such as 'Sample 01', 'Sample 02' and so on).

Unfortunately there is currently no way to copy/paste names with the on-screen keyboard so you'll have to manually type these in each time. But if you have a USB or bluetooth 'QWERTY' keyboard, you can actually connect this to your MPC and use this to quickly to enter names whenever you have the onscreen keyboard visible.



Another screen that offers sample renaming is SAMPLE EDIT, where we can also perform a number of useful editing tasks on our newly recorded samples. We'll discover SAMPLE EDIT in the next chapter.

Finally we have the **PURGE** option. This is used to 'mass delete' unused samples from the SAMPLE POOL:



Hitting **UNUSED SAMPLES** is going to delete any samples from the SAMPLE POOL that is not currently assigned to any track. This is useful if you have a whole bunch of unwanted cuts taking up valuable memory space in your project, but obviously use this with caution as once a sample is removed from the sample pool, it's 'gone' - unless you previously saved it to disk (see the workshop at the end of this chapter for more details!).



Hitting ALL SAMPLES is literally going to delete 'all samples' from the sample pool whether they are assigned to a track or not. This is a bit of a nuclear option! I guess you could use it if your entire sampling session was somehow unusable (e.g. too much hum from a poorly configured turntable), but never use this if your project

contains any samples that you want to keep, as all these will be deleted as well.

B06: SAMPLE MANIPULATION

In the previous chapter we learnt how to record or 'sample' cuts from our favourite records. Let's now look at how we can take some of this raw material and begin creating our own unique sounds.

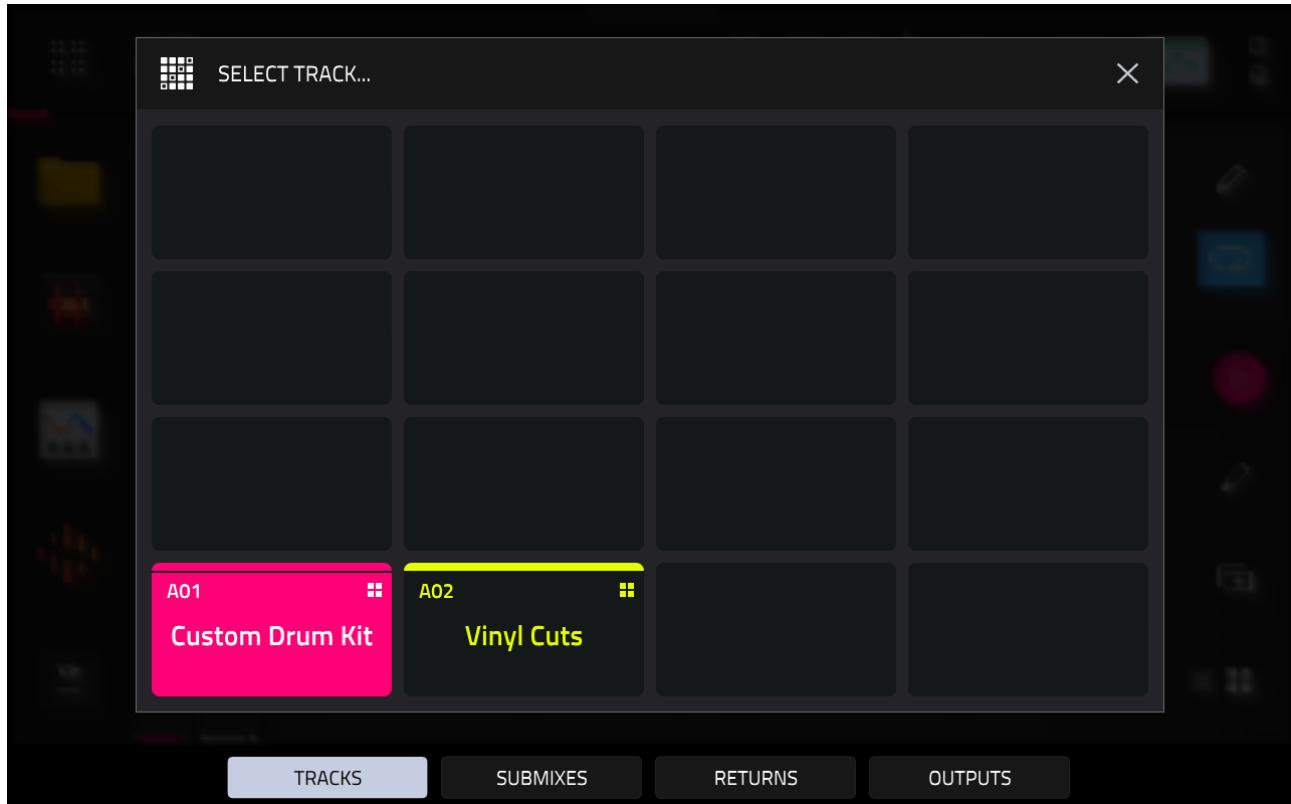
TOPICS COVERED IN THIS CHAPTER

- ✓ Editing and processing samples in SAMPLE EDIT
- ✓ Pad layer editing in DRUM tracks
- ✓ Working with envelopes
- ✓ Creating FX presets & FX Racks
- ✓ Using the LFO

WORKING WITH RAW SAMPLES

Go to **BROWSE** > **MPC Bible 3 Project Files** > **B06** and load the project '**B06 Vinyl Cuts Initial.xpj**'. This project contains the sequence we've working on throughout this section; it also loads up a bunch of cuts I have previously sampled from several records using the techniques described in the previous chapter.

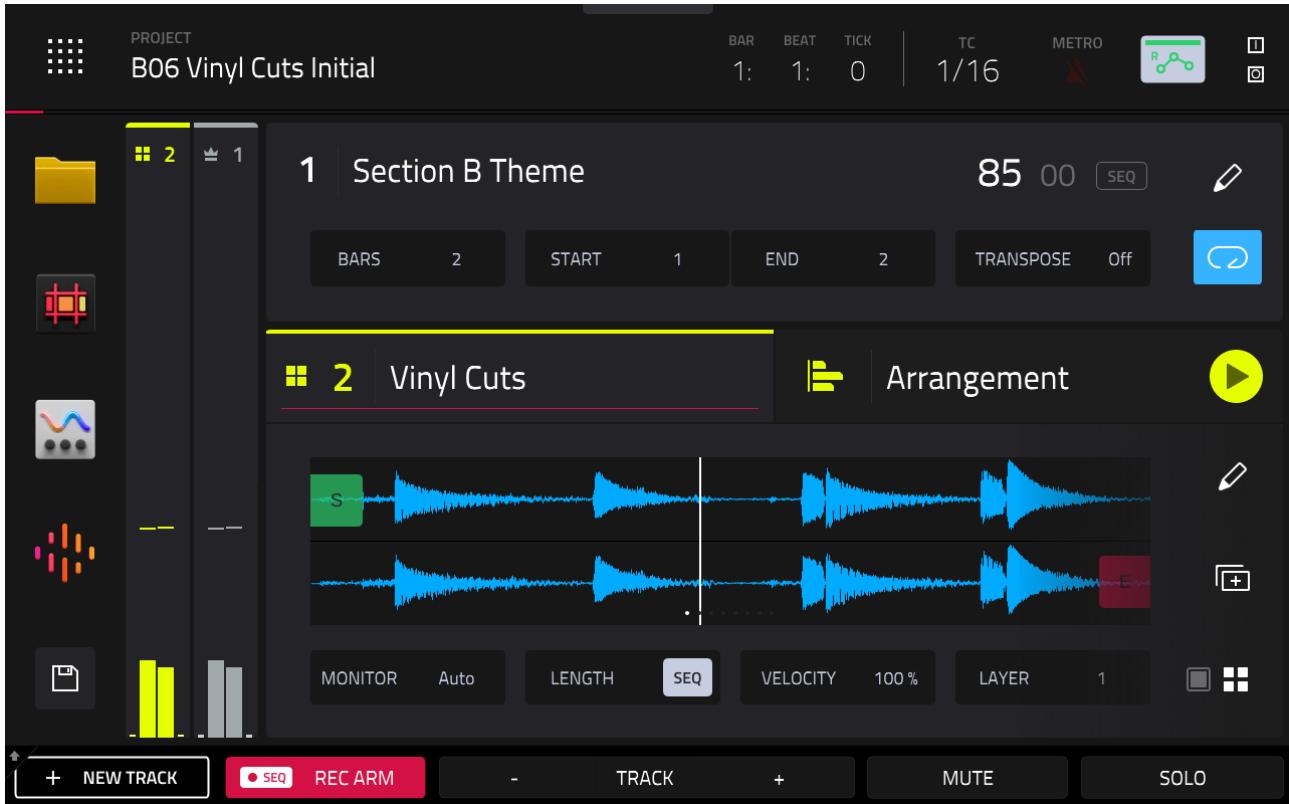
Hold down the [**MAIN**] button to reveal the **TRACK SELECT** dialogue:



Select **track 2 (Vinyl Cuts)** – this track contains a selection of my melodic cuts assigned to various pads in [PAD BANK A]. I have used the **PAD COLOR** screen to configure pad colours using '**Bright > Velocity**', with '**Empty pads off**' so you can easily see which pads are currently unused.

Preview the pads to have a listen to each cut – as you can hear they are all just raw, unedited 'snippets' taken from various records so the next step is to take a closer look at each sample to see what sound design possibilities it can offer us.

In [**MAIN**], select pad [**A13**]:



This is a very noisy and crackly snippet which features a nice, isolated bass line. This seems like a great place to start our sound design experiments, so let's see if we can pull out a nice bass note from this sample.

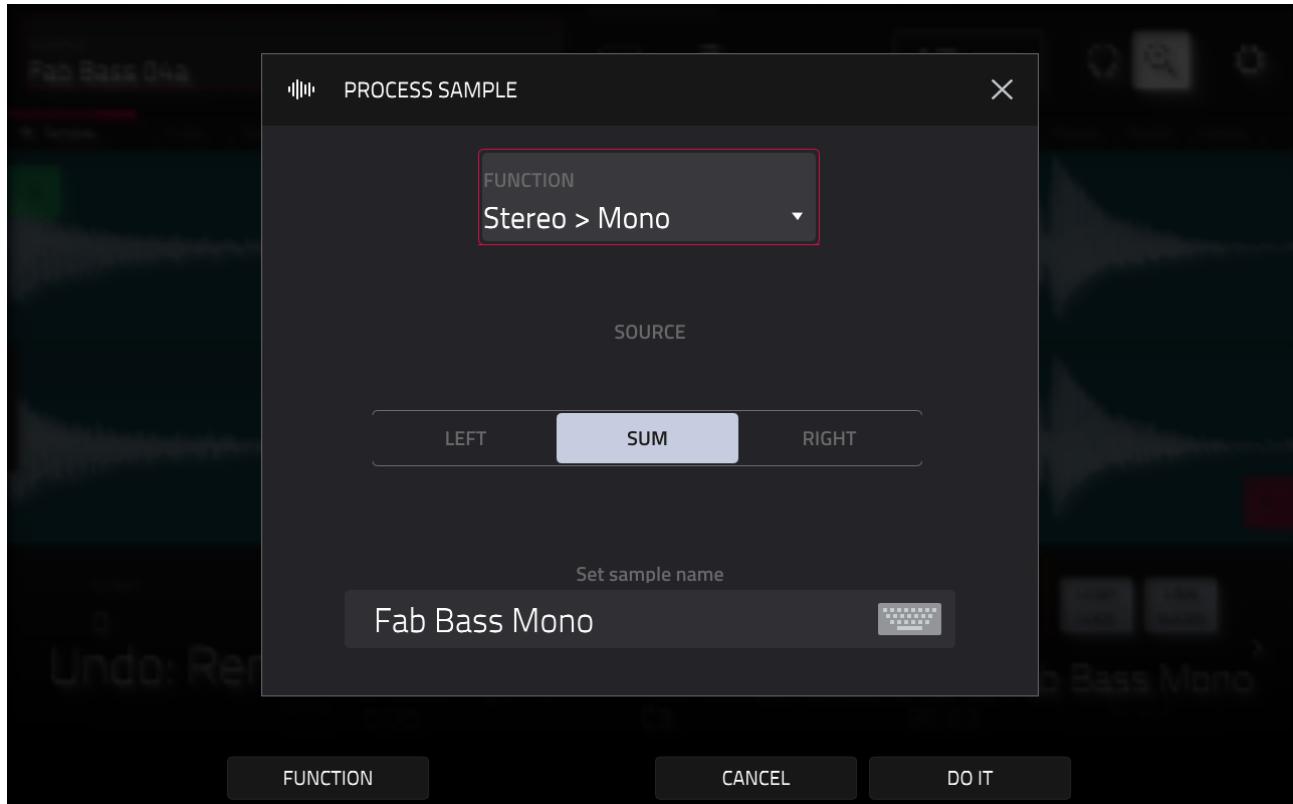
The first thing to notice is that the waveform for this bass line has two channels, hence it is a stereo sample. Generally speaking bass is more powerful in mono, so we'll take this opportunity to convert this stereo sample into a mono sample.

Go to **[MENU] > SAMPLE EDIT**. Alternatively you might have a dedicated **[SAMPLE EDIT]** button on your MPC hardware.



The default SAMPLE EDIT page is called **TRIM** and here we can directly edit the raw sample itself. Any changes we make in this screen will affect all instances of this sample used throughout our project.

To convert our sample to mono, hit the **PROCESS** button. Select **FUNCTION: Stereo > Mono**:



The **SOURCE** parameter lets us select which channels will be used to build the mono sample. The best option here will depend on the source sample, but it's common to use **SUM** which will combine both left and right channels together into a single mono track.

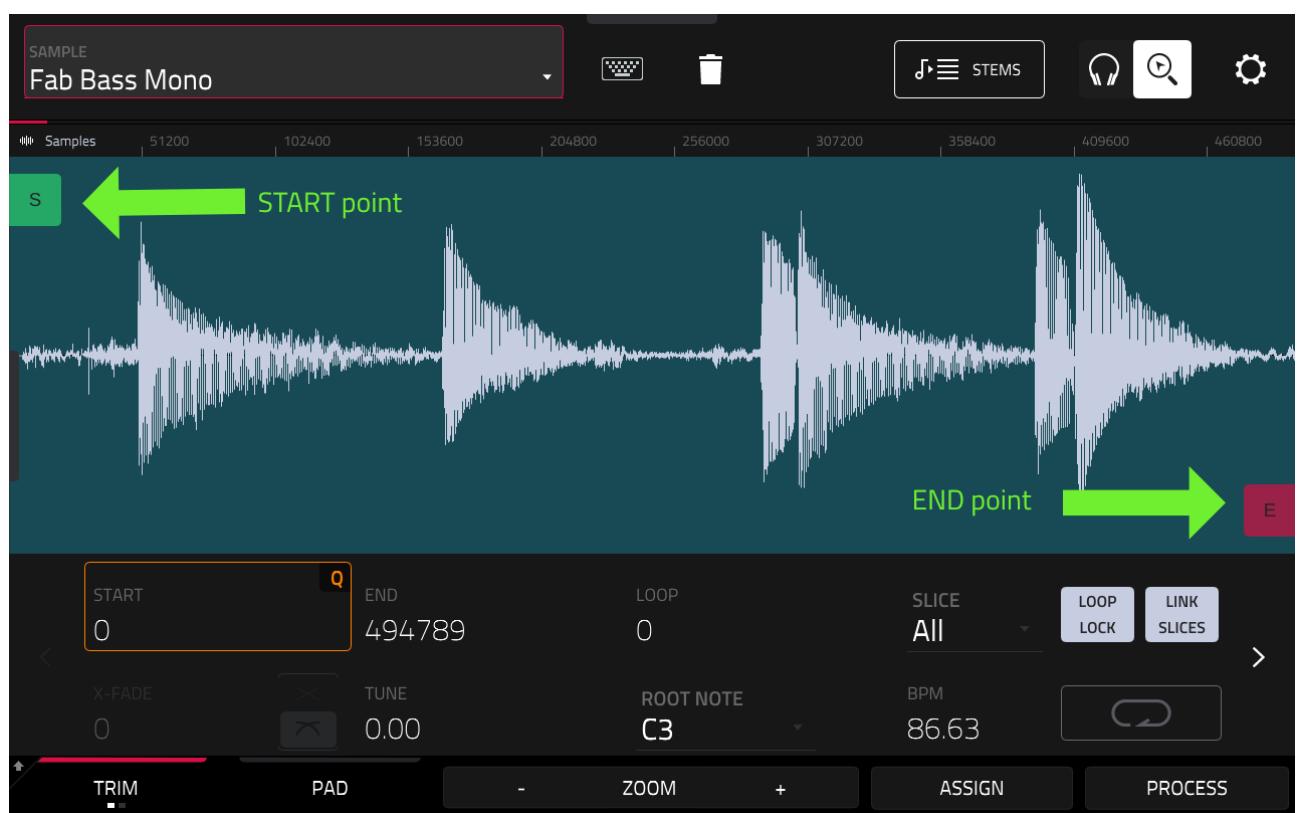


In rare instances, phase issues can mean a 'summed' stereo sample can sound weak and can even become completely silent, in which case hit UNDO and instead choose to use just the left or right channel (whichever one looks the loudest when studying the waveform).

Under '**SET SAMPLE NAME**' choose a name for the new mono sample; '**Fab Bass Mono**'. Hit **DO IT** to create our mono version of the bass sample.

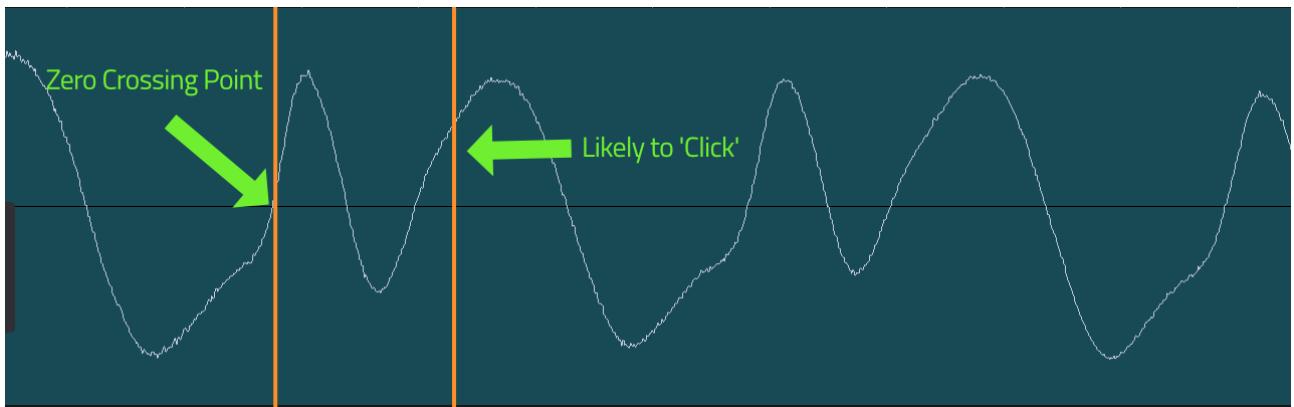
I'm not sure why, but the MPC doesn't take you to the new mono sample, so you'll have to tap on the sample name in the top left of the screen and use the (DATAWHEEL) to locate it (or hit the physical [+] button).

To listen to the new sample, press pad **[A09]**; this gives you a complete 'one shot' preview of the entire sample (you can double press the **[STOP]** transport button to immediately stop playback at any time).

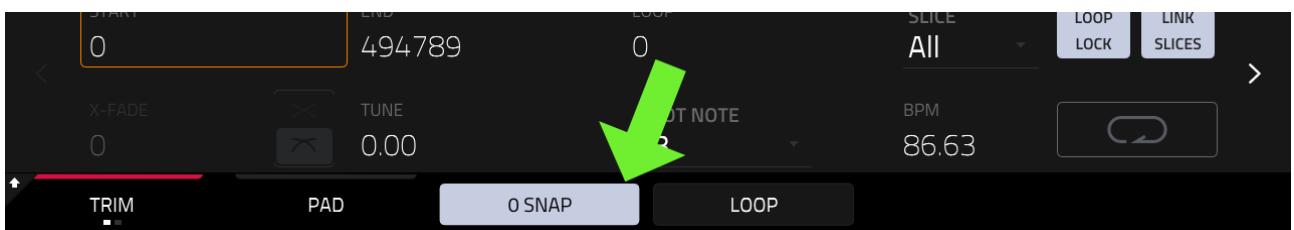


To isolate a single bass note from this riff we simply adjust the sample's START and END points. First, to help automate editing, you can force edit points to always land on the nearest '**zero crossing point**' – this is a point

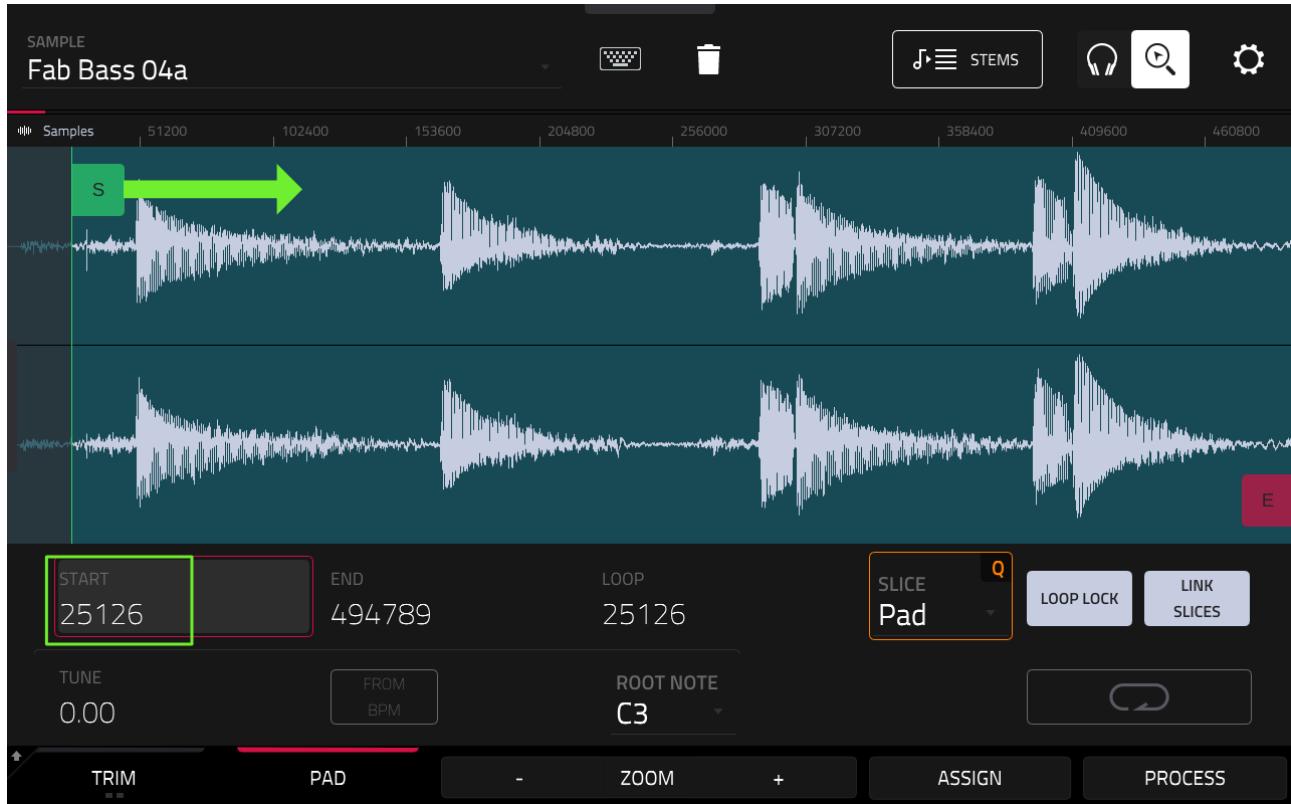
where the waveform literally crosses the zero level axis (the horizontal blank line on screen):



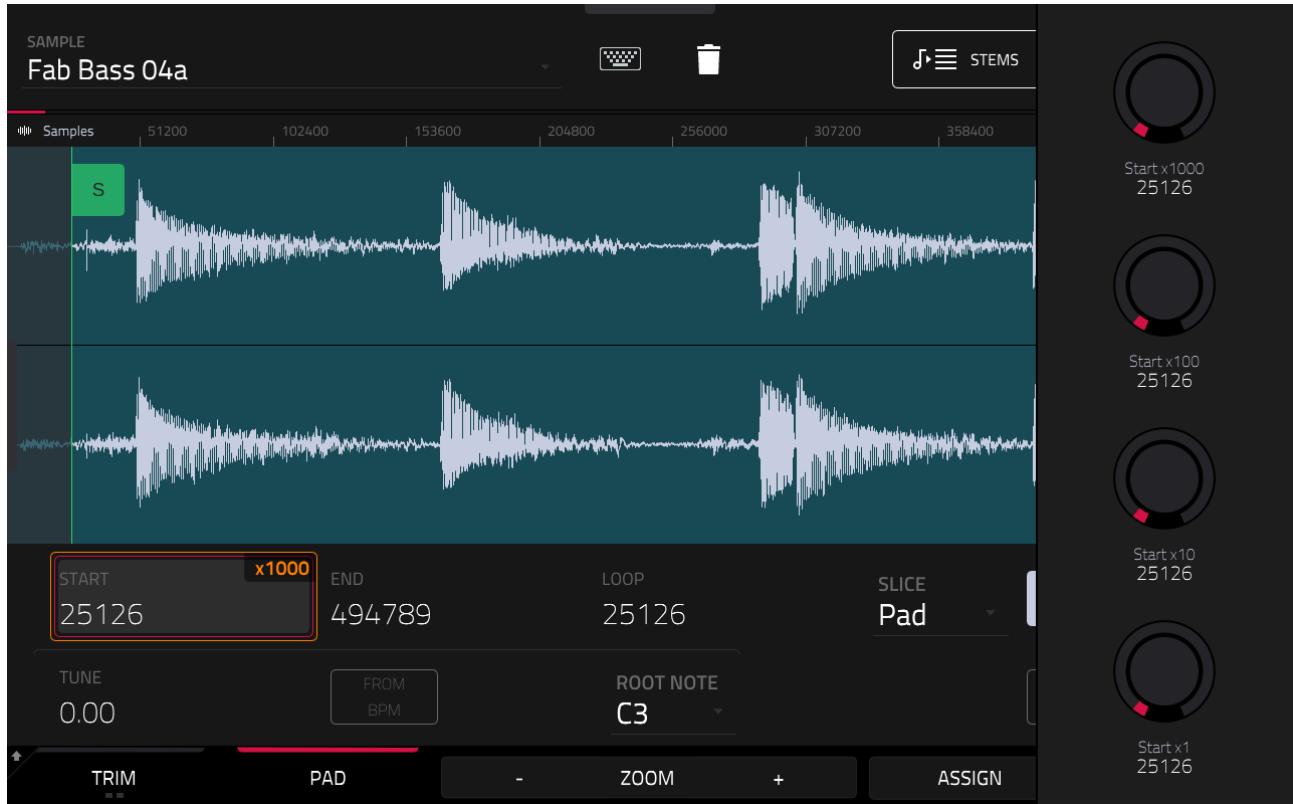
Setting edit points exactly on a zero crossing point will generally help avoid nasty clicks at the start (or end) of your sample playback. Hold down **[SHIFT]** and select **0 SNAP** to turn on zero crossing point editing:



To change the START point you can hold and drag the green '**S**' on the touchscreen, or tap the **START** point parameter and turn the (DATAWHEEL).



You can also use the first column of Q-LINK dials [**Q-LINK BANK 1**] to change the **START** point in varying degrees of resolution.

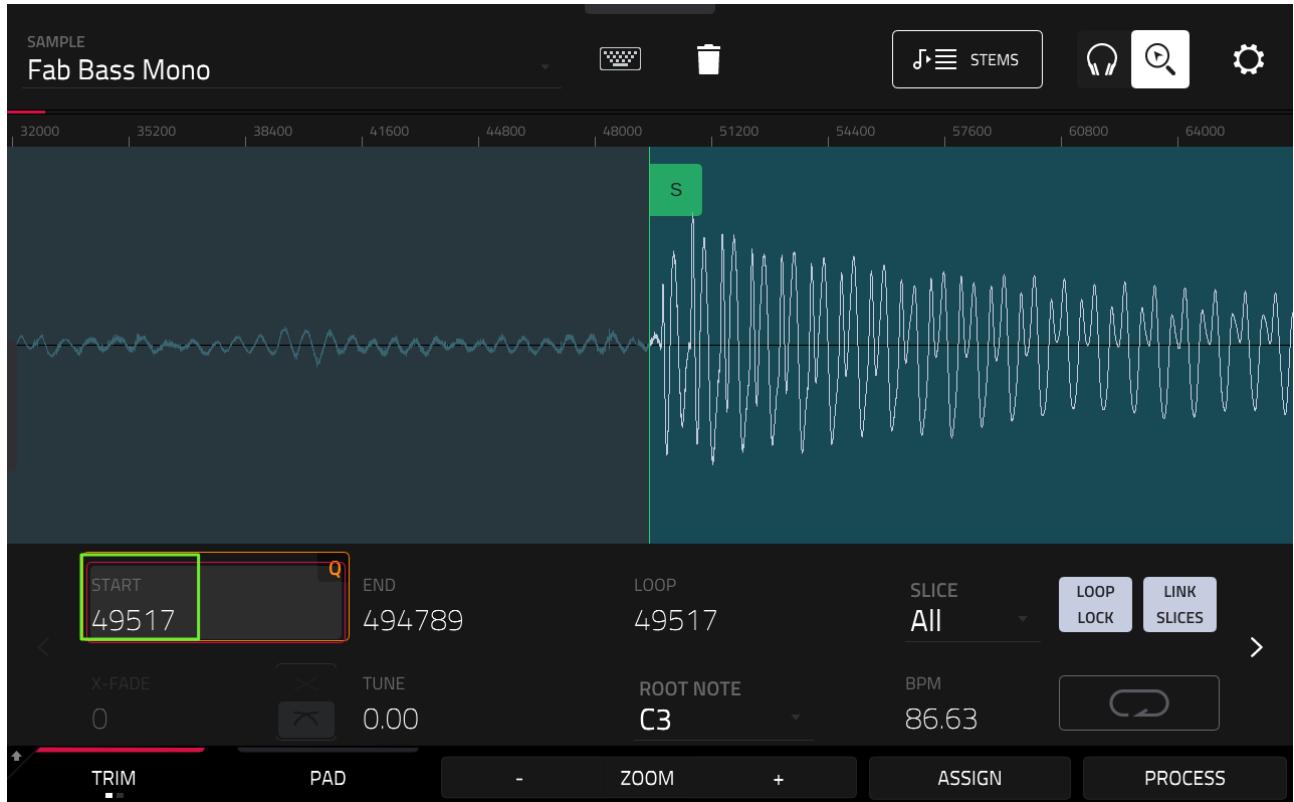


For example, turn the top Q-LINK (Q-LINK 13) clockwise to increase the START point in 1000 units. Use (Q-LINK 1) to fine adjust in single units.

You can magnify the waveform using 'pinch and zoom' on the touchscreen, or tap on the **START** parameter and press the **ZOOM+** button several times (tapping the START parameter before zooming sets a 'zoom focus' for the MPC). As you magnify the waveform, the (DATAWHEEL) resolution gets finer.



Alternatively use (Q-LINK 4) which is the bottom Q-LINK in [Q-LINK BANK 4]. If required, drag your finger left or right to move the waveform, or use (Q-LINK 8)



Set a **START** point of **49517**.

To preview your sample from its current start point, use pad [A10] or press and hold pad [A11] – the preview will only play for as long as you hold down the pad.

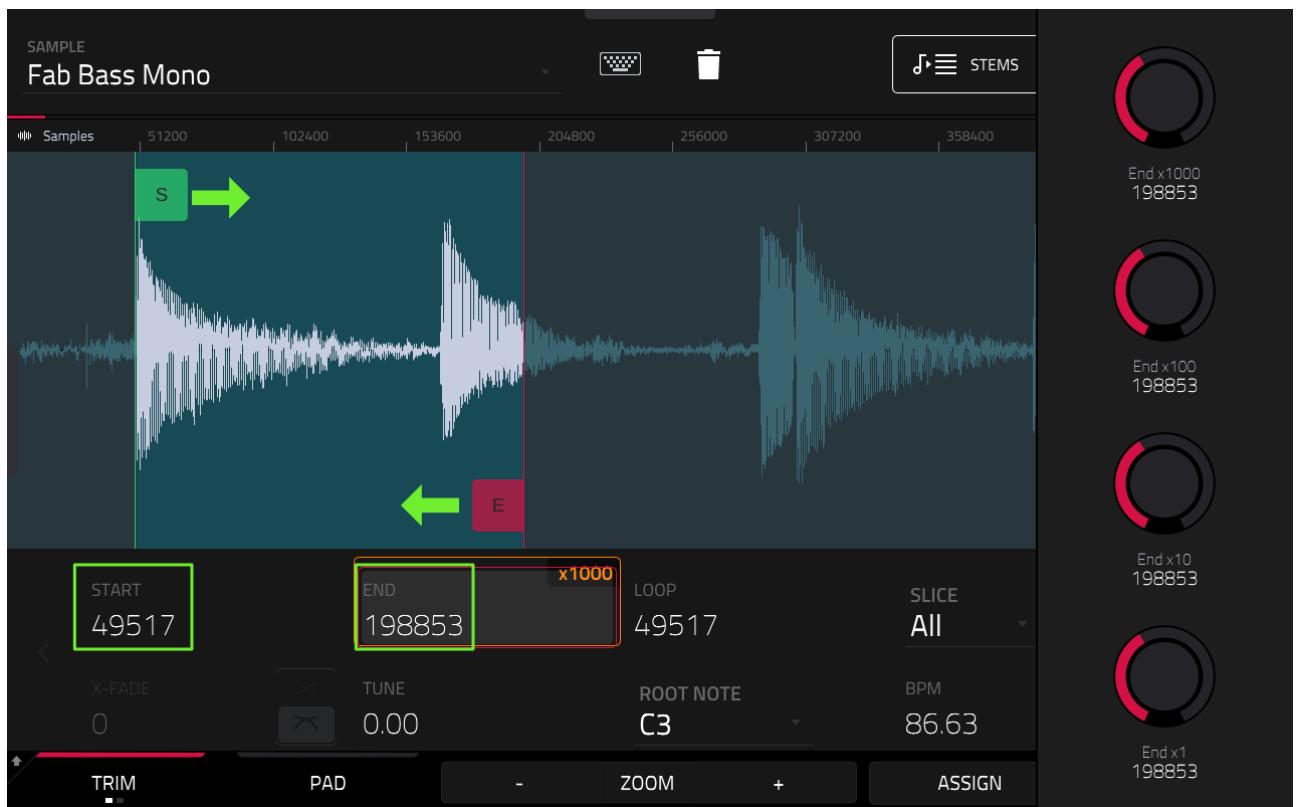


Alternatively you can hit the **headphone icon** in the toolbar to leave the default 'zoom' mode and enter 'audition' mode. Now you can tap and hold directly on the waveform to preview from the **START** point. Just remember to re-enable the 'zoom' tool if you like to 'pinch & zoom' on the touchscreen.

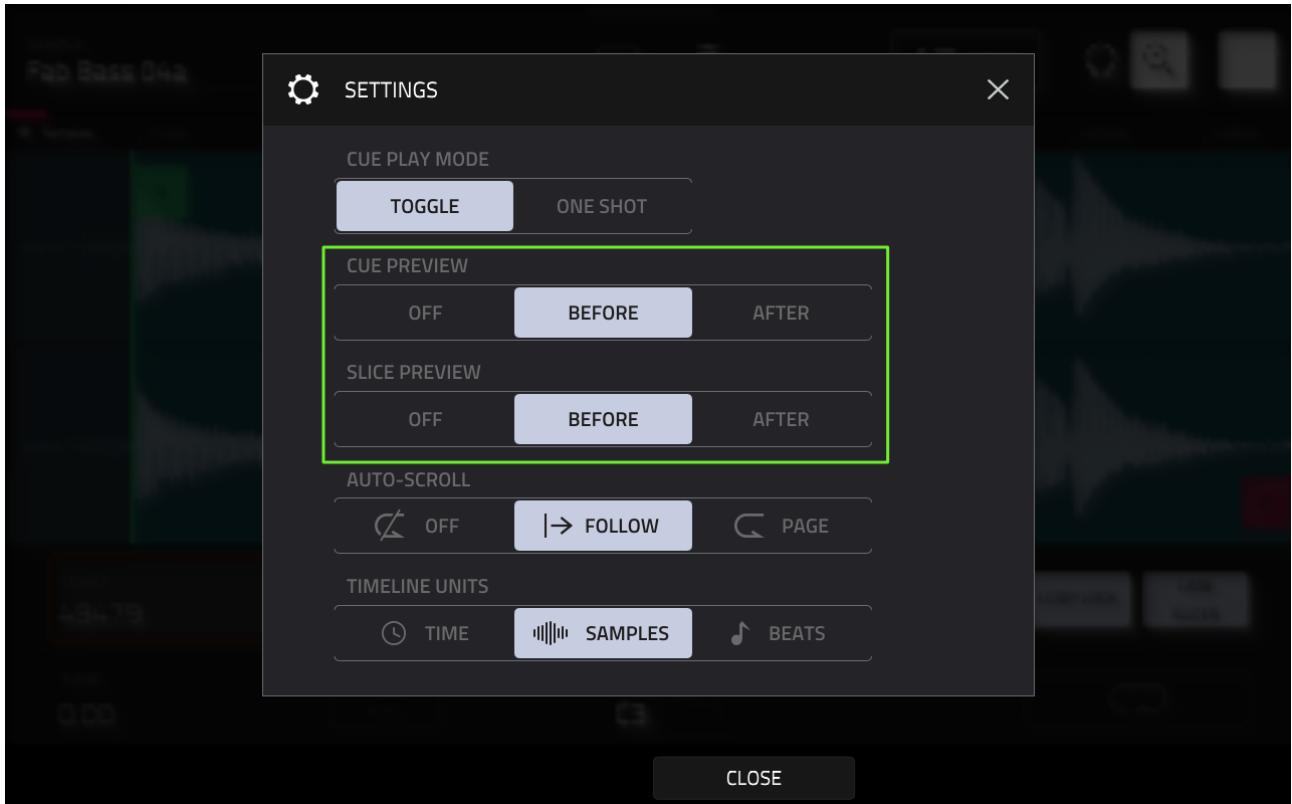
SETTING THE END POINT

Now finish isolating this individual bass note by setting an appropriate end point. You can drag the on screen red 'E'; if you need to zoom back out to see it, you can 'pinch & zoom out'. Alternatively tap on the **END** point parameter and use the **ZOOM-** button, or use (Q-LINK 4).

You can also use the second bank of Q-LINKS to give you the four different editing resolutions for the END point.

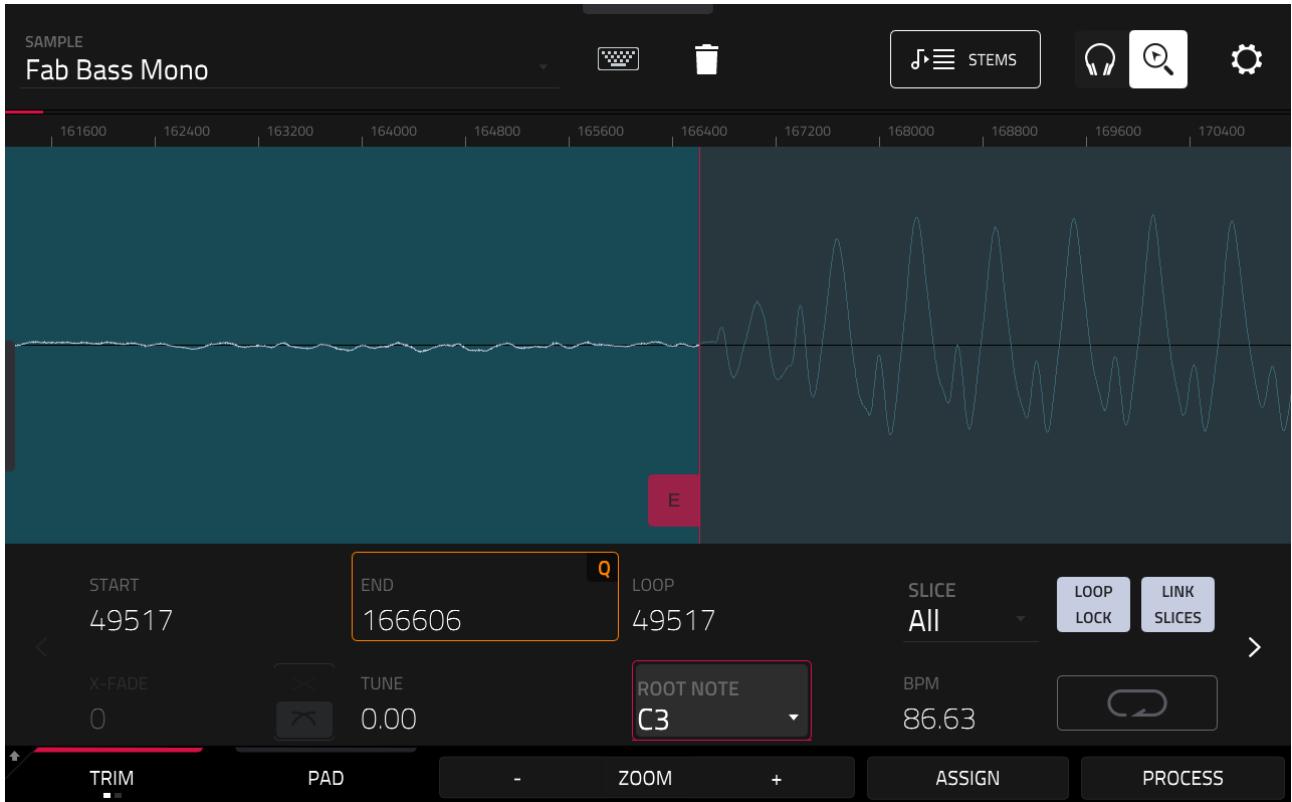


You can also enable a live audio preview while you change any edit point. Hit the **GEAR icon** in the top toolbar:



Set **SLICE PREVIEW** to **BEFORE** or **AFTER**. Now when you turn the (DATA WHEEL) or Q-LINKS you'll hear a brief audio preview, either before or after the current edit point – choose whichever type you personally prefer.

Again, with 0 SNAP enabled you'll find the MPC picks a nice 'zero crossing' edit point. Try an **END** of **166606**.



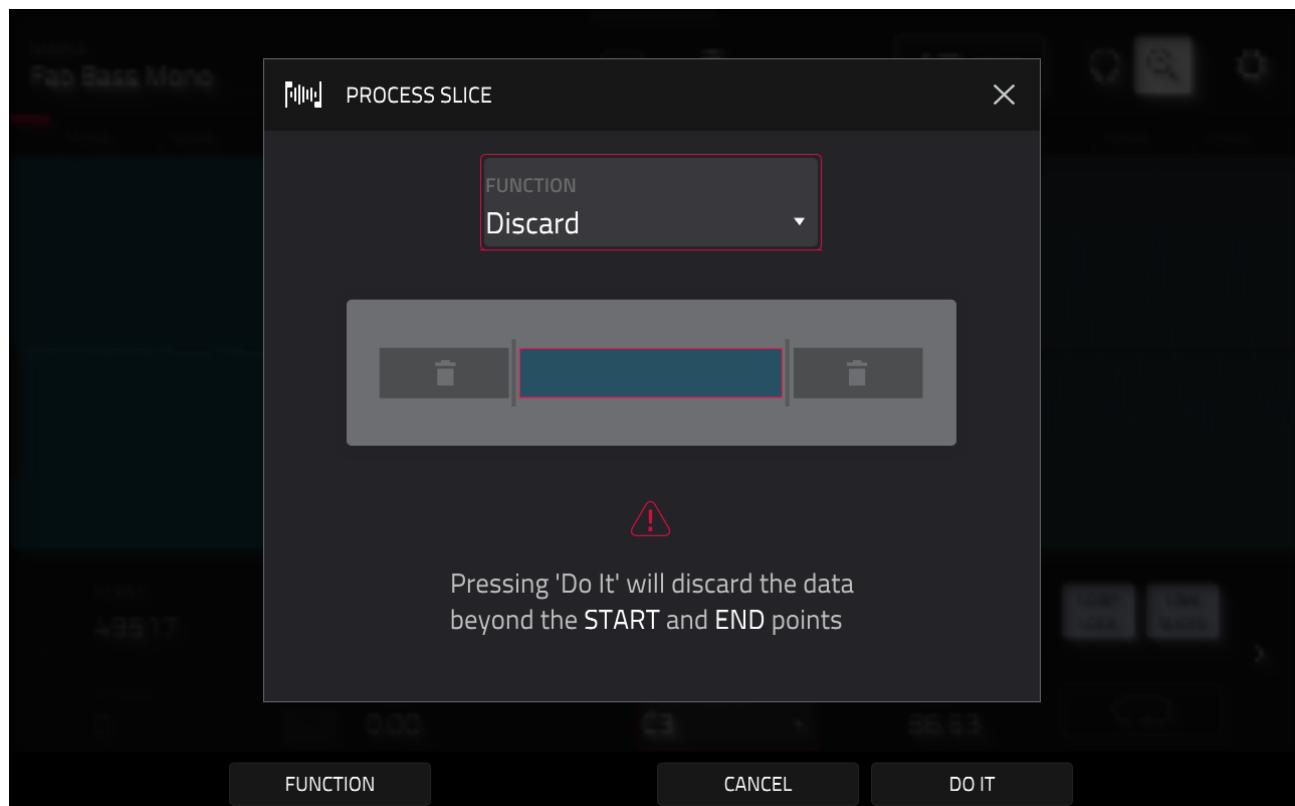
Preview the audio between the START and EDIT points with pads [A10] or [A11] – alternatively if you just want to check the end point, press and hold pad [A07] and the audio will preview starting from around the halfway point of the isolated region (rather than from the start point).



You'll probably find that the 0 SNAP sometimes gives you slightly different zero crossing points to the ones I've stated, I'm not sure why the MPC is inconsistent in this respect, but it doesn't seem to affect the actual audio output itself.

TOPPING & TAILING

Hit the **PROCESS** button and this time turn the (DATA WHEEL) anti clockwise until you have **Discard** selected:

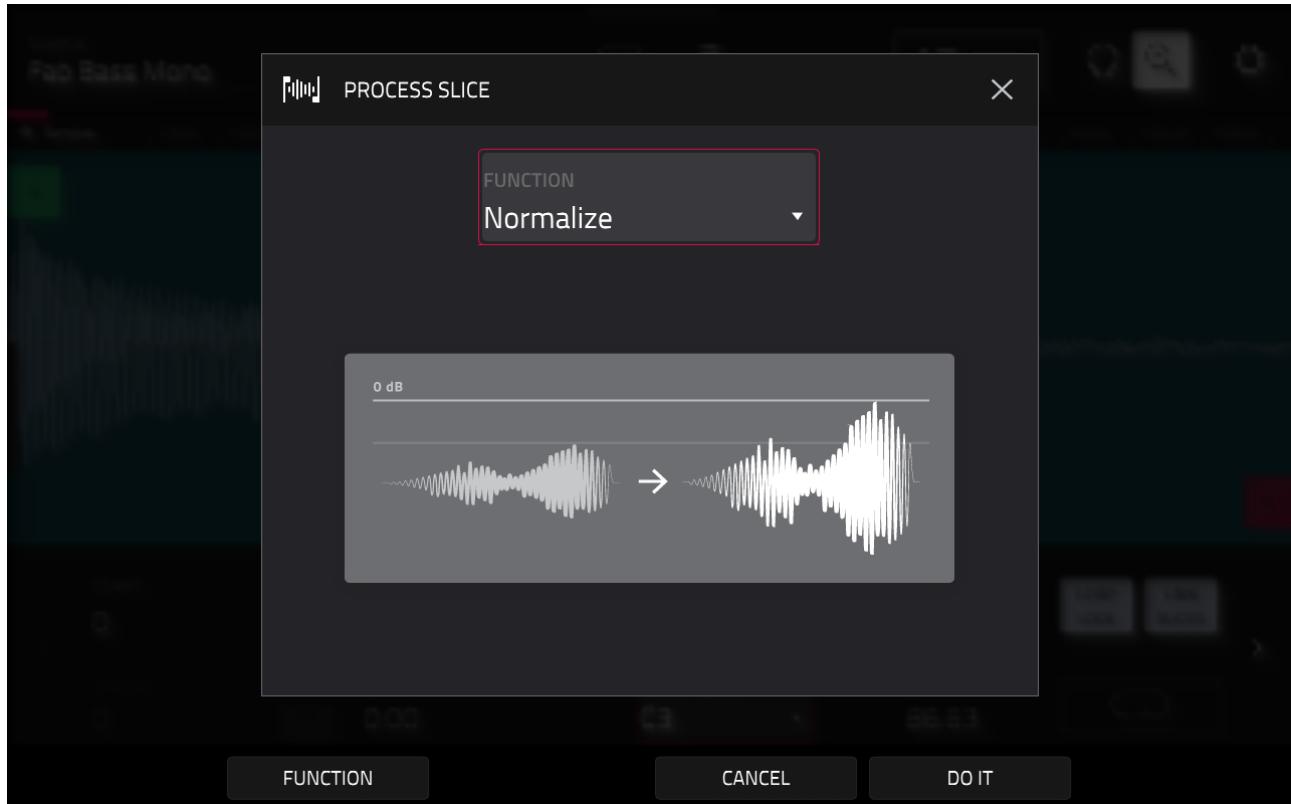


This process will discard all sample data either side of our custom START and END points; in doing so our sample will use less system memory (hidden audio data is still using up RAM).

Hit **DO IT** to discard the data outside the start and end points:



Hit **PROCESS** again and select **Normalize**:



This is another classic sample processing technique and it simply raises the gain of the entire sample so the highest peak sits at (or very slightly under) 0dBFS. Hit **DO IT** and observe how the waveform (and its actual volume) has increased in amplitude.



Your edited sample will be saved whenever you save your current project. If you would like to export this sample to disk (e.g. for the purpose of distributing it or transferring to a computer for further editing) first make sure it is selected in SAMPLE EDIT and then go to [MENU] > SAVE; select 'Save Sample'.

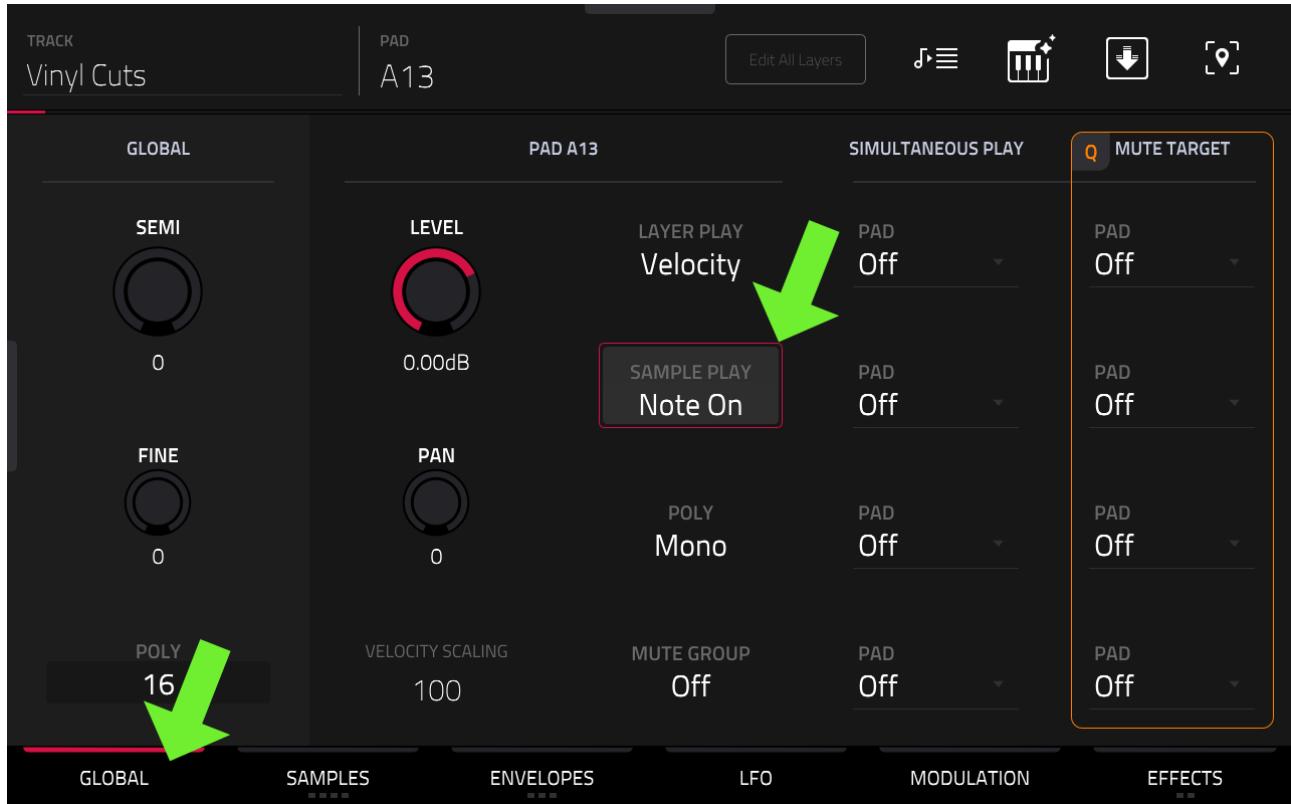
CREATING A MELODIC PAD

Head over to **TRACK EDIT > SAMPLES** and select pad **[A13]**, which still houses our original 'stereo' bass cut. Tap on **LAYER 1** and use the (DATA WHEEL) to assign the **Fab Bass Mono** sample to this layer:

B06: SAMPLE MANIPULATION



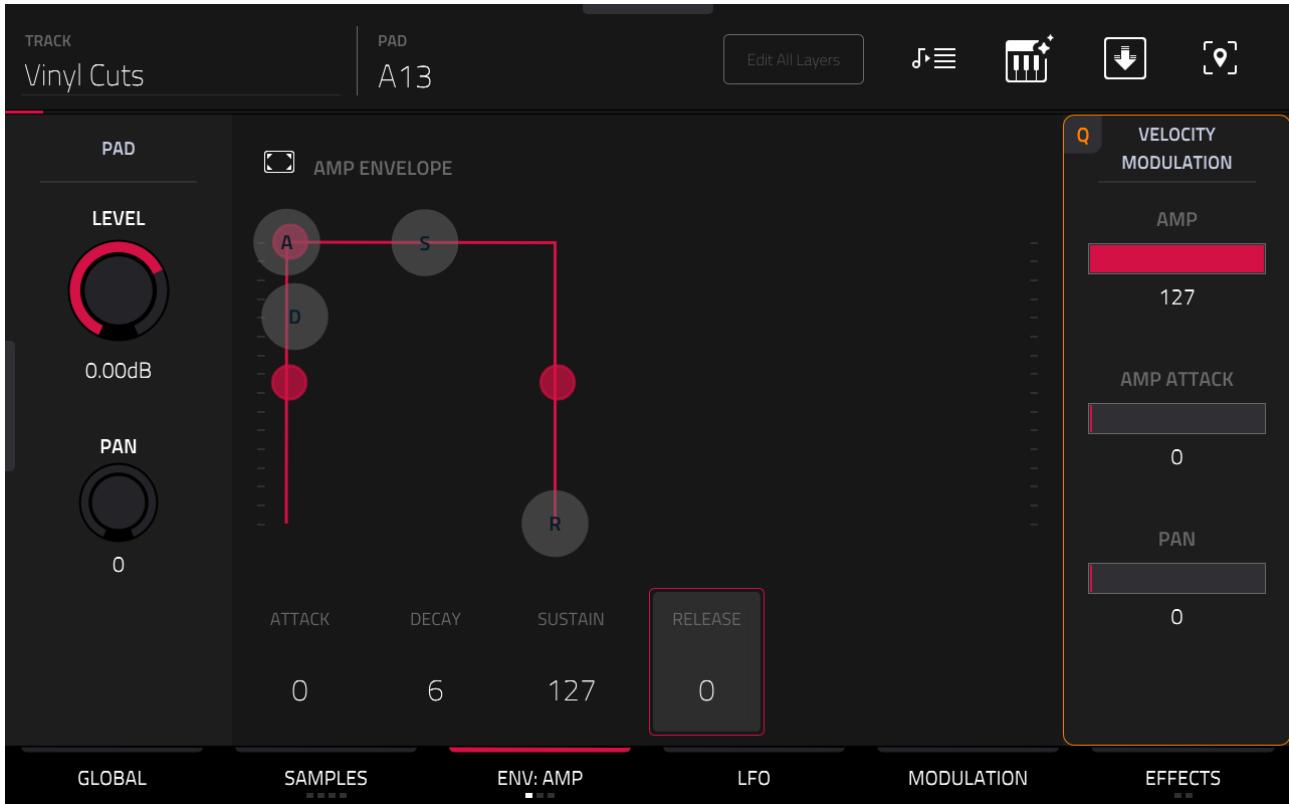
Hit pad [A13] to preview the individual bass sound. Now let's make this more like a real playable bass note by giving us the ability to control the length of the note. Go to **TRACK EDIT > GLOBAL** and change **SAMPLE PLAY** from ONE SHOT to **NOTE ON**:



Now play pad [A13] and you'll hear that when set to 'NOTE ON' the pad only plays for as long as you hold it down (or until the sample reaches its end).

ADJUSTING THE ADSR ENVELOPE

You'll probably have noticed that when you release a pad the bass note ends very abruptly, so let's fix that. Press the **ENVELOPES** button to reveal the **ENV:AMP** (amplitude envelope) page:



This looks a little different to the amplitude envelope we worked with in chapter B02; this is because before we were working with ONE SHOT pads which by default use an '**AD**' envelope (ATTACK and DECAY).

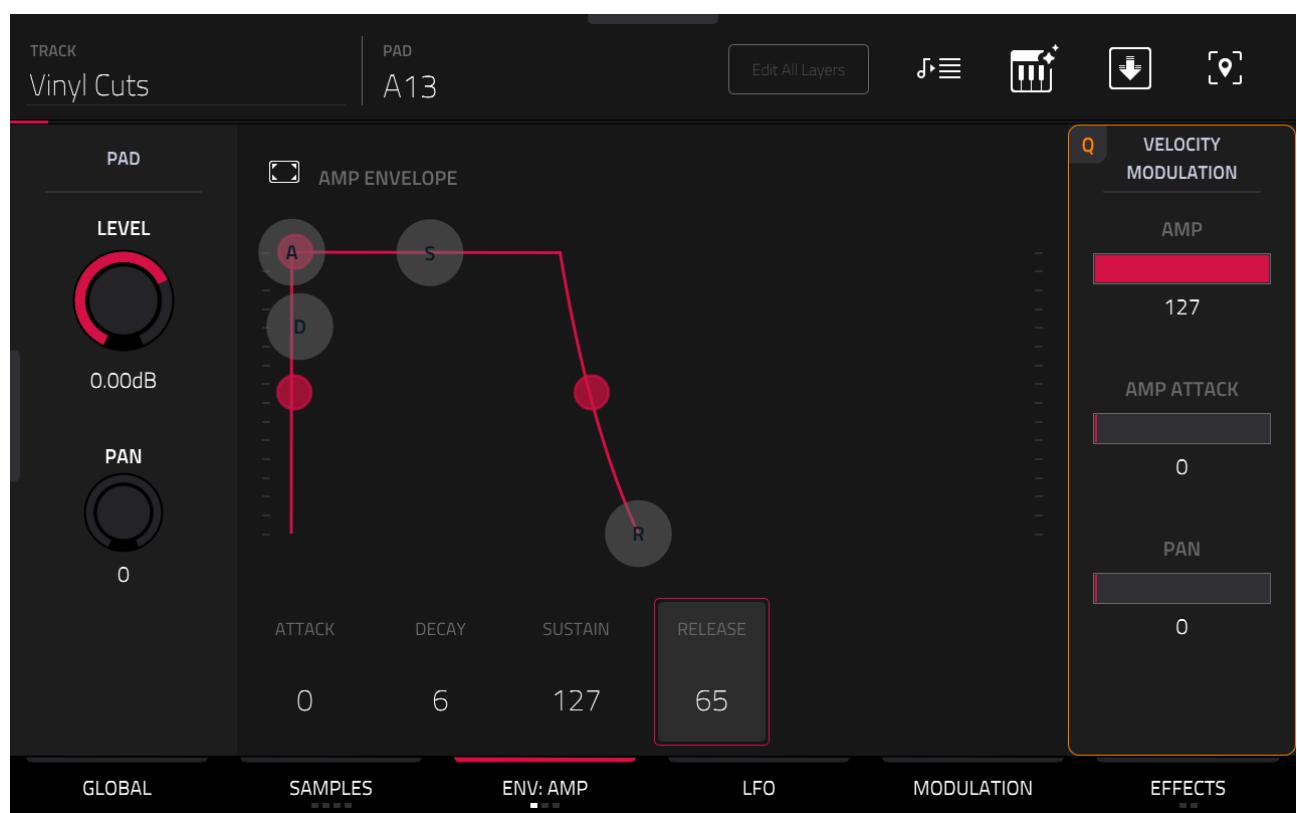
When dealing with NOTE ON pads, the MPC uses an **ADSR envelope**; this stands for **Attack**, **Decay**, **Sustain** and **Release**.

As before, '**ATTACK**' controls how the volume of the entire pad will 'fade' in, which in our example should remain at the default '0', ensuring we experience the full attack transient of the bass note each time it is hit.

The **SUSTAIN** and **DECAY** parameters allow us to shape the volume of the keygroup while we hold down the pad – for the moment, leave these at their defaults.

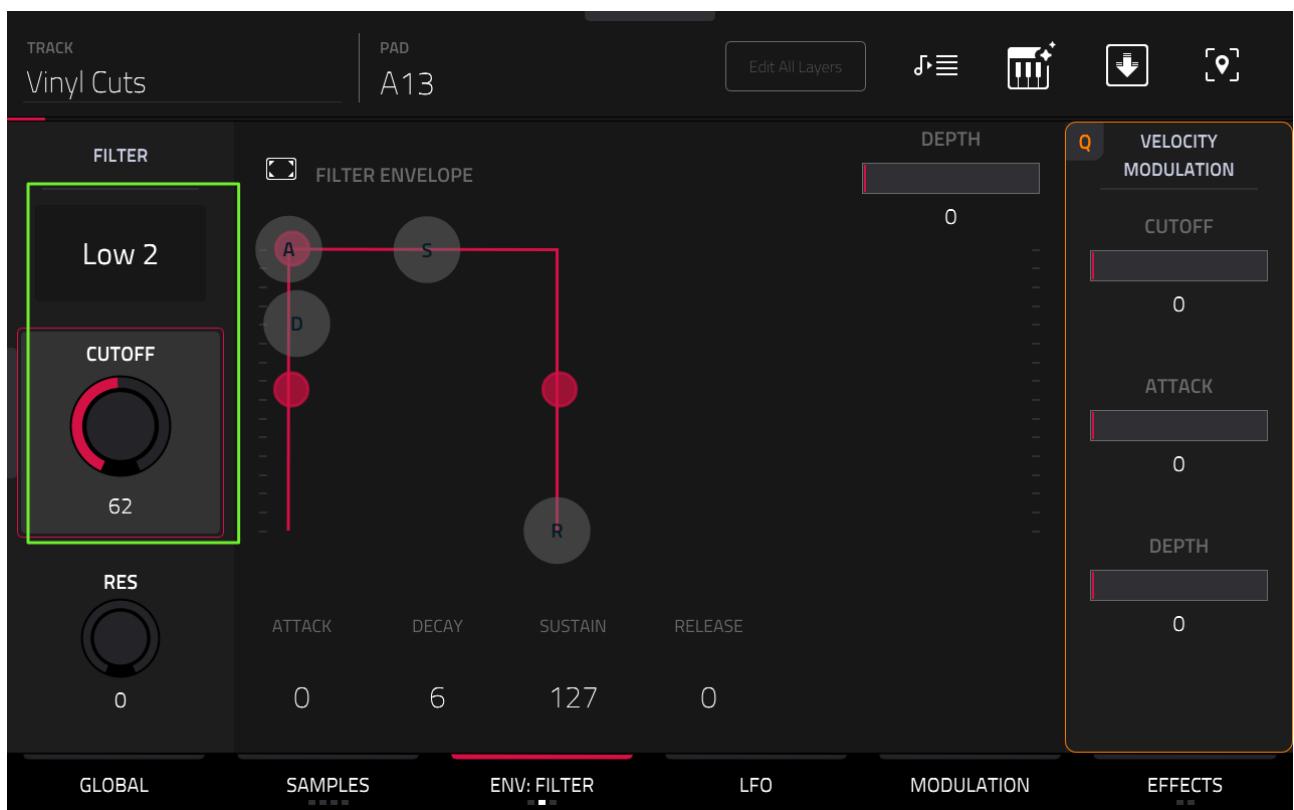
The **RELEASE** parameter controls how the volume of the pad behaves *after* you release the pad. The default RELEASE value of 0 means the keygroup will abruptly end the very instant you release the pad.

Tap on '**RELEASE: 0**' and begin turning your (DATA WHEEL) clockwise to increase the release value, continually 'jabbing' at a pad to hear the changes. Alternatively use your finger to drag the 'R' on the touchscreen. Set a **RELEASE** of **65**; now when you let go of a pad you'll hear a short 'fade' as the bass volume quickly decays to zero.



REMOVING HISS & NOISE

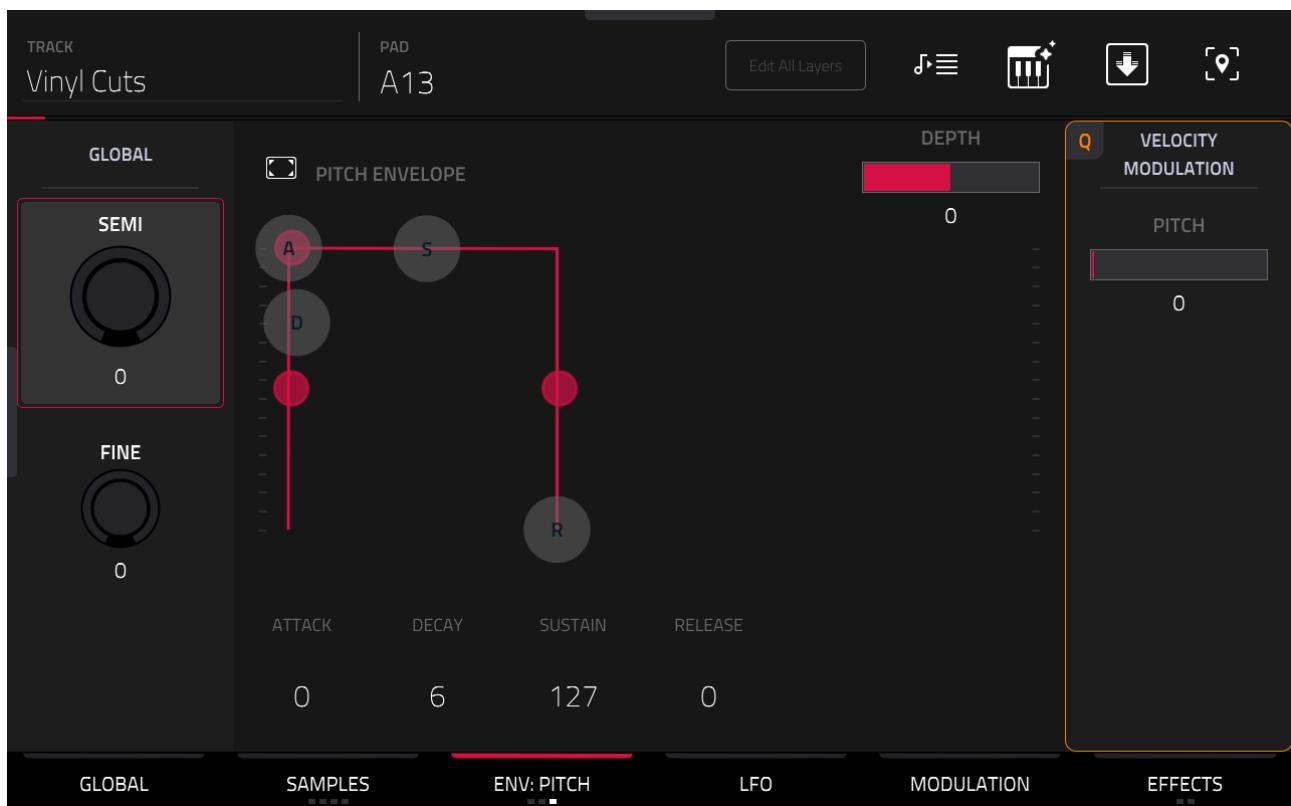
The original sample has a fair amount of hiss which you may or may not wish to keep in your instrument. Vinyl hiss can definitely add some unique character to your bass, but if you do wish to subdue this you can apply a filter. Tap on **AMP ENV** to go to the **FILTER ENV** page:



To remove higher frequencies from a pad, use a low pass filter. Try a **Low 2** (2 pole low pass filter) with a **CUTOFF** of **62**. Later in the course we'll be utilising the other more advanced filter features on this screen.

USING THE PITCH ENVELOPE TO ADD ATTACK

Press **ENV:FILTER** so it takes you to the **ENV:PITCH** screen.



On the **pitch envelope** screen we can shape the **pitch** of our sound over time using an ADSR envelope. While this can be used to create some unique sounding effects it can also be used to add a more defined attack transient to any sound.

First, tap on the **DEPTH** parameter and turn your (DATA WHEEL) clockwise – the higher the DEPTH setting, the more the pitch of our sound increases. Set a **DEPTH** of approximately **2000** and preview pad [**A13**]. You should

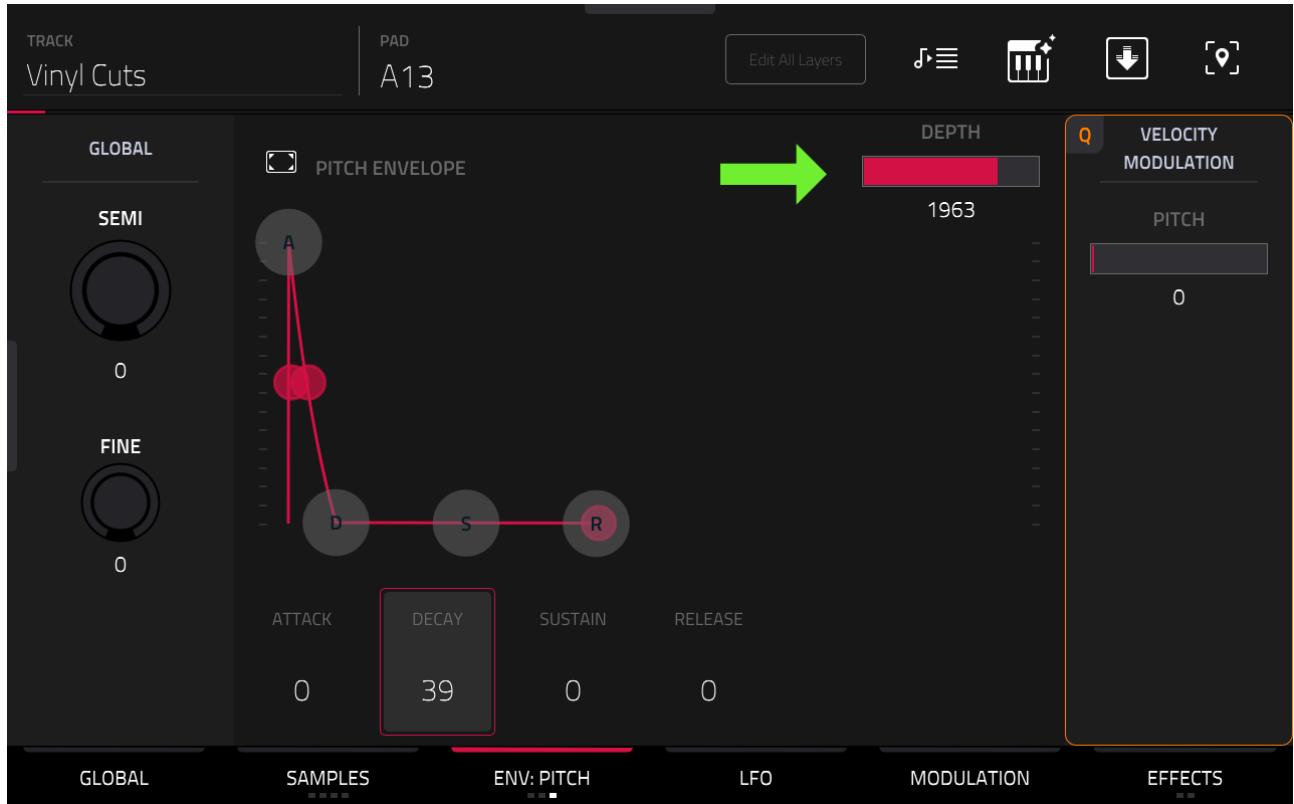
hear that the pitch of our bass note is now much higher. Now let's 'shape' this pitch increase to turn it into a short attack transient.

Tap and hold on the **SUSTAIN** circle (**S**) and drag it down to from 127 to **0**. By giving our pitch increase no sustain whatsoever, the sound currently retains its original pitch.

The **DECAY** parameter controls how long it takes to reach the SUSTAIN portion of the envelope; with SUSTAIN set to 0, the DECAY parameter is controlling how long it takes for our initial pitch increase to decay down to 'zero' pitch increase.

Set **DECAY** to **90** and preview pad **[A13]**. With DECAY at a high value the pitch takes a fairly long time to drop down to 0 and gives an almost tom-like effect.

Now begin to gradually decrease the **DECAY** portion of the envelope while continually previewing pad **[A13]**. Eventually the 'pitch diving' effect is gone and soon you'll have more of a 'thunk' added to the start of the bass sound. Try a **DECAY** of **39**.

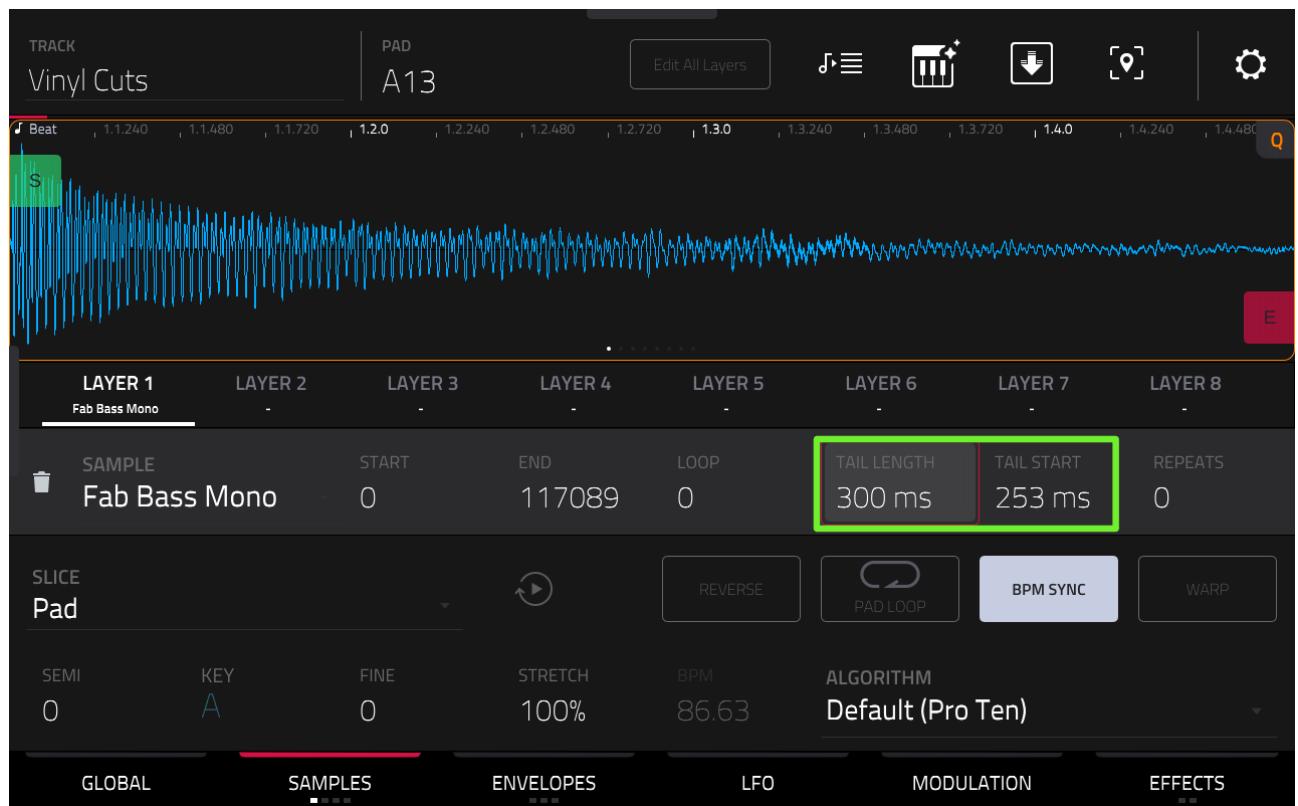


You can also experiment with the **DEPTH** setting; the lower the DEPTH, the less maximum pitch level and the more subtle the attack transient becomes. Higher DEPTH settings give a much more aggressive sounding attack transient. Also note that you can even set a *negative* DEPTH to create an initial pitch 'drop'.

USING TAIL TO ADD A SMOOTHER SAMPLE END

Currently if we hold down the bass pad until the sample reaches its end point, it finishes quite abruptly. One way to address this issue is to simply add some additional '**tail**' to our layer.

Go to **TRACK EDIT > SAMPLES** and set the **TAIL LENGTH** parameter from **OFF** to **300**:



Now hold down pad [A13] and listen carefully as the playhead reaches the end point of the sample. It no longer ends abruptly, instead there's a little fade added to the end of the sample.

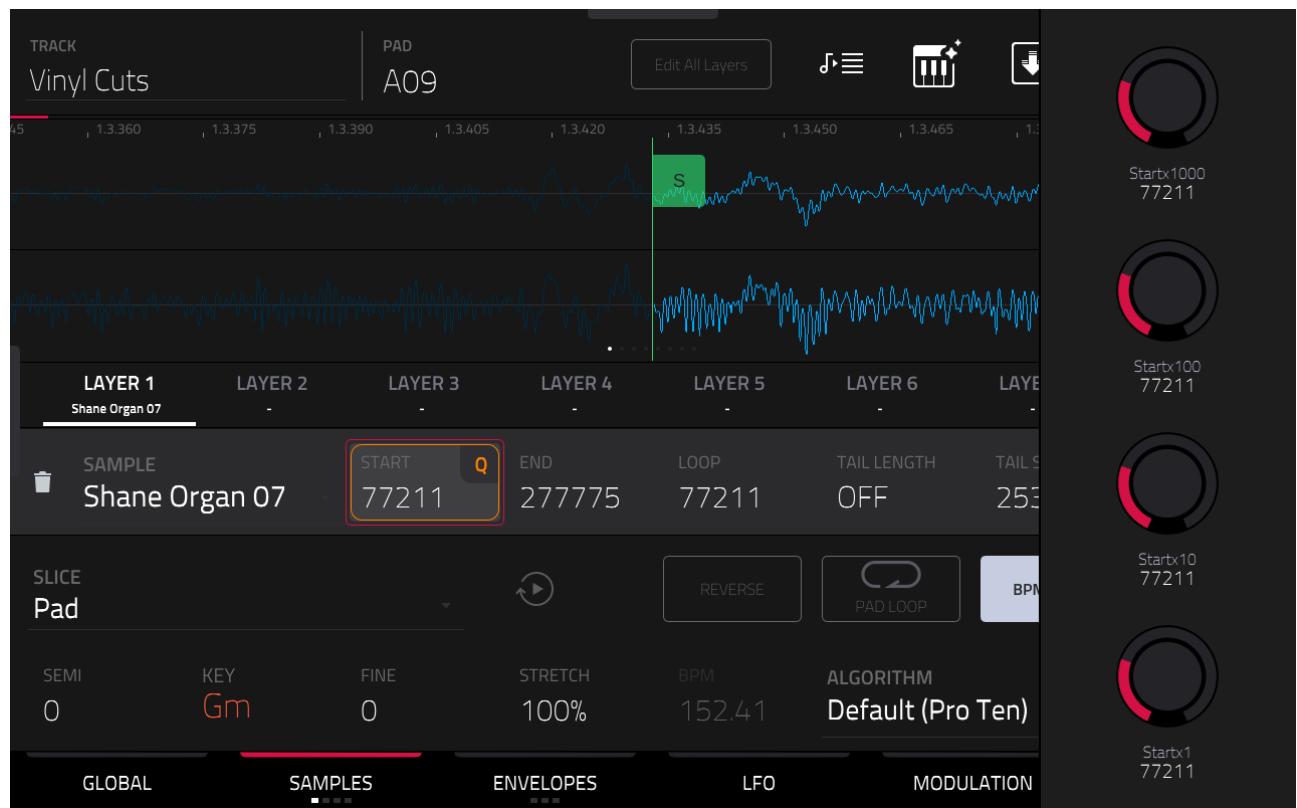
If you observe the white playhead you'll see it is actually moving back and forth in a 'ping-pong' loop that gradually fades out over time. The **TAIL START** determines how far from the end of the sample the tail loop will start - try changing this to 400 notice how the playhead ping-pongs back and forth from a position further back in the sample.

The **TAIL LENGTH** determines how long the total tail 'loop' will play for. Try increasing **TAIL LENGTH** to **1000** (milliseconds). We now have a more natural sounding end to our bass sound, more like the natural decay of a real bass note.

WORKING WITH PITCH

Hit pad **[A09]**. This sample features an organ led build up. Let's adjust the layer START point so the pad begins playing at the point where the organ run reaches its peak. Hit the **GEAR** icon and make sure **ZERO SNAP** is **ON**.

Set the **START** point of the layer to **77211**:

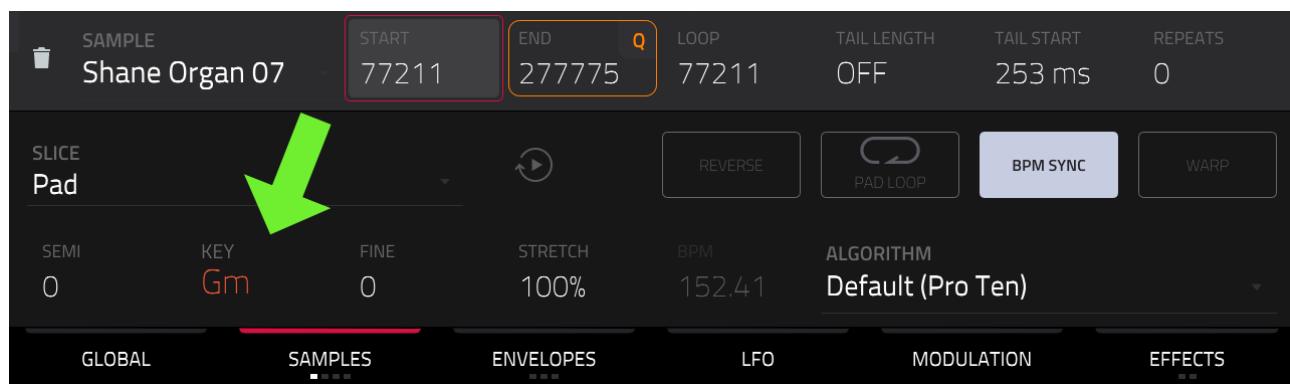


Remember you can zoom in via 'pinch and zoom' and use the first bank of Q-LINKS to change the START point in different resolutions.

Let's shape this sound a little. Press **ENVELOPES** twice to go to the **ENV:FILTER** page. Set the filter type to **Band 2, a 2 pole Band Pass Filter** which will filter out frequencies both above and below a defined frequency band, making it perfect for simultaneously removing both high and low frequencies.

Try a **CUTOFF** of **72** to remove the 'mud' of the lower end and also control some of the hiss in the upper frequency range.

Head back to **SAMPLES**. Notice how the MPC has determined this organ sound has a **KEY** of **G minor**.



If you temporarily go back to pad [A13], the **KEY** parameter the pitch of this bass note to be '**A**'. The MPC's automatic key calculation is mostly pretty good and can be used to help match up pitches of different samples.

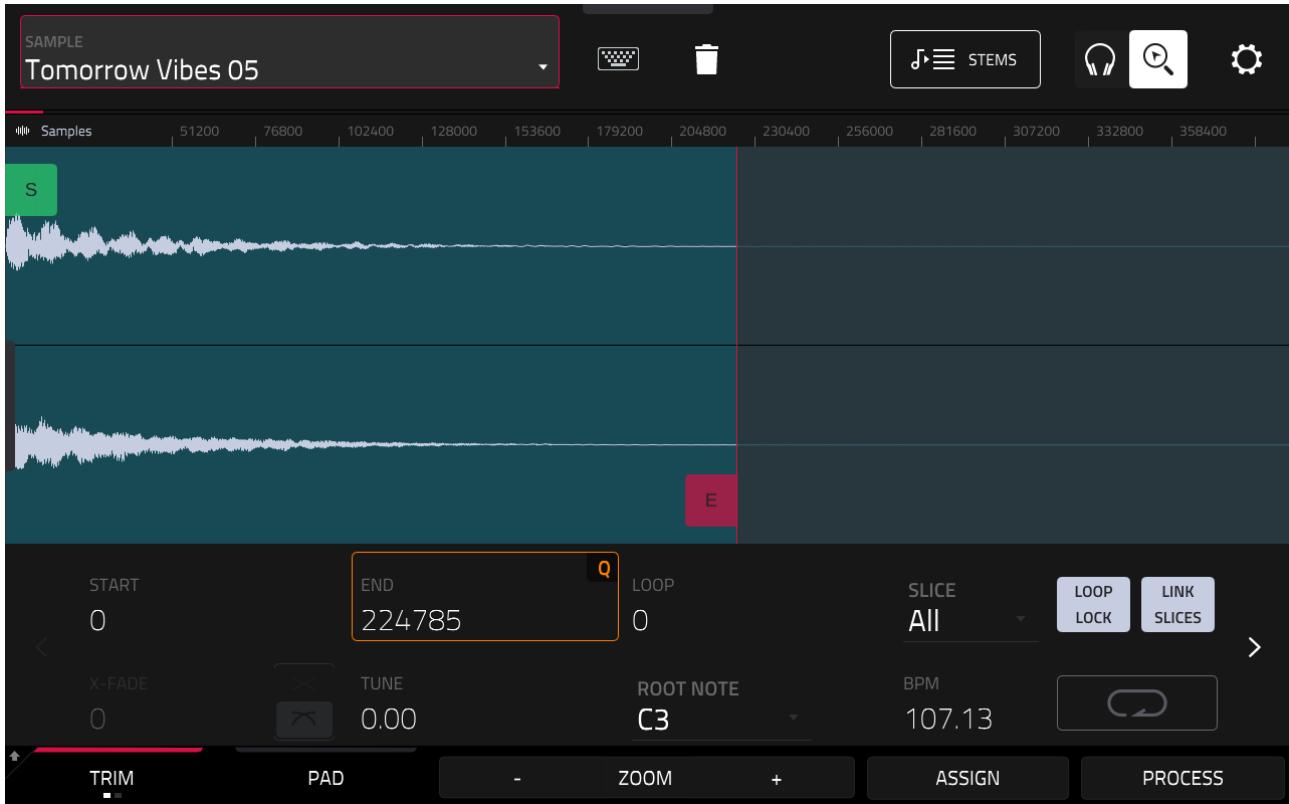
Let's try matching the pitch of pad [A09] organ sample with our bass on pad [A13]. The distance between a 'G' and an 'A' is two 'semitones' so set

the **SEMI** on pad **[A09]** to **2** to tune this pad by up two whole semitones. Notice how the **KEY** now shows as **A** (minor).

Play pads **[A13]** and **[A09]** and you should hear that they are very similar sounding in pitch. We can 'fine tune' the pitches once we've set up all the samples.

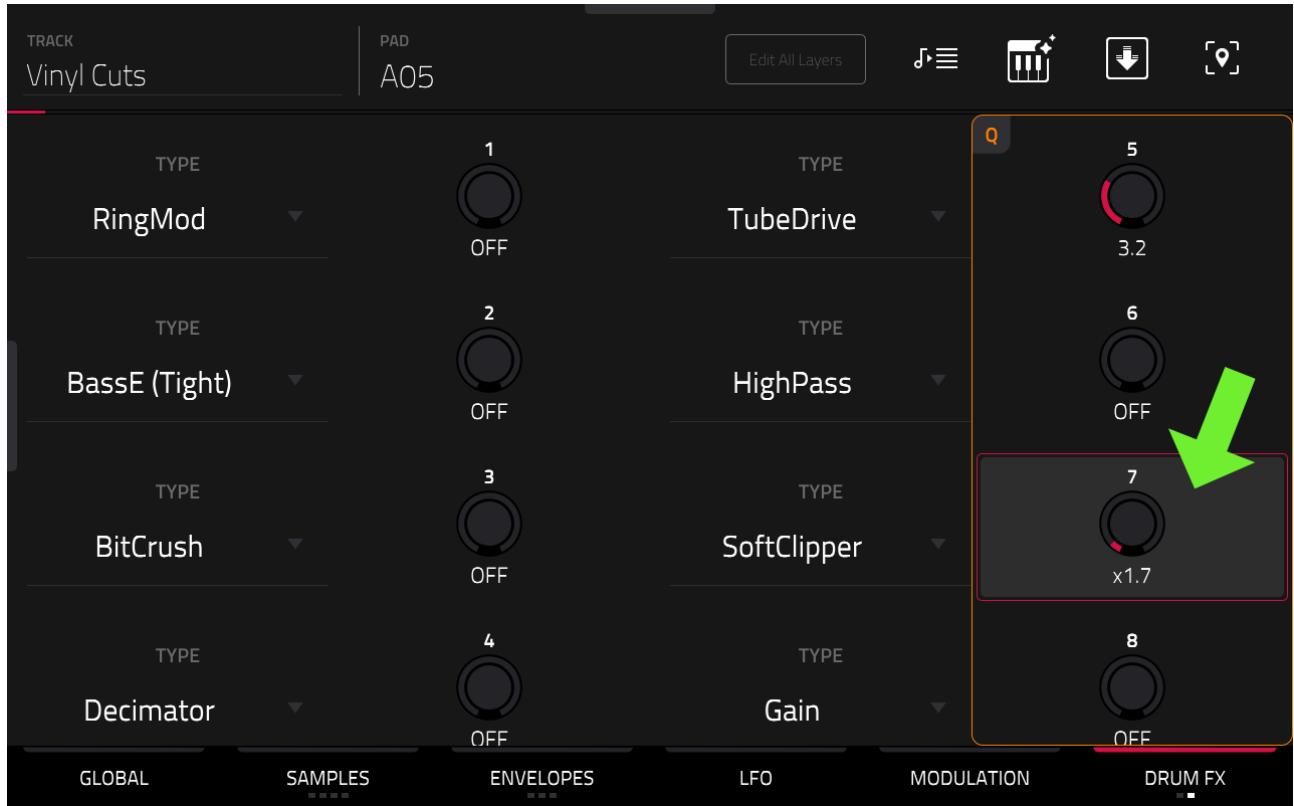
ADDING DRUM FX

Hit pad **[A05]** – this layer is already showing the sample is in the KEY of A and already sounds great with our other two pads. Optionally you could head over to **SAMPLE EDIT** and discard all that unnecessary, silent sample data from around **226300** onwards, but you can leave it until later if you don't want to interrupt your flow.



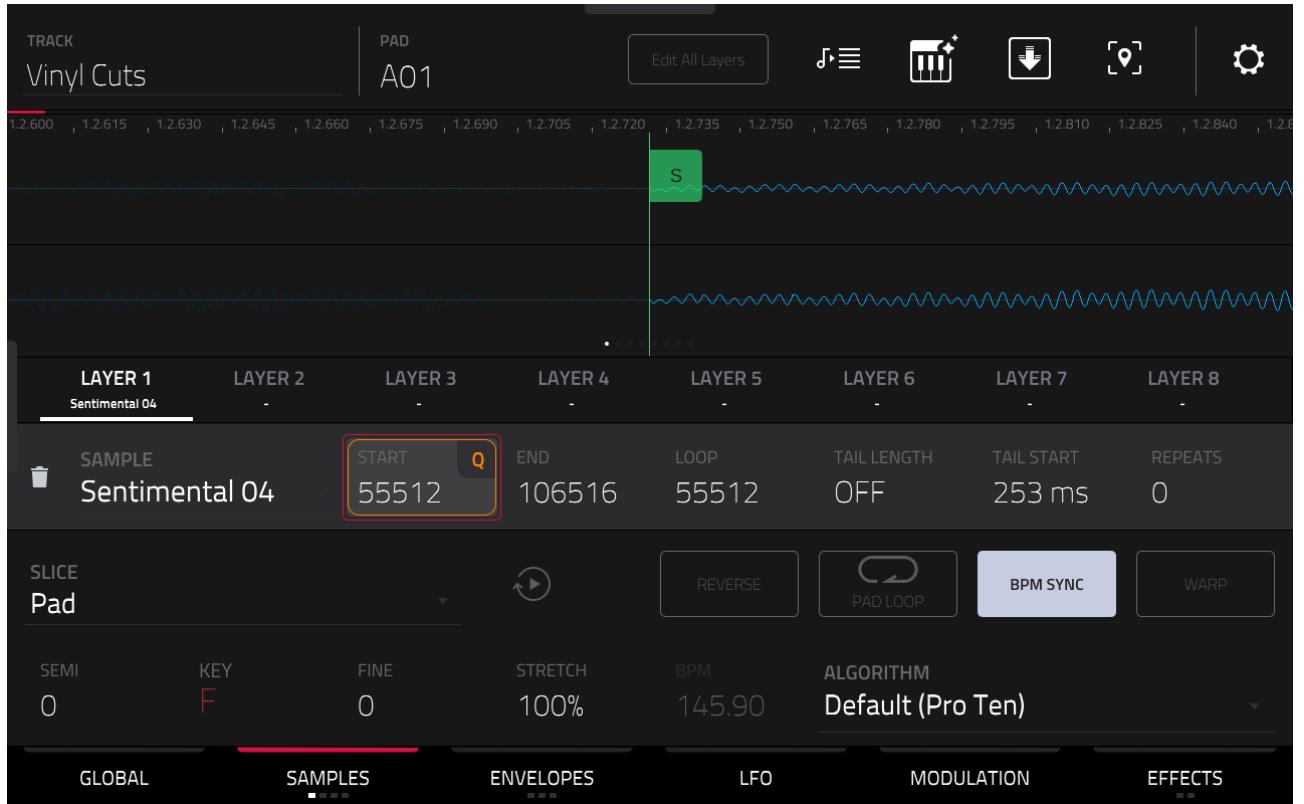
Now let's remove some of that low end and give this sample a more 'distant', lofi vibe. Go to **FILT:ENV** and choose a **High 1** filter which will filter out all that low end mud that will interfere with our lovely bass note. Set a **CUTOFF of 70**.

After applying that High pass filter the output volume of the pad has decreased a fair bit. We could put the mixer volume level up for this pad, but another quick track-based option is to use the **Soft Clipper**; hit **EFFECTS twice** and increase the **SoftClipper** dial to **x1.7**:



While you are here, add some TubeDrive to give these keys a bit of grit and warmth, try **TubeDrive: 3.2**.

Pad [A01] is a nice 'vibes' sample, although it has some bass playing underneath the start, so let's change the START point so it begins after the bass has finished. Set a **START** of **55512**.



You'll almost certainly find times when turning the 'x1' Q-LINK does nothing, it just stubbornly stays on the current START or END point. If that happens, try the 'x10' Q-LINK instead, or zoom in and switch to the (DATA WHEEL).

Hear that click at the start? Hit **ENVELOPES** and just set **ATTACK: 1** which quickly removes that click without adding any obvious 'fade' to the start of the sample.

As we did with the bass pad, let's use TAIL to give our sample a more faded end. Try a **TAIL LENGTH** of **300 ms**, and **TAIL START** of **286 ms** (remember to hold down **[SHIFT]** for more accuracy).

If you compare this pad to our other pads you can probably hear that it doesn't quite 'fit' in terms of its key. The MPC is telling us it's in the key of F, although I'm not sure this is correct. This often happens when dealing with samples containing multiple notes or instruments, the MPC just can't figure out the key.

Let's try using our ears – hit pad [A05] and then pad [A01] and begin changing the **SEMI** value on pad [A01] – try decreasing it until it seems to 'fit' nicely with pad [A05].

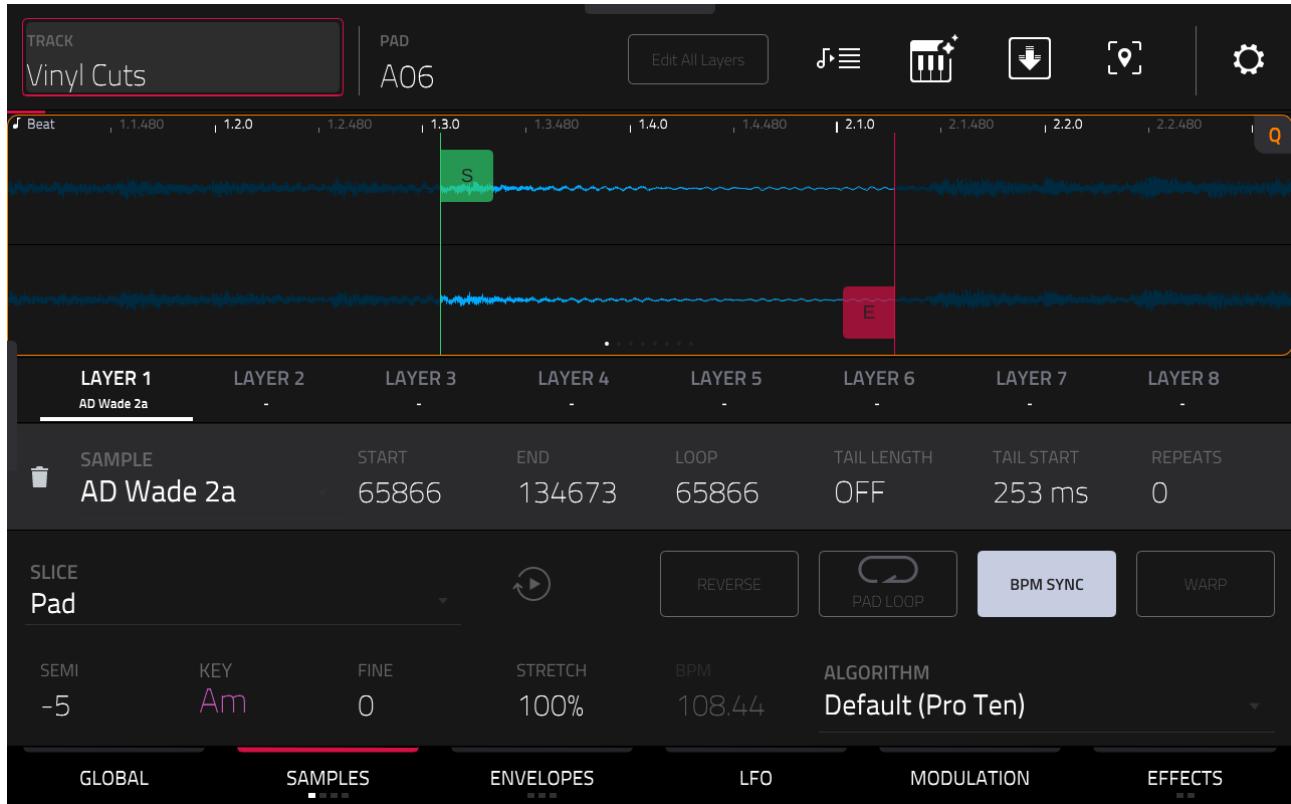
This takes a bit of practice but it's worth preserving in developing this skill as soon you'll be able to whizz through a kit full of samples and quickly tell which sounds need tuning to play nicely together. A **SEMI** of **-5** seems to work pretty well.



Remember we're initially just whizzing through this kit to quickly see which samples are not only going to work together but which ones will inspire us to move on to building an actual track. So at this point don't get too bogged down with this; if something seems like it's going to work, keep it and tweak later. If something seems like it just doesn't fit, bin it.

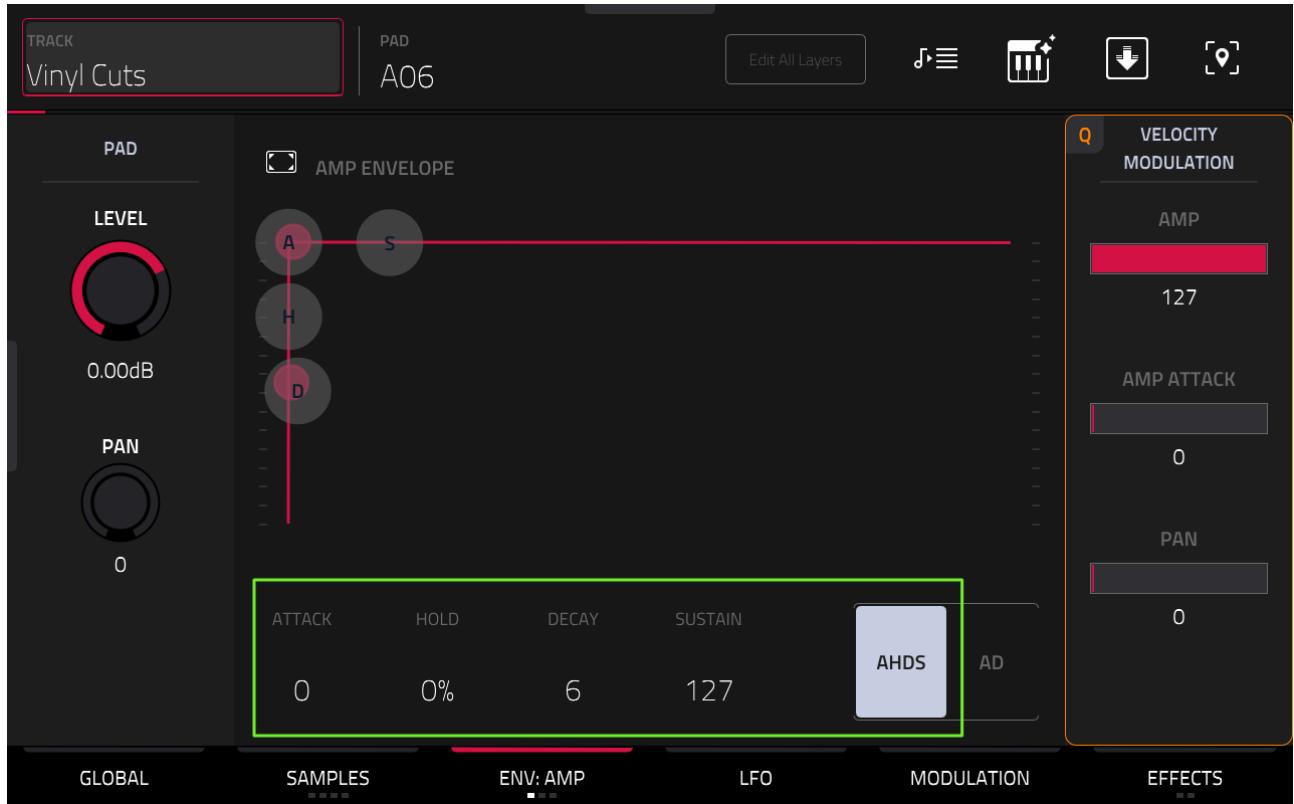
USING THE AHDS ENVELOPE

Select pad **[A06]**. This is a snippet of piano playing, and we can both hear and see a decent length chord in the middle. Use the START and END points on **LAYER 1** to isolate this portion of the sample. Try a **START** of **65866** and an **END** of **134673**:



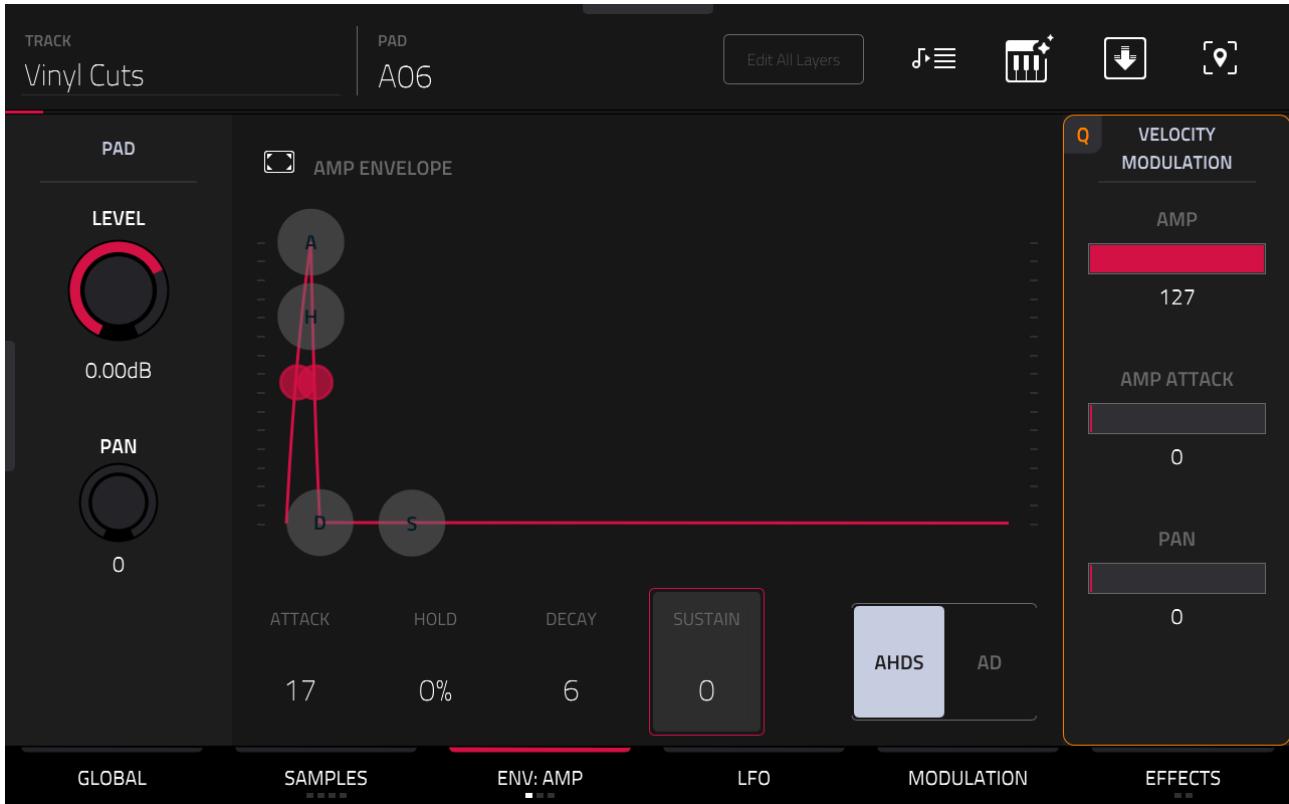
Preview pad [A06] – this is a good start. Notice the **KEY** is '**Dm**' – let's set **SEMI** to **-5** to give us a **KEY** of **Am** to match the rest of the kit.

Let's shape the volume of this sound – tap on **ENVELOPES** for the amp envelope screen. Now, previously we've used the default AD envelope on a one shot pad, but this time tap on the **AHDS** button:



AHDS stands for **Attack**, **Hold**, **Decay** and **Sustain**. The AHDS envelope is much more flexible than the AD envelope, giving us additional 'hold' and 'sustain' controls.

First, use an **ATTACK** of **17** to remove the click at the start of the pad. Next, let's 'smooth out' the end of the pad; first set the **SUSTAIN** to **0**:



With no sustain to our pad all we are left with is a very short click as the pad volume rapidly plummets from its maximum volume output to the zero sustain value. To slow down that volume reduction we can increase the **DECAY** value as this dictates how long it takes for the volume to fall from its peak down to the sustain value. As you increase the decay, the less steep the volume reduction and the more 'gentle' the volume fade. Try a **DECAY** of **92**.

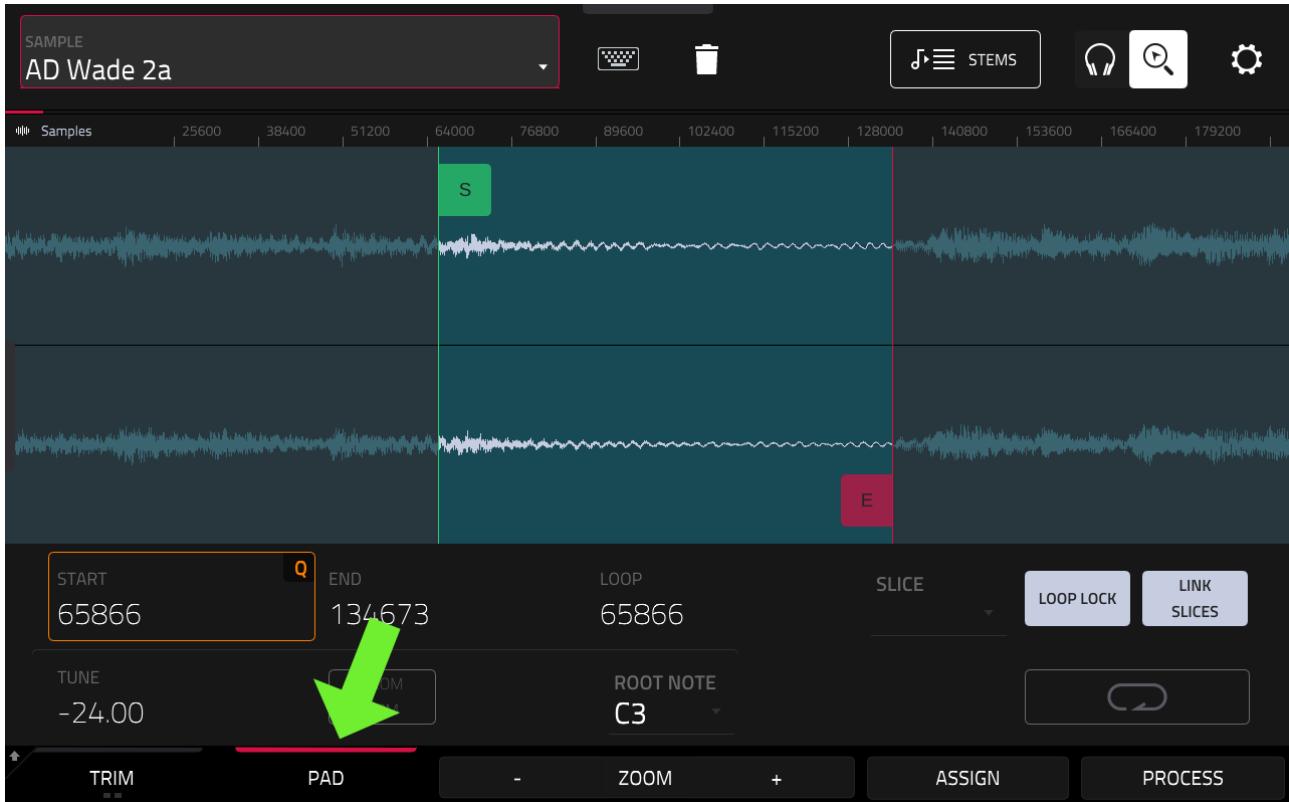
Now start to increase the **HOLD** parameter. This dictates how long the volume is 'held' at the maximum level (**A**) before it is allowed to start decaying. The longer the HOLD value, the more 'body' is given to the pad sound. Try a **HOLD** of **24%**. I also changed the DECAY shape (**D SHAPE**) to make it slightly more linear – hit the **ENVELOPE** icon to enlarge the envelope:



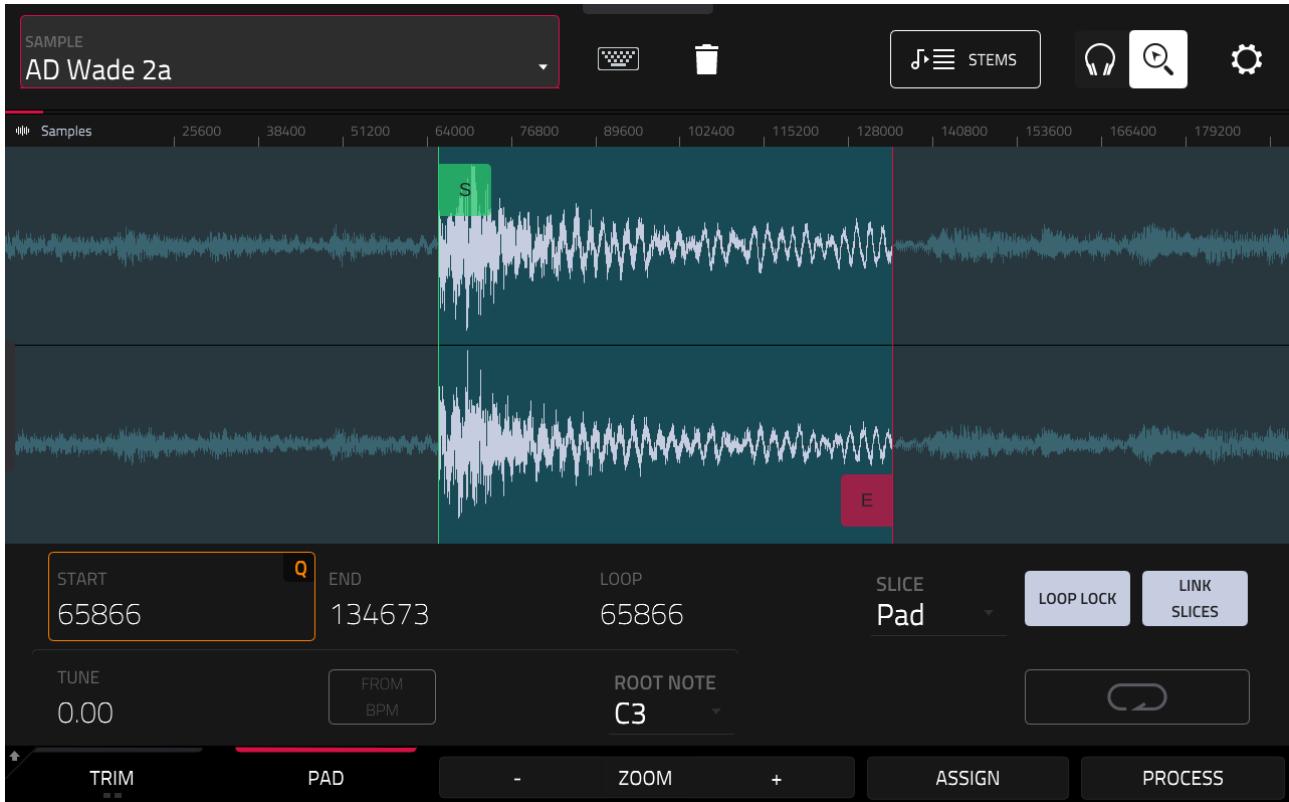
Now head over to the the **ENV: FILTER** screen. This sample is incredibly 'bassy' and muddy, so will definitely benefit from some high pass filtering – try a **High 1** filter with a fairly high **CUTOFF** of **86**.

PROCESSING A PAD REGION

It's all gone a bit quiet as ultimately that selected region of the sample has a very low amplitude, even more now that it's being run through the high pass filter. So head over to **SAMPLE EDIT**, but this time hit the **PAD** button:

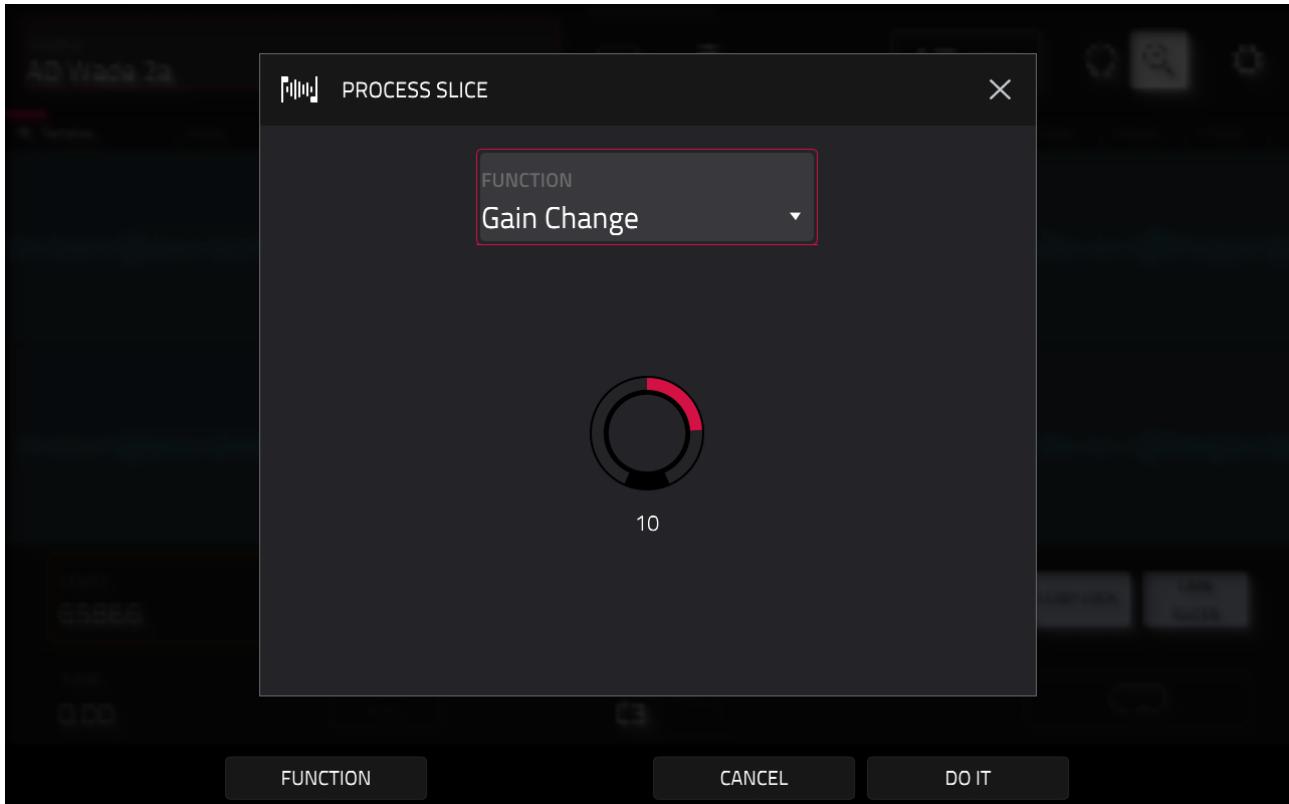


In '**PAD**' mode we see our sample with the current pad start and end points applied, the difference is that we can now apply 'destructive' SAMPLE EDIT processes to this pad region. So rather than relying on FX like the SoftClipper to 'boost' overall sample volume, hit **PROCESS** and select **Normalise > DO IT**:



This raises the overall level of just the selected pad layer region. Hit the pad and unlike SAMPLE EDIT > TRIM, you'll actually hear how the changes sound within the kit itself, with all the existing pad parameters applied.

As an alternative to 'Normalise' you can use '**PROCESS > Gain Change**' to apply smaller amounts of gain to a sample (rather than just pushing it directly to 0dB):

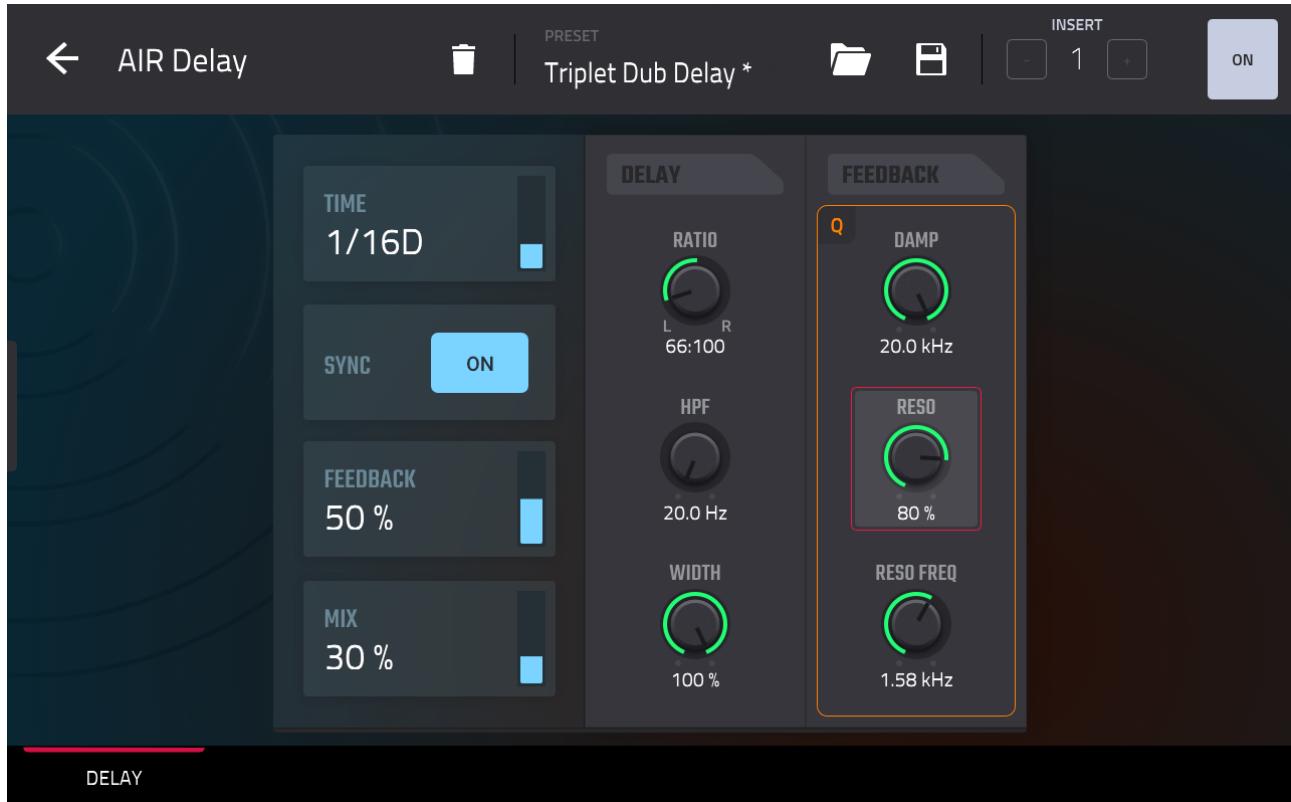


However you just have to guess how much gain to add, so you need to keep repeating if you need more, or use UNDO if you add too much. So in our current example, normalise is the quickest option.

At this stage don't sweat the exact volume levels, just concentrate on playing through all these samples to see what works and what doesn't.

USING DELAY TO CREATE A FULLER PAD SOUND

With pad [A06] still selected, go to **TRACK EDIT > EFFECTS** and double tap **INSERT 1**; select **Delay/Reverb > AIR Delay**. Tap on the pencil icon and from the **PRESET** box, select the **Triplet Dub Delay** preset:



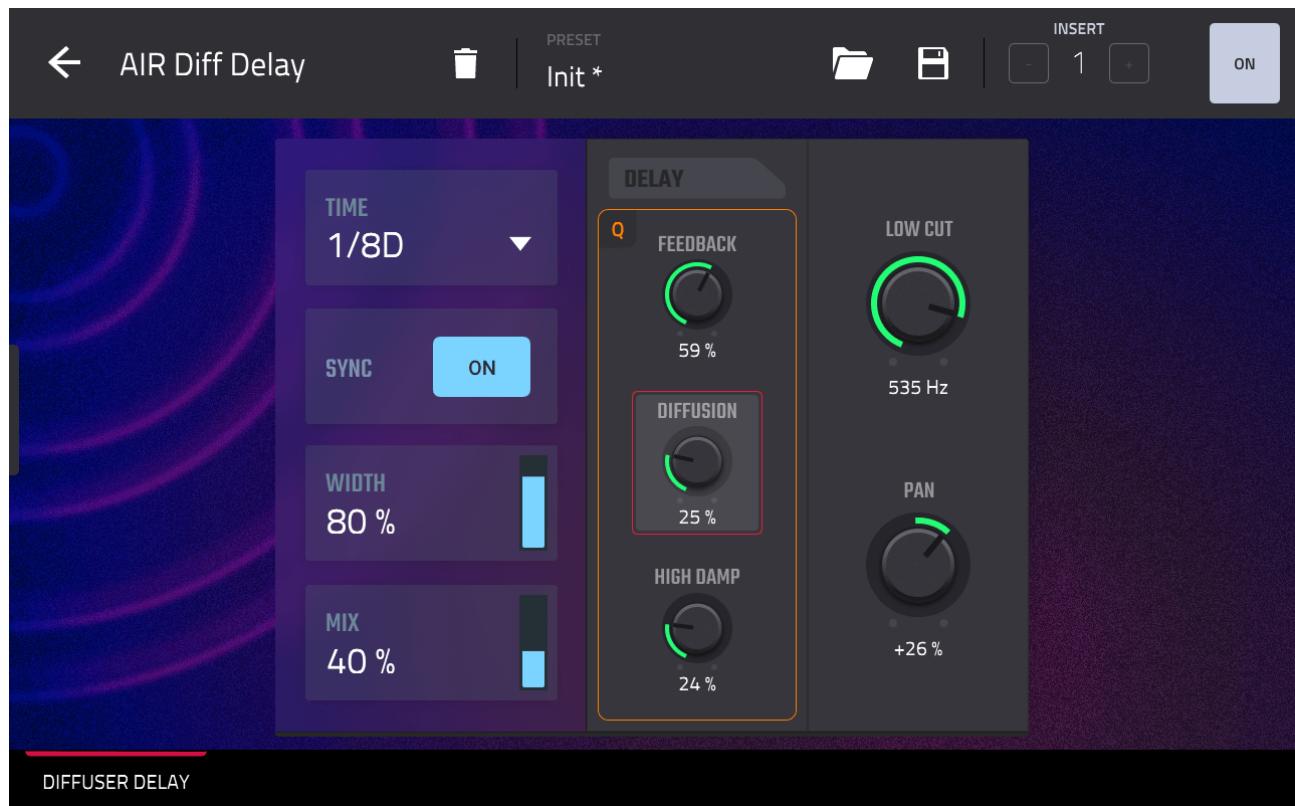
This is a useful preset that adds a nice moving stereo delay with plenty of filter resonance. Set a **MIX** of **30%** so the effect isn't too excessive and use a **FEEDBACK** of **50%** to extend the delay tail a little further.

You can experiment with the filtered delay; I dialled it down a little with a **RESO** of **80%** and a **RESO FREQ** of **1.58Hz**.

CHAINING FX

Hit pad **[A02]**. This is a snippet from a speech, I think there's some useful stuff in the second part although at this stage I'm happy to keep the whole sample just in case we can find uses for other parts later.

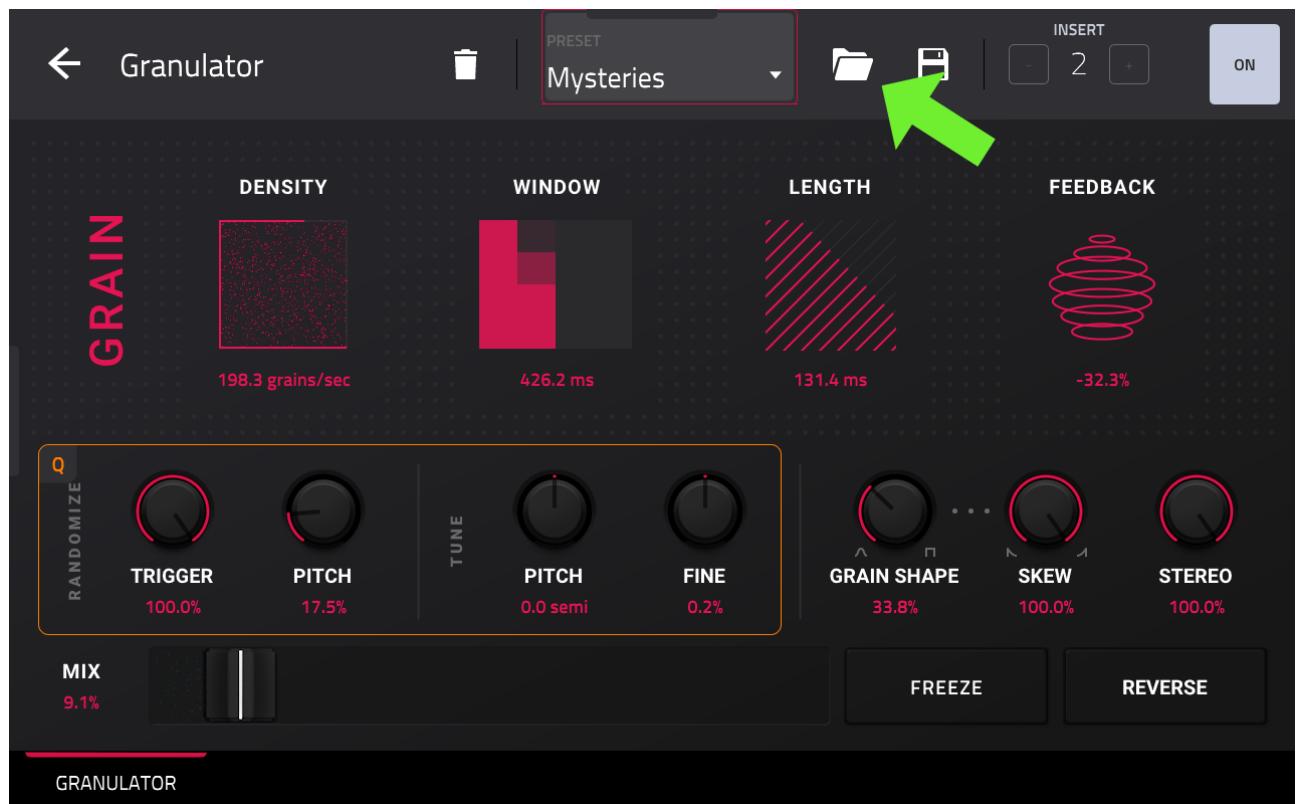
In **TRACK EDIT > SAMPLES**, move the **START** point to **187614** to isolate the words 'its real'. Hit **EFFECTS** and on **INSERT 1** choose the **Delay/Reverb > AIR Diff Delay** plugin. Hit the **pencil icon**:



The **Diffuser Delay** plugin creates an almost reverb-like delay effect. Set **WIDTH** to **80%** to give some additional stereo width. Reduce the **MIX** to **40%**. Increase the ambience of the effect slightly by setting **DIFFUSION** a little higher to **25%**.

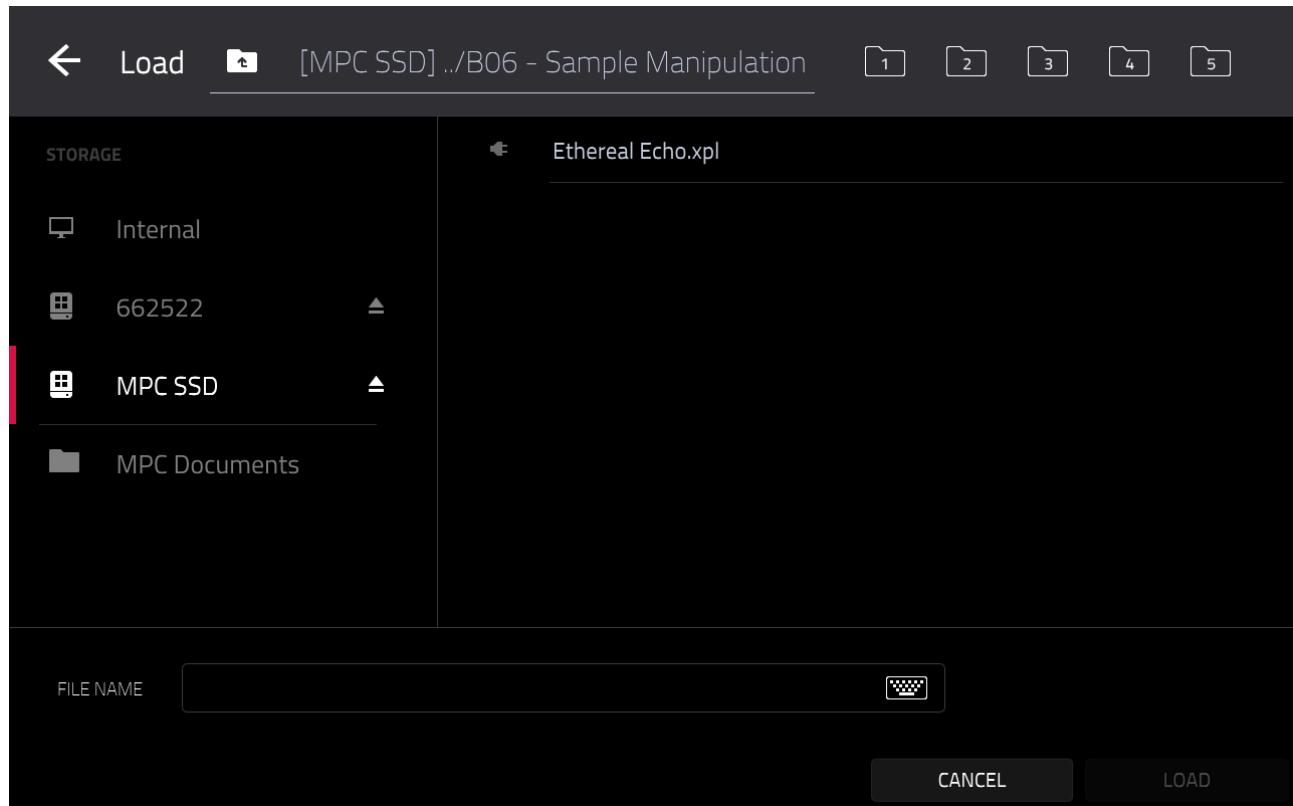
Try a **LOW CUT** of **535Hz** – this will remove some bass and mud in the delay signal, which can quickly clutter up the lower end of the mix. Set **PAN** to **+25** to give a nice offset to the delay repeats and finally set **FEEDBACK** to **59%** to shorten the amount of repeated delays.

Hit the back arrow at the top left of the screen and on **INSERT 2**, choose **Harmonic > Granulator**:

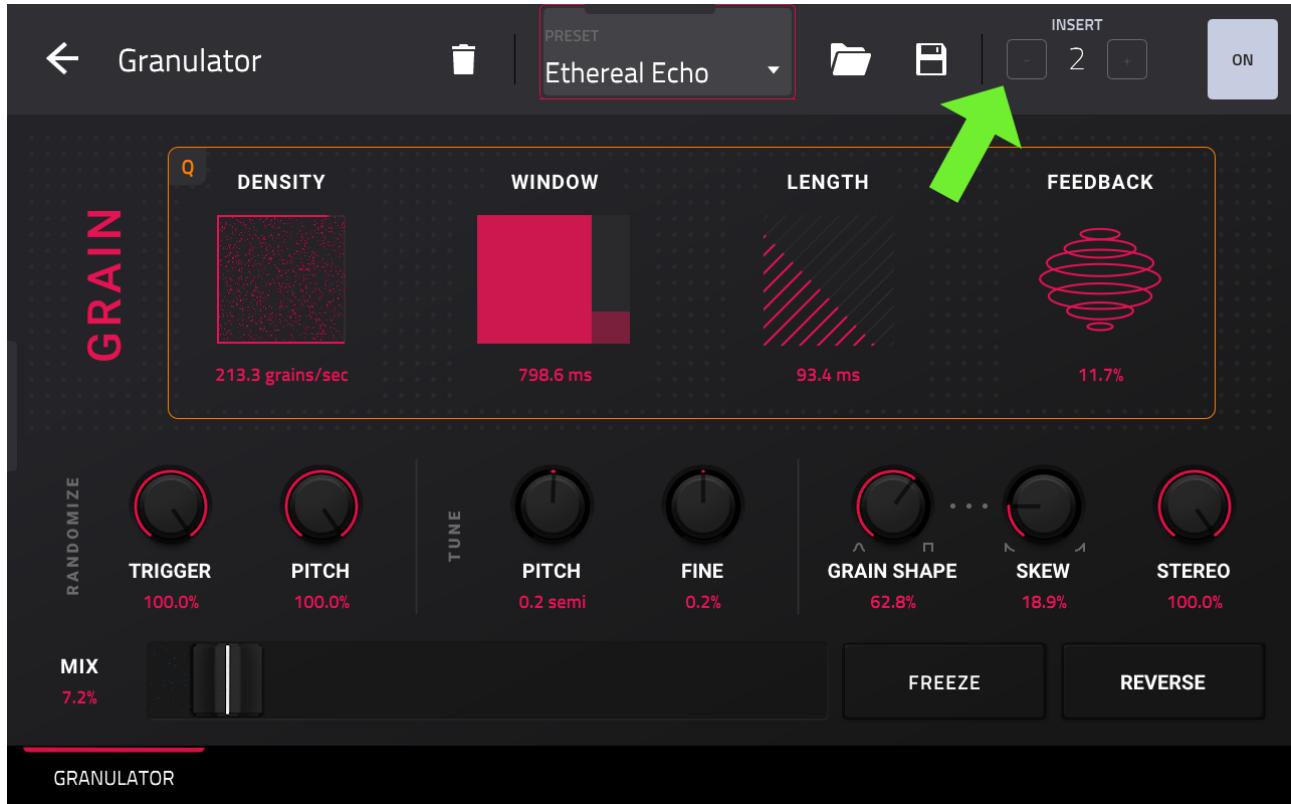


The Granulator breaks down a sample into small segments called 'grains' and then allows you to mangle them in different ways to create new sounds and textures. This one is quite overwhelming and I find it's often a case of just playing around with the various parameters until you hit upon a nice sound.

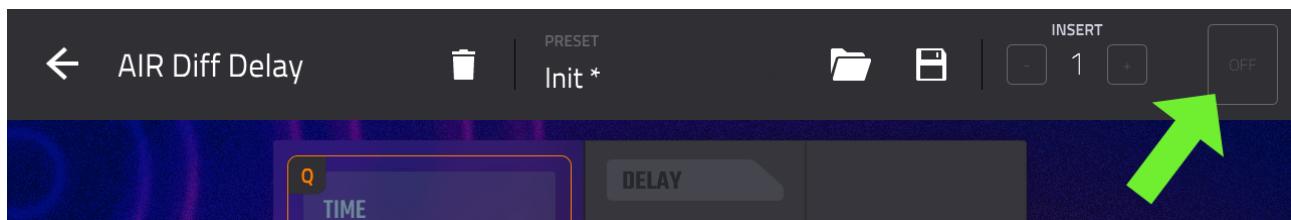
Let's load up a preset I've made called '**Ethereal Echo**' (which I adapted from the '**Mysteries**' preset)- tap on the **folder icon** in the Granulator settings screen and navigate to the **B06** folder:



Double tap the **Ethereal Echo.xpl** file and hit **LOAD**:



First, listen to this granulator effect without the delay. Tap on the '**INSERT -**' button in the top toolbar to change the current effect slot to '**T**' and then bypass the Diff Delay effect by tapping '**ON**' so it changes to **OFF**:



Preview pad **A02** - the granulator is adding a strange, haunting delay, with the fragmented grains giving a slightly disturbing, broken down echo.

Re-enable the Diff Delay, head back to the main **EFFECTS** screen and on **INSERT 3**, add the **Modulation > AIR Stutter** plugin:

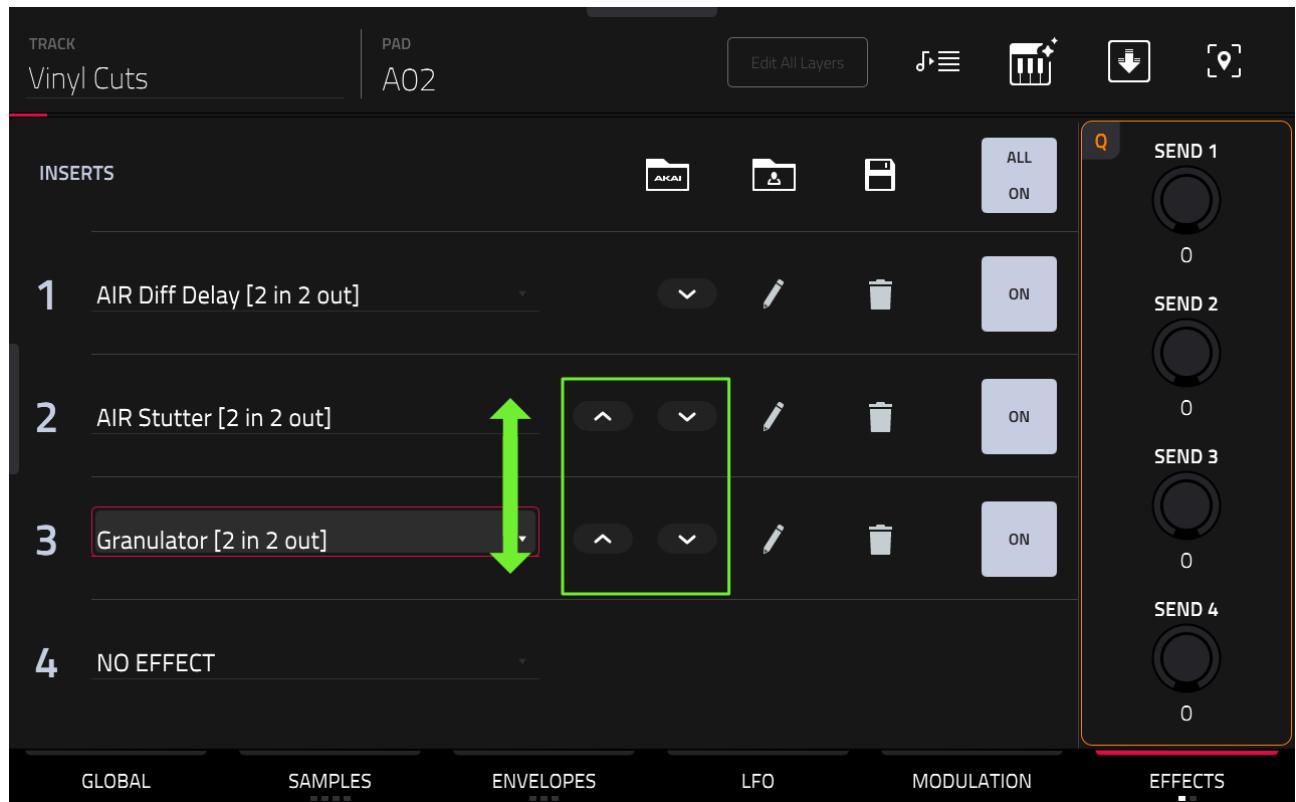


Listen to the default 'Init' preset to hear AIR Stutter in action. As you'd expect, it creates a stuttering effect on our delayed voice sample - we just need to tame it a little! First, take down the **MIX** to **45%**, this will re-introduce some of the 'direct' signal to make the stuttering effect less obtrusive.

Change **STEP LENGTH** to **33%** to shorten each individual stutter. Increase the overall stereo effect by setting **PAN MOD** to **75%**.

With Stutter applied to the delayed signal, we get a 'stuttered' delay tail. However you can easily change the order of the FX to completely change the way the stutter acts. Back in the main **EFFECTS** screen, tap the '**UP**' arrow

on the **INSERT 3** row – this will move the Stutter effect into **INSERT 2** (with the granulator moving to insert 3). Preview pad [**A06**] to hear the difference.



Now press the **UP arrow** for the **Stutter** effect to place it as **INSERT 1**. Now the stutter effect is only applied to the original vocal snippet and not the delay tail. It gives a completely different combined effect.

Which do you prefer? I'm going to go for the original configuration with Stutter placed at the very end of the 'chain' on INSERT 3, which adds stutter to the actual delay tail.

SAVING FX RACKS

We used one of the factory FX racks in chapter **B04** and you can easily make your own custom FX racks whenever you create a nice combination of FX inserts. On the main **EFFECTS** page, tap on the **disk** icon:



Give your rack a name and save to the suggested default location ('**MPC Documents > FX Racks**'). Alternatively save the FX Rack to a removable disk so it can be loaded into a different MPC.

To load any previously saved custom FX Rack to any pad, track or project, hit the '**Load FX Rack**' icon on the **EFFECTS** page

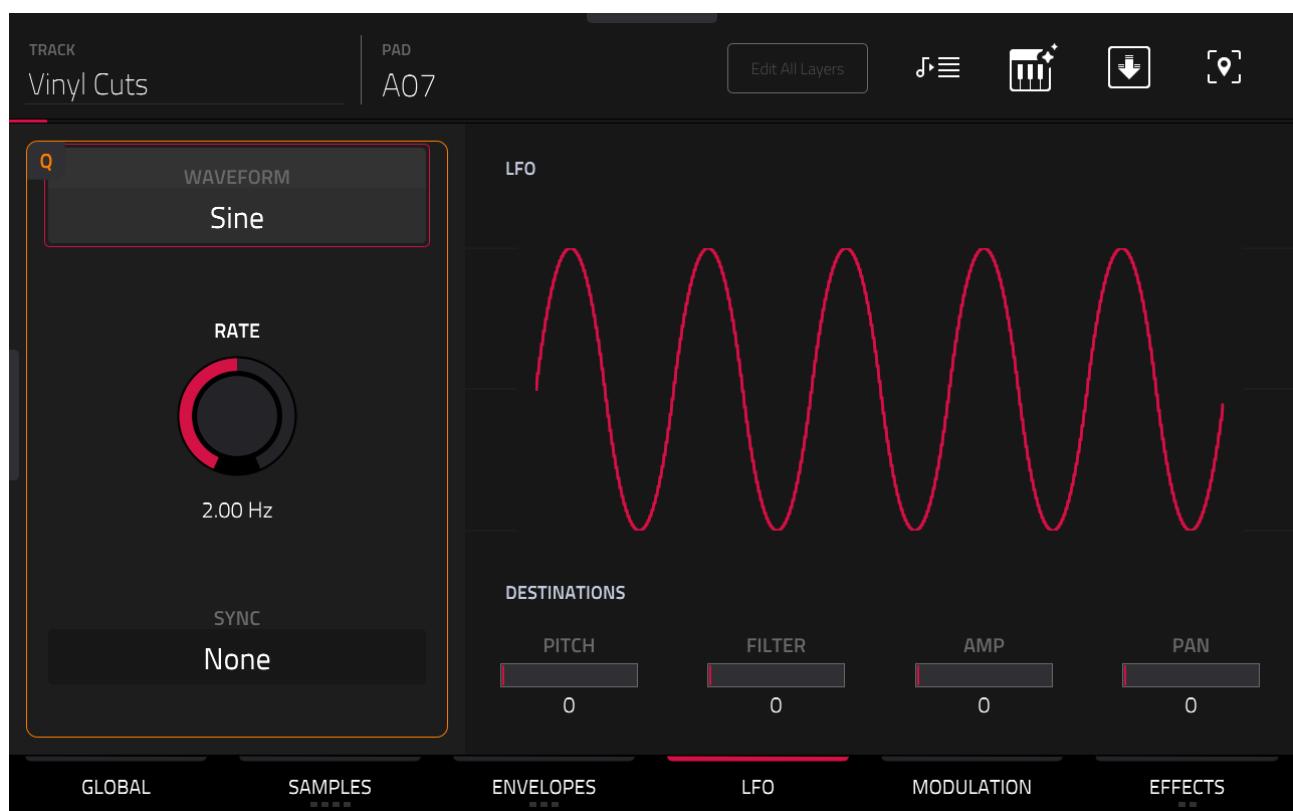
USING THE LFO

Select pad **[A07]**, a jazzy xylophone sample - let's give this a nice tremolo effect. Tremolo involves varying the volume of a sound over time and can be achieved in a couple of ways within an MPC.

One method is achieved by using the **Tremolo** effect plugin (**Modulation > Tremolo**), but we can also achieve this with less CPU by utilising the **LFO**.

LFO stands for '**low frequency oscillator**' and is a signal that vibrates at a frequency too low for human hearing. This oscillator can be used to *modulate* any number of parameters on a pad, producing a range of different effects.

Go to **TRACK EDIT > LFO**:



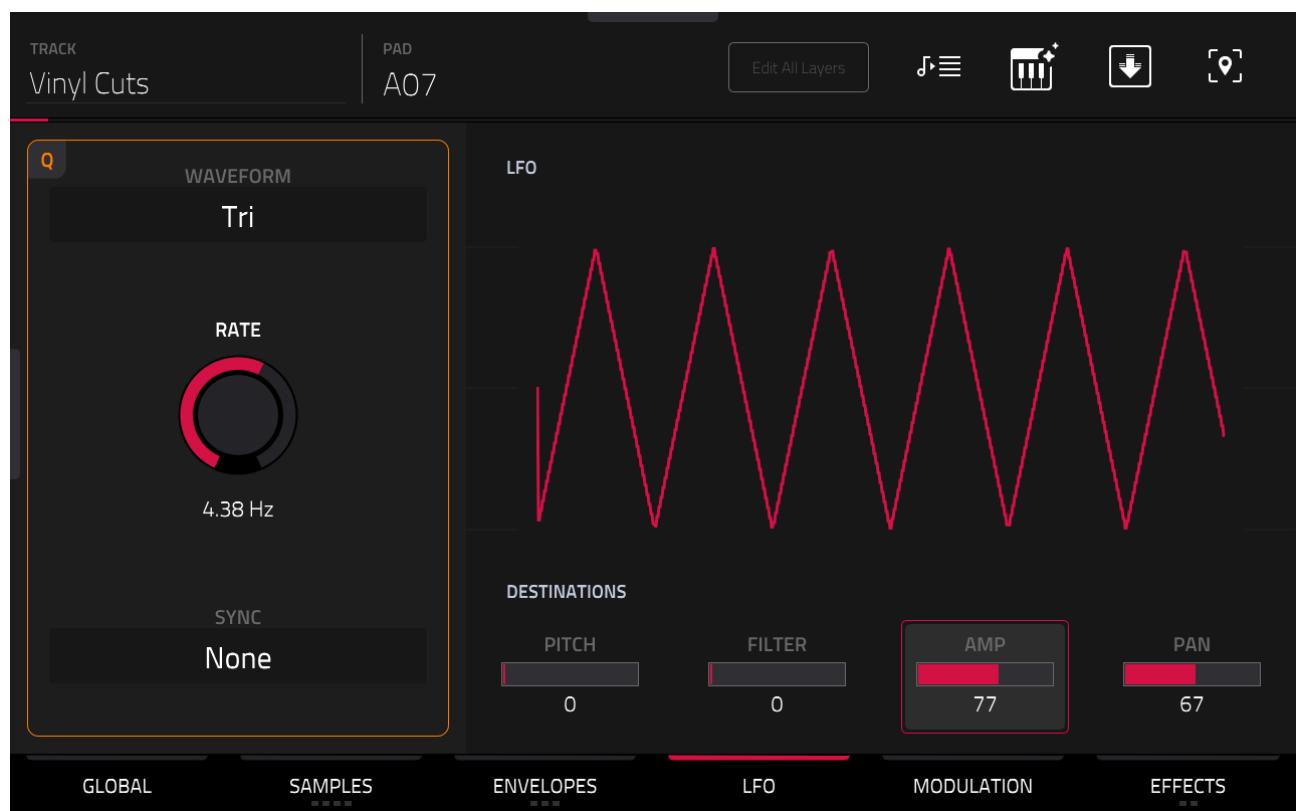
We can see that the LFO contains four distinct **DESTINATIONS**. These are the fixed parameters that we can modulate using the LFO, and we can modulate any or all of them.

Tremolo involves the modulation of volume (amplitude), which refers to the AMP destination parameter. Set **AMP** to **127** – this will provide the maximum volume modulation (we'll adjust this to a less extreme setting later).

We now need to select a suitable **WAVEFORM** for the oscillator – this dictates the pattern of the LFOs oscillation. The default waveform is a **Sine Wave** which as shown in the on screen wave display is the familiar smooth up and down waveform. This can work really well for tremolo, so for the moment leave this at the default.

Next is the **RATE** of modulation. This can either be set to a fixed rate or we can use the **SYNC** option to lock the modulation rate to our sequence tempo. Try a fixed **RATE** of **4.38 Hz**.

Preview pad **[A07]** to hear the volume modulation in action. Now change to a Triangle waveform (**WAVEFORM: Tri**):



A triangle waveform is similar to a sine wave but without the smooth peaks, giving a more angular and abrupt change in amplitude. I actually prefer the sound of the triangle wave here.

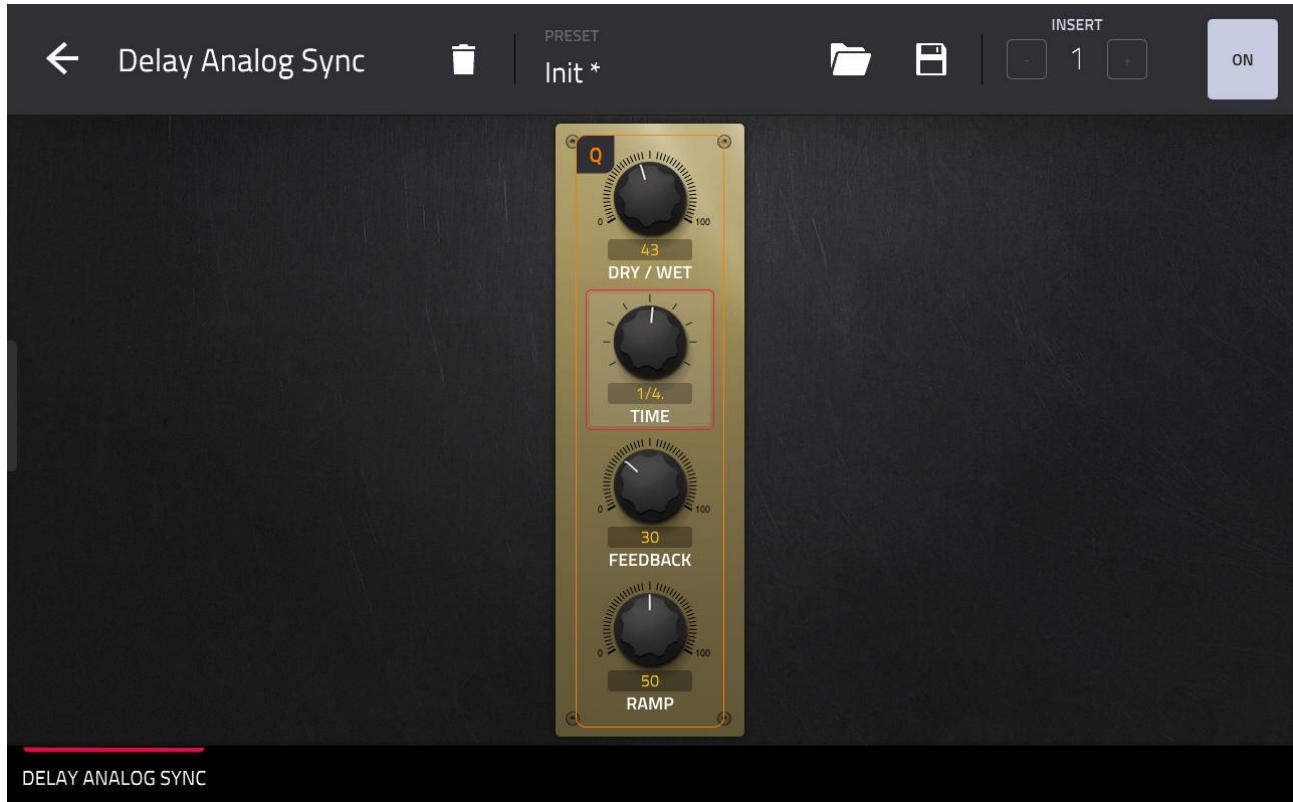


Try all the different LFO waveforms to hear the different modulating effect that have on the sample, particularly the Saw and Square waves.

Now, while not strictly 'tremolo' I do like to add some modulated panning to add some additional depth and movement to my LFO tremolo. Again, start with the maximum **PAN** of **127** so you can easily hear how the pan modulation affects the signal.

Now adjust the AMP and PAN parameters to less extreme versions. I went for **AMP: 77, PAN: 67**.

Finally let's add some decay to this pad. Go to **EFFECTS** and on **INSERT 1** add the **Delay Analog Sync** plugin ('**Delay/Reverb > Delay Analog Sync**'):



This is a really simple plugin that emulates an analog delay unit. The decays for this plugin will always sync with the tempo of the current sequence.

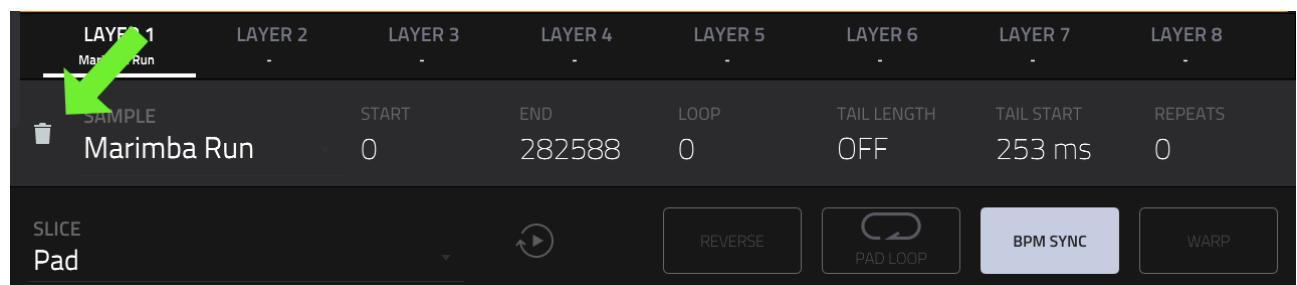
Tap on **TIME** and turn the (**DATA WHEEL**) clockwise to set a **TIME** of **1/4**. (Notice the 'dot' which gives a 'triplet' delay repeat). Set a **FEEDBACK** of **30** and a **DRY/WET** of **43**. Preview pad [**A07**] to hear the final modulated pad.

REMOVING SAMPLES FROM TRACKS & PROJECTS

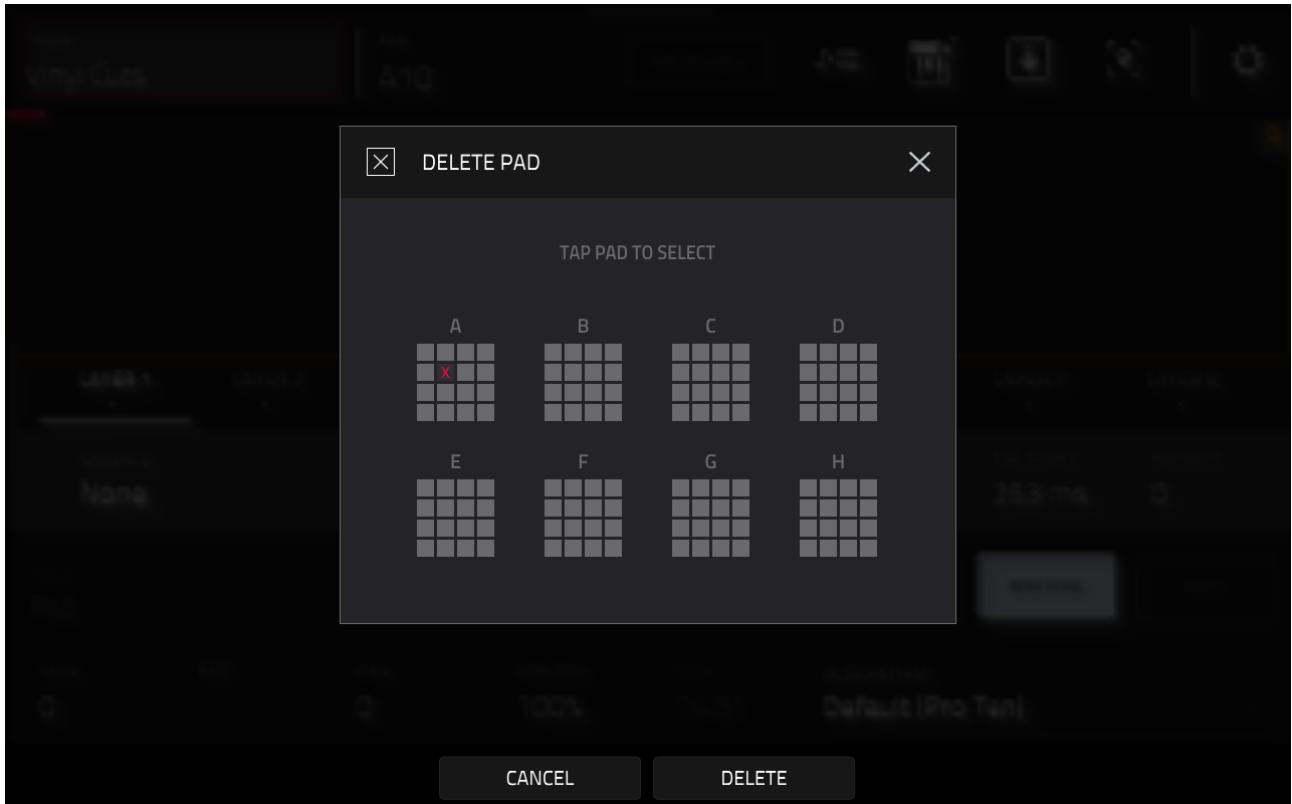
I'm just not feeling the sample on pad [**A10**] for this kit, so I'd rather not have it sitting in there. Ultimately you have two options for samples that you have no interest in; you can just remove them from the current track and leave

them sitting in the 'sample pool' (just in case you think you might like ever need them) or you can just delete them from the project and free up some memory.

To remove a sample from the current pad layer only, you can tap on the '**bin**' icon to the left of its name:

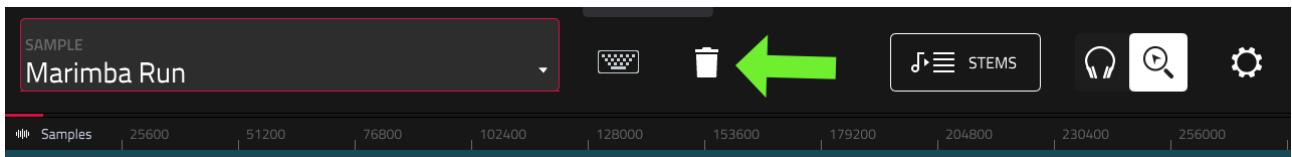


Alternatively, hold down **[SHIFT]** and hit the **[COPY]** hardware button to bring up the **DELETE PAD** screen:



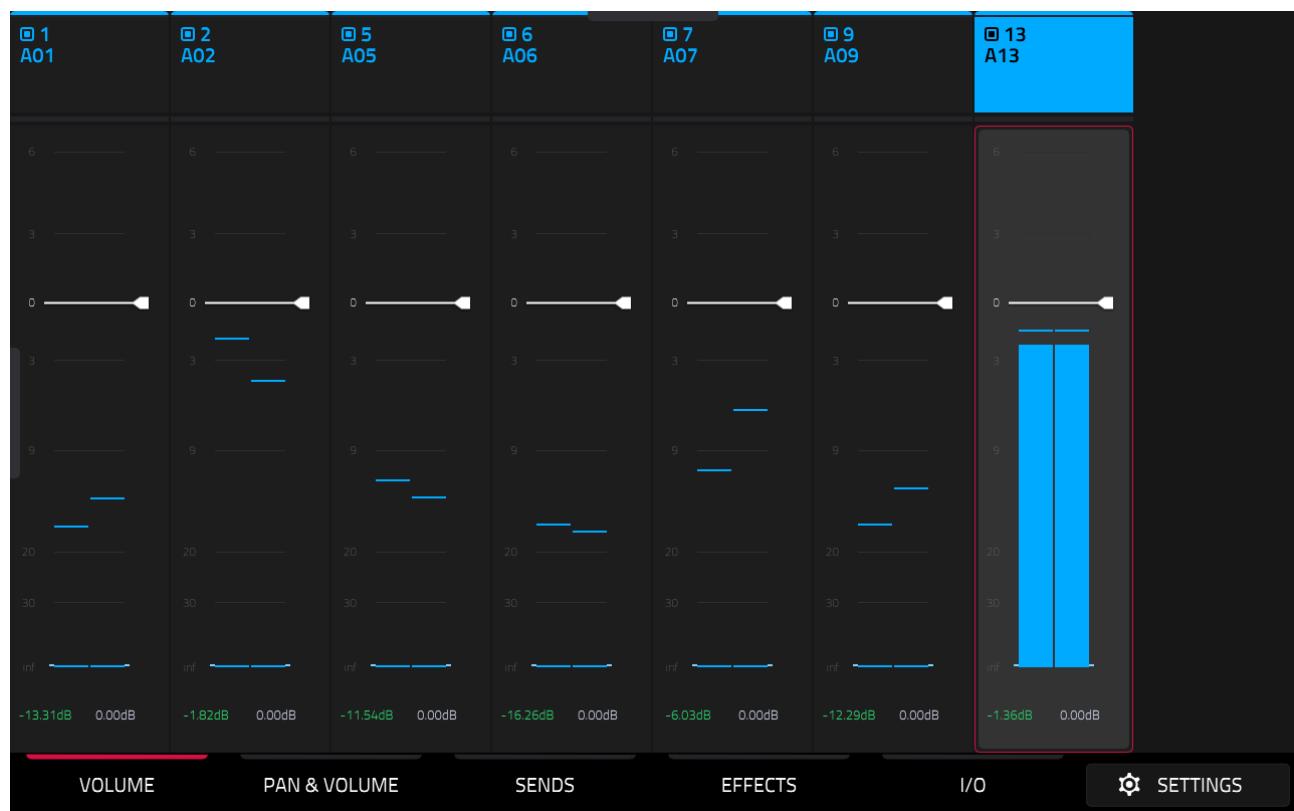
This will also 'reset' any parameters on the pad back to defaults. Tap on pad [A11] so it turns red – if you wish you can also tap multiple pads to delete them all together. (You can also use **BROWSER > SAMPLE ASSIGN > CLEAR PAD** to clear pads individually).

To quickly remove a sample completely from your project, you can delete it directly within [**MENU**] > **PROJECT** or from the toolbar in **SAMPLE EDIT**:



A QUICK PAD MIX

Head over to **[PAD MIXER]** and just have a quick tweak of the pads to get the levels vaguely balanced. Focus initially on the **[A13]** bass and the **[A02]** voice sample as are both pretty loud and close to 0dB, so decrease them both:



Load up my version so far, **B06 Vinyl Cuts Final.xpj**

B07: CRAFTING THE INITIAL THEME

So far we've built a custom drum kit, written our own unique drum groove and now have a 'melodic' kit packed with various melodic elements which we can use as inspiration for our beat's melodic components. In this tutorial we're going to start creating a short 'theme' which can serve as the foundation for a complete song.

TOPICS COVERED IN THIS CHAPTER

- ✓ Laying down some ideas
- ✓ Creating & playing melodic pads
- ✓ Using 16 Levels
- ✓ Working in LIST EDIT
- ✓ Applying Multiple Modifiers
- ✓ Adding probability events

Go to **[BROWSER]** > **Expansions** > **MPC Bible 3 Project Files** and from the **Chapter B07** folder load up the project file '**B07 Brainstorming.xpj**'. Go to **[MAIN]** and on **sequence 01** you'll find a copy of everything we've been working on so far; with our **Drums** on track 01, and our **Vinyl Cuts** track on track 02.

In the first instance, simply hit [**PLAY START**] to get the drums playing with track 2 currently selected, begin firing off pads from the **Vinyl Cuts** track to get a feel of the kit and see if any ideas begin to emerge.

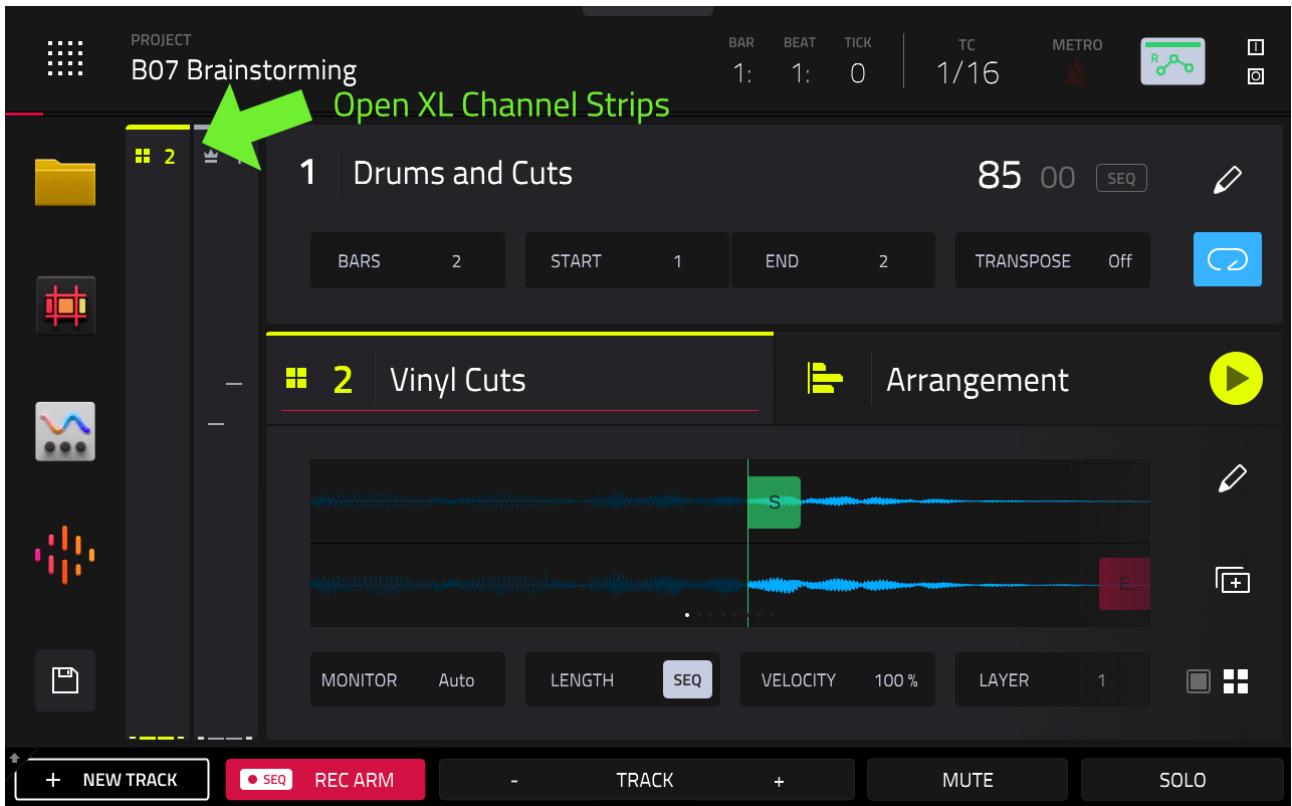
At this point the 'Vinyl Cuts' track is just a collection of one shot samples so we're currently limited to experimenting with layering and timing of these one shots, but we'll soon look at ways in which we can begin transforming some of these cuts into playable instruments.

The first thing you'll probably notice is that the Vinyl Cuts track is generally much louder than our Drums track. Eventually we'll be using track insert FX to control the dynamics and levels of the mix, but for the moment we just need to have an 'okay' volume mix so we can concentrate on the compositional aspects, so let's adjust the volume of the Vinyl Cuts track.

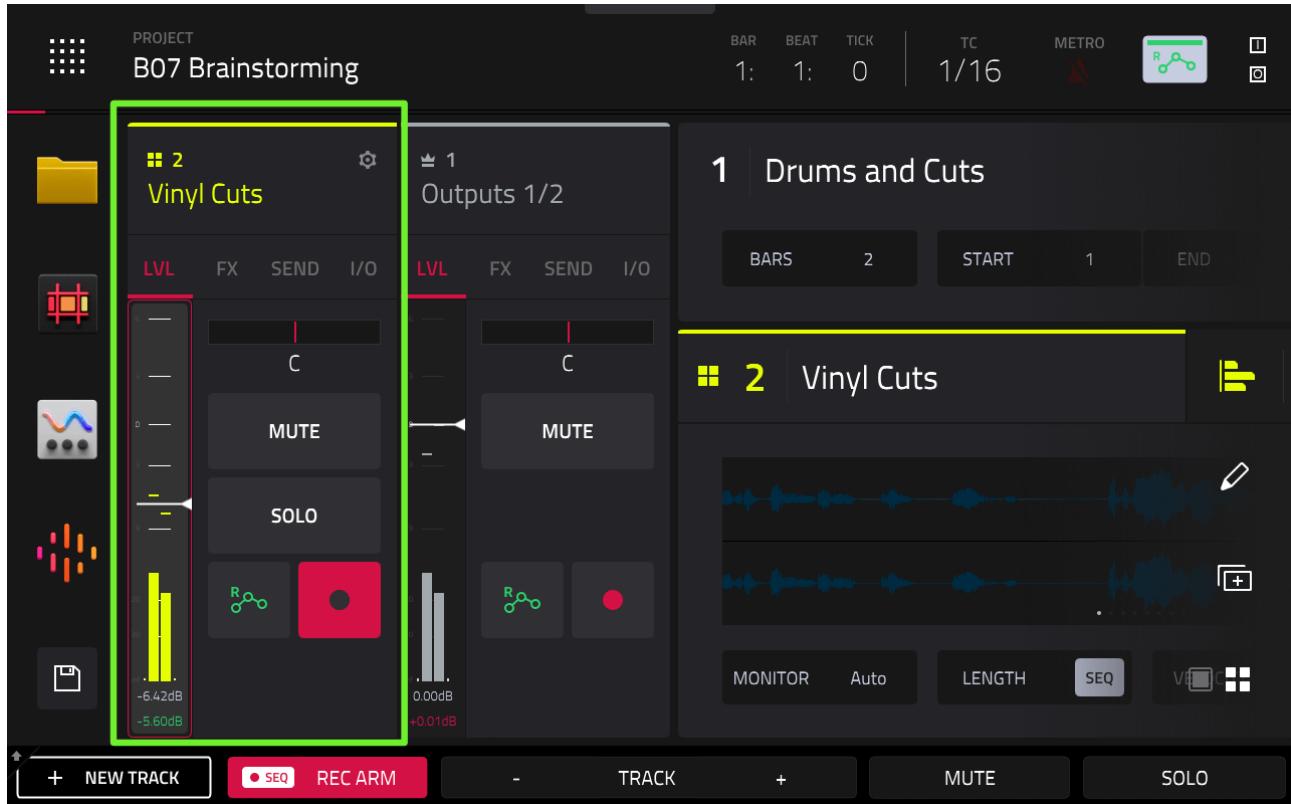
USING THE XL CHANNEL STRIPS

We've previously used the **PAD MIXER** to adjust the levels of individual pads *within* a track, but we can also adjust mixer levels for the track as a whole.

A really quick way of tweak the output volume of the current track can be found in [**MAIN**]. To the left of the sequence name you'll see two vertical strips with small header icons – just tap your finger here:



This reveals the **XL CHANNEL STRIPS**:



These provide instant access to two related mixer channels. By default the left hand strip displays the mixer channel strip for the currently selected track (currently, Vinyl Cuts), while the second strip can be used to control the mix of the main stereo outputs (Outputs 1/2).

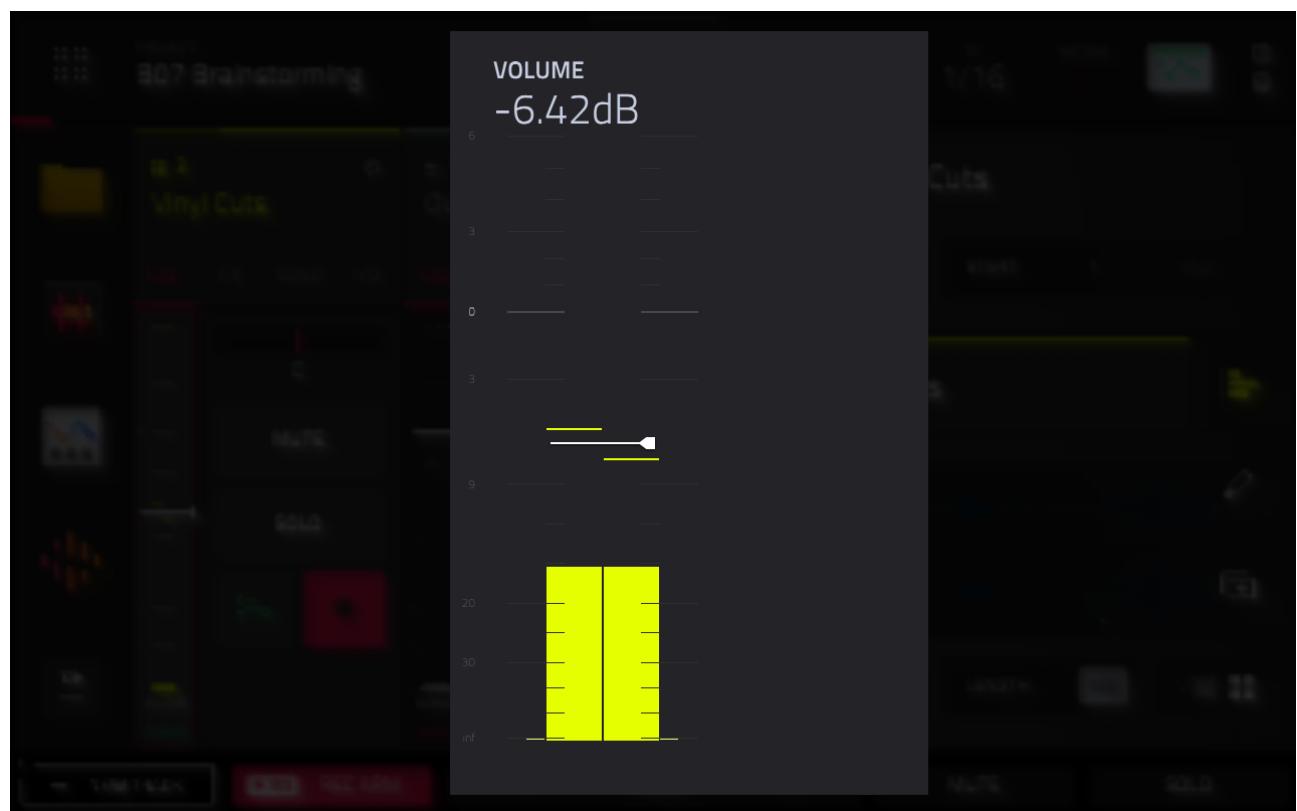
These two strips are related, simply because by default, the output of the Vinyl Cuts track (and of any other sequencer track) is sent directly to Outputs 1/2.

Each channel strip contains a number of different tabs, each providing control of different aspects of the mix, and we'll be meeting these as we progress through the course. For the moment, let's just concentrate on the default '**LVL**' tab which is used primarily for controlling output level and panning.

Turn on [**FULL LEVEL**] and hit [**PLAY START**] so the **Drums** track plays in the background. Tap on the **LEVEL** slider for the **Vinyl Cuts** track and drag down the track level while you simultaneously bash a few of the active pads from the **Vinyl Cuts** track.

Use your ears to bring the volume of the track down so it sits a little better with the drums – around **-6.42dB** (the white number of the bottom of the level meter).

You can also double tap the meter to see an enlarged view:



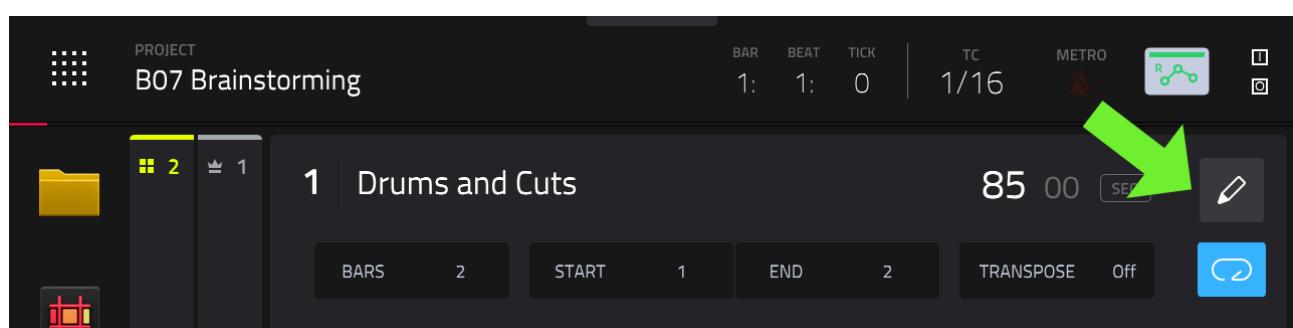
The XL Channel Strips are great for this kind of quick tweaking, especially when you only really need to focus on one particular track (rather than performing an entire multi-track mix).

LAYING DOWN SOME IDEAS

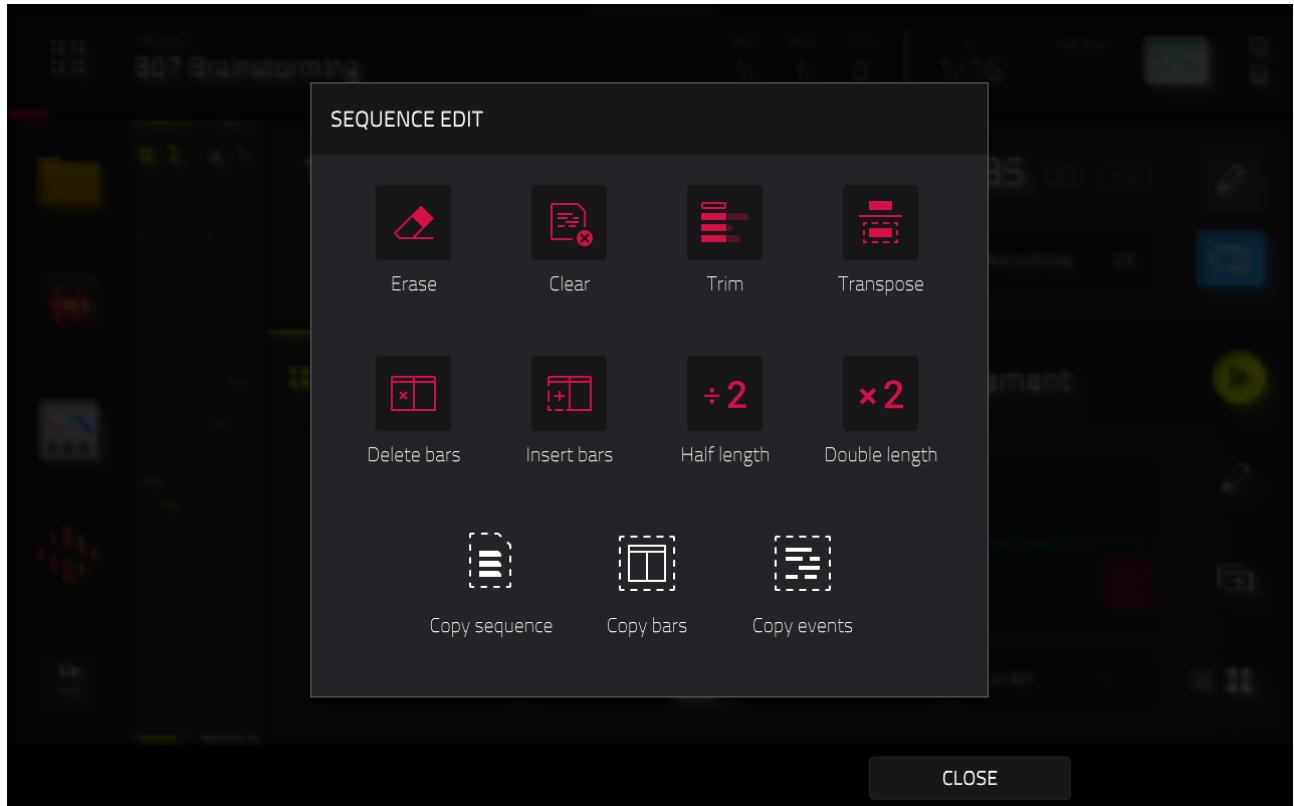
With your drums still playing, use the **Vinyl Cuts** track to start experimenting with some 'one shot' ideas, just hitting some pads and seeing what works. We're looking to build the foundation to a hook, also effectively some simple textures to serve as the basis of the eventual 'theme' or 'hook' for the entire song.

When you come across something you'd like to capture in the sequencer, just press the **[OVERDUB]** button while the sequence is in playback mode and you'll instantly be taken into 'overdub' mode where you can begin laying down your idea to the sequencer.

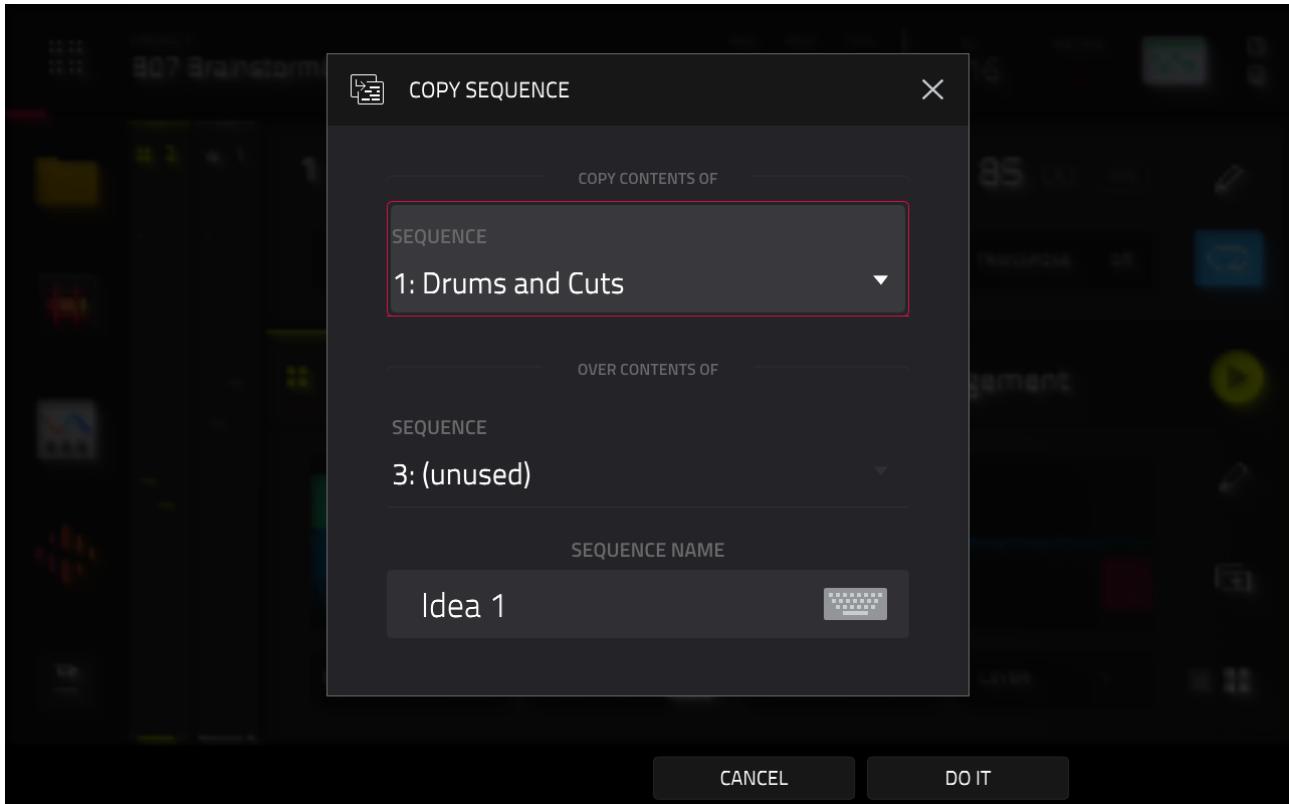
If after getting an initial idea down you want to try a few other ideas out, close the XL Channel Strips and hit the **EDIT** icon at the top right of the screen in **[MAIN]**:



This brings up the **SEQUENCE EDIT** window:



This contains a number of editing functions which can be applied to the current sequence. Select **Copy Sequence**:



Copy sequence 1 to the next available 'unused' sequence slot (it will be sequence 3, as I've reserved sequence 2). After copying, select track 2 on the newly copied sequence. You can now either hit the [**ERASE**] button and delete the events in track 2 to leave you with a clean slate to record to, or use the [**RECORD**] button to write over the copied events as you lay down your next idea.



*Forgot to hit [RECORD] and didn't lay down that killer idea? No problem, hold down [**SHIFT**] and then [**RECORD**] to enable '**Retrospective Record**'. Your last performance will be added to the track, exactly as you played it (any timing correct settings will be ignored).*

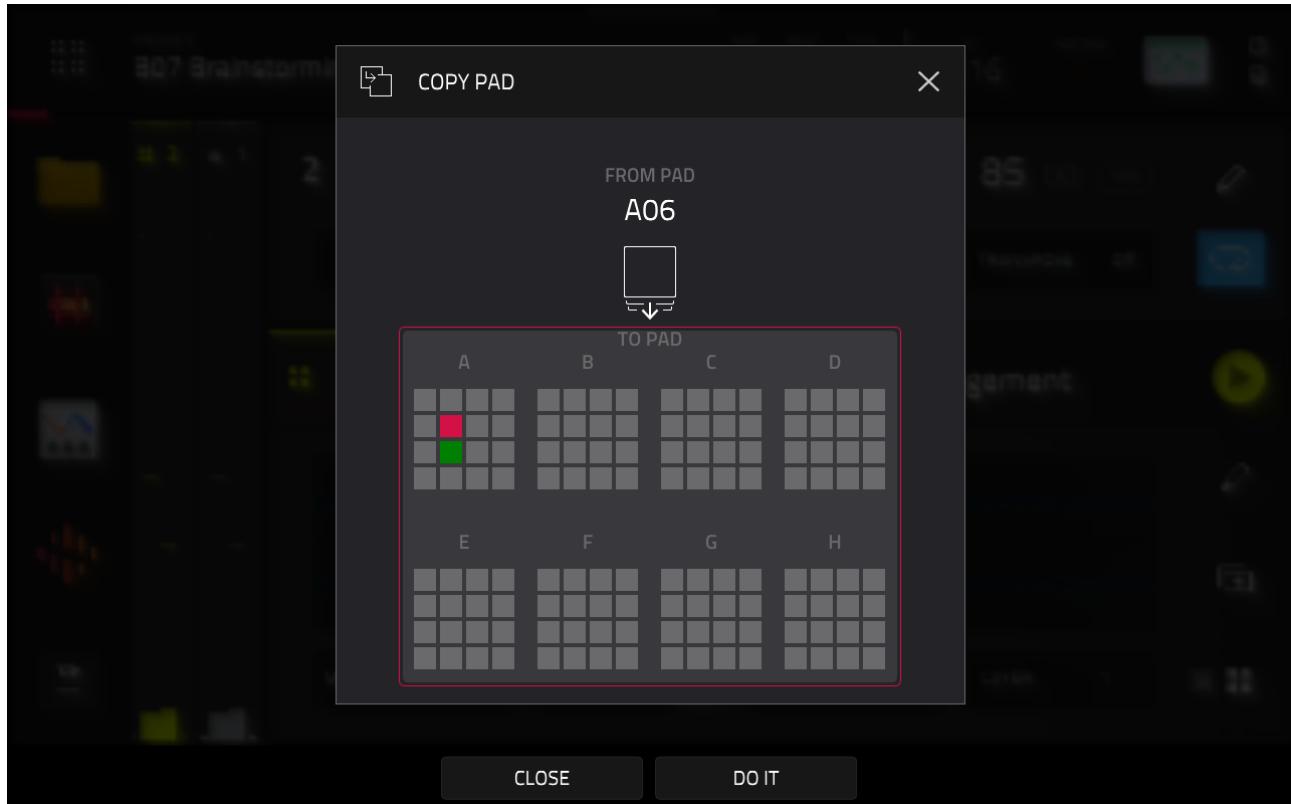
'Copy Sequence' as many times as you need until you feel happy to focus on one idea.



Although not necessary (as your project can happily hold up to 128 sequences) you might like to 'clean up' your project of any unwanted sequences so you can focus on 'the one'. While there's currently no dedicated 'delete sequence' function in sequence edit, the workaround is to use 'Copy Sequence' to simply copy one of the existing 'unused' sequences over the sequences you no longer want.

ADDING MELODIC LINES

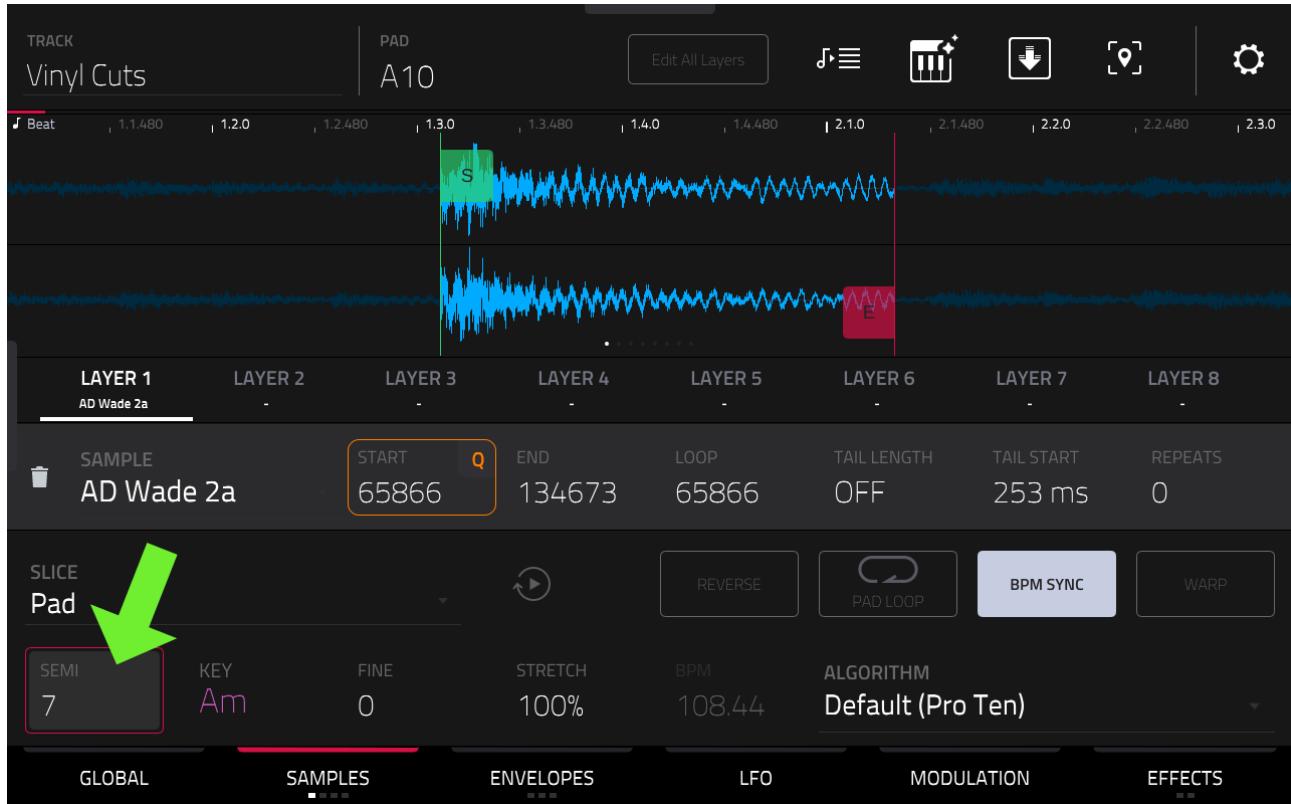
So far we have just used 'one shots', but it's quite easy to create some more interesting 'melodic' elements, just from these pads. One way to create additional melodic notes is to make a second, pitched-up copy of a pad. Hold down the **[COPY]** hardware button and keep it held down – you'll see the following dialog:



With [**COPY**] still held down, hit pad [**A06**] and you should see pad A06 turn green on the screen and the background turn to a light grey with a red outline. This indicates that pad A06 is the 'source' pad, i.e. the one we are copying.

Now, with [**COPY**] still held down, tap on pad [**A10**] to set the destination pad, i.e. the one that we'll be copying to (if you wish to copy to multiple pads, just hit those pads as well so they all turn red). Release the [**COPY**] button to complete the pad copy.

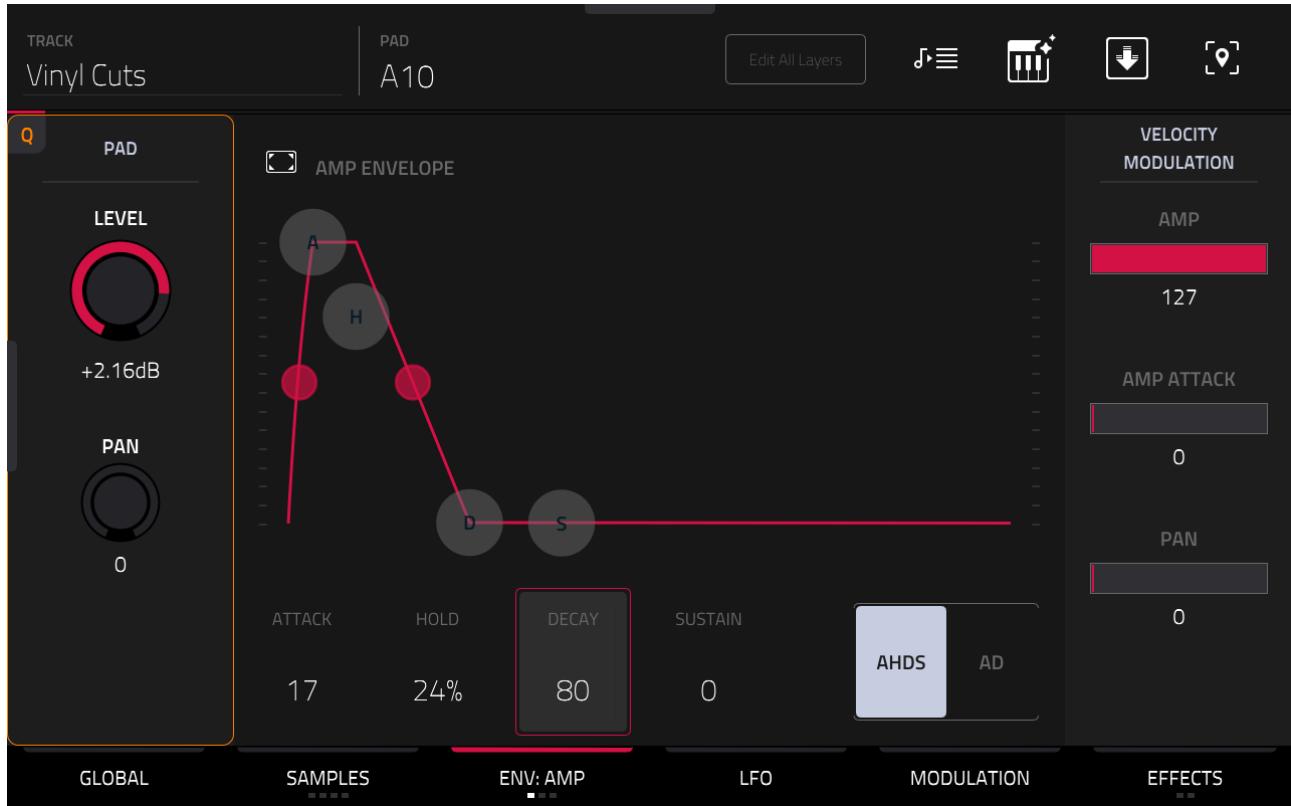
Select pad [**A10**] and go to **TRACK EDIT > SAMPLES**:



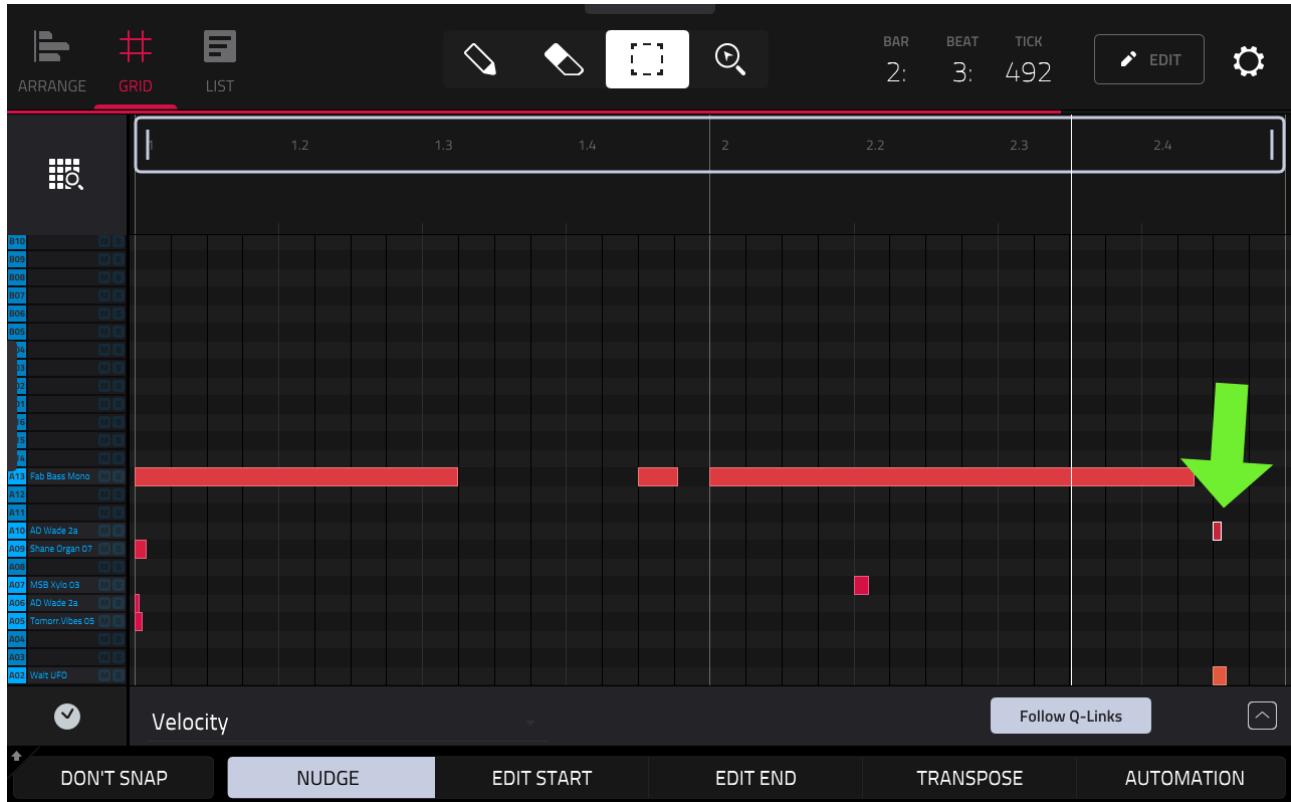
You can use the layer's **SEMI** parameter to change the pitch of this copied pad. Remember this copy is completely independent to the original source pad. Currently the SEMI is set to -5, so to make this an octave higher, add 12 semitones to -5, so set a **SEMI** of **7**.

Listen to the new pad, the pitching up process has caused the end to develop a clicky end, so head over to **ENVELOPES** and reduce the decay value to smooth it out a little, try a **DECAY** of **80**.

B07: CRAFTING THE INITIAL THEME



Load the project file **B07 Basic Theme.xpj** and hit [**PLAY START**]. Here I've added that pitched up version of [A06] to pad **[A10]** and recorded an extra event to the track at time location **2.4.480** – check it in **GRID VIEW**:



CREATING MELODIC LINES WITH 16 LEVELS

The previous method can, in theory, be expanded to cover as many tuned pads as you need, each with its own unique SEMI value, effectively giving you a mini instrument to play. However there's much better options when you need multiple notes, one of which is **16 LEVELS**, a legacy MPC feature that's been used on countless classic tunes over the years.

Tap on pad [A01] and press the **[16 LEVEL]** button:



Make sure '**Active**' is checked, and set **TYPE** to **Tune**. Leave all other settings as they are and hit **CLOSE**.

Now start hitting the pads in **BANK A** and you'll hear pad [A01] has been tuned in semitones and spread across all 16 pads, giving you a 'sixteen note' playable instrument. The '**ORIGINAL PAD**' setting in the 16 LEVELS screen tells you which pad is currently the 'untuned' version.

Your Vinyl Cuts kit is still under there but it's just temporarily hidden while 16 LEVELS takes over your pads.

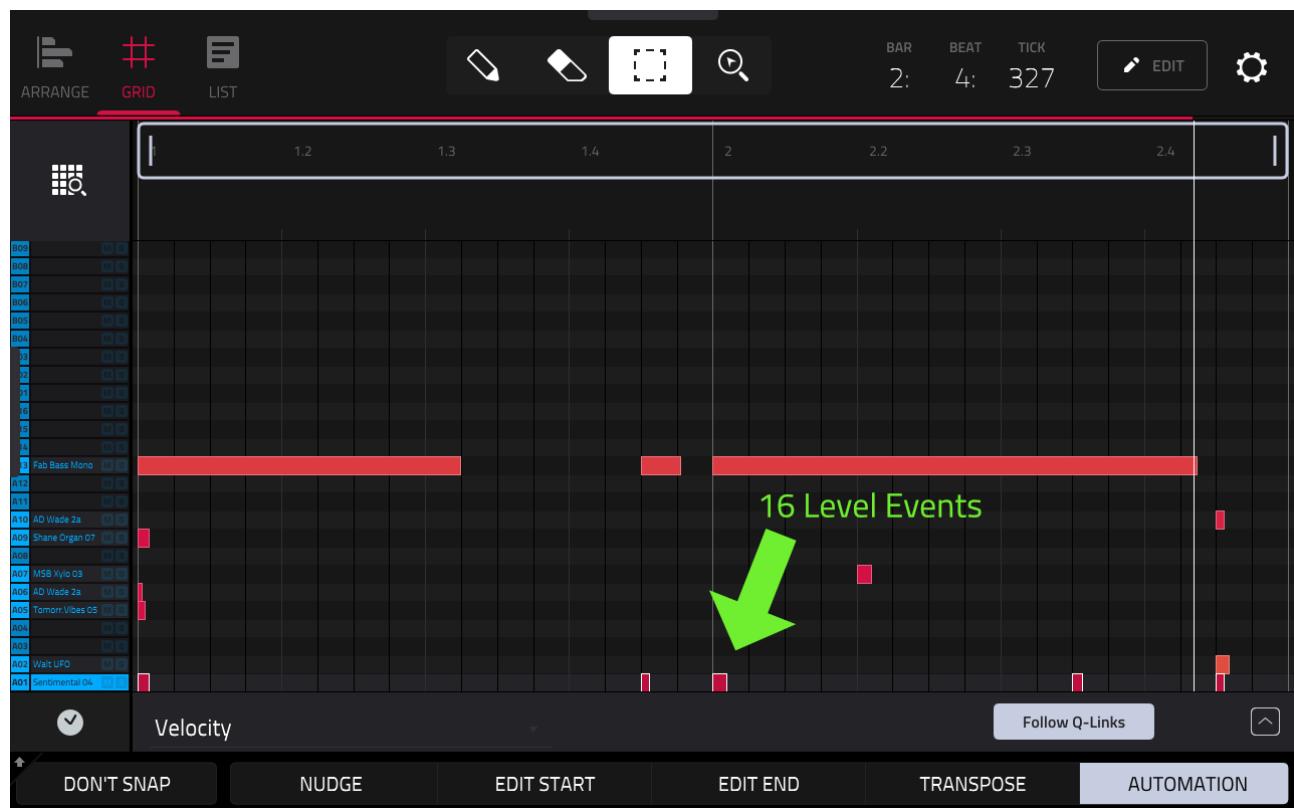
Hit [**PLAY START**] and begin experimenting with melodies from your temporary 16 LEVELS instrument. Once you find a nice hook to add to your sequence, hit [**OVERDUB**] and record your performance to **track 2**.

When you've finished recording your performance press the [**16 LEVEL**] button and your pads will return to the standard Vinyl Cuts kit.

Select **sequence 2** and hit [**PLAY START**] to hear my 16 LEVEL recording.

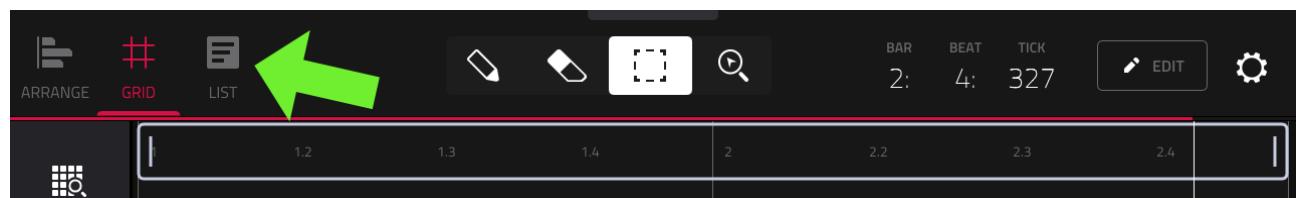
VIEWING 16 LEVEL MIDI EVENTS

With **sequence 2, track 2** still selected, go to [**GRID EDIT**] and hit pad [**A01**] to select the 16 LEVEL events on the [**A01**] row (remember to disable the 16 LEVEL feature first):



We can see the pad [A01] events but they are all seemingly identical. So how does 16 LEVELS record the different pitched versions into the sequencer?

Tap on the **LIST** icon in the top tool bar:

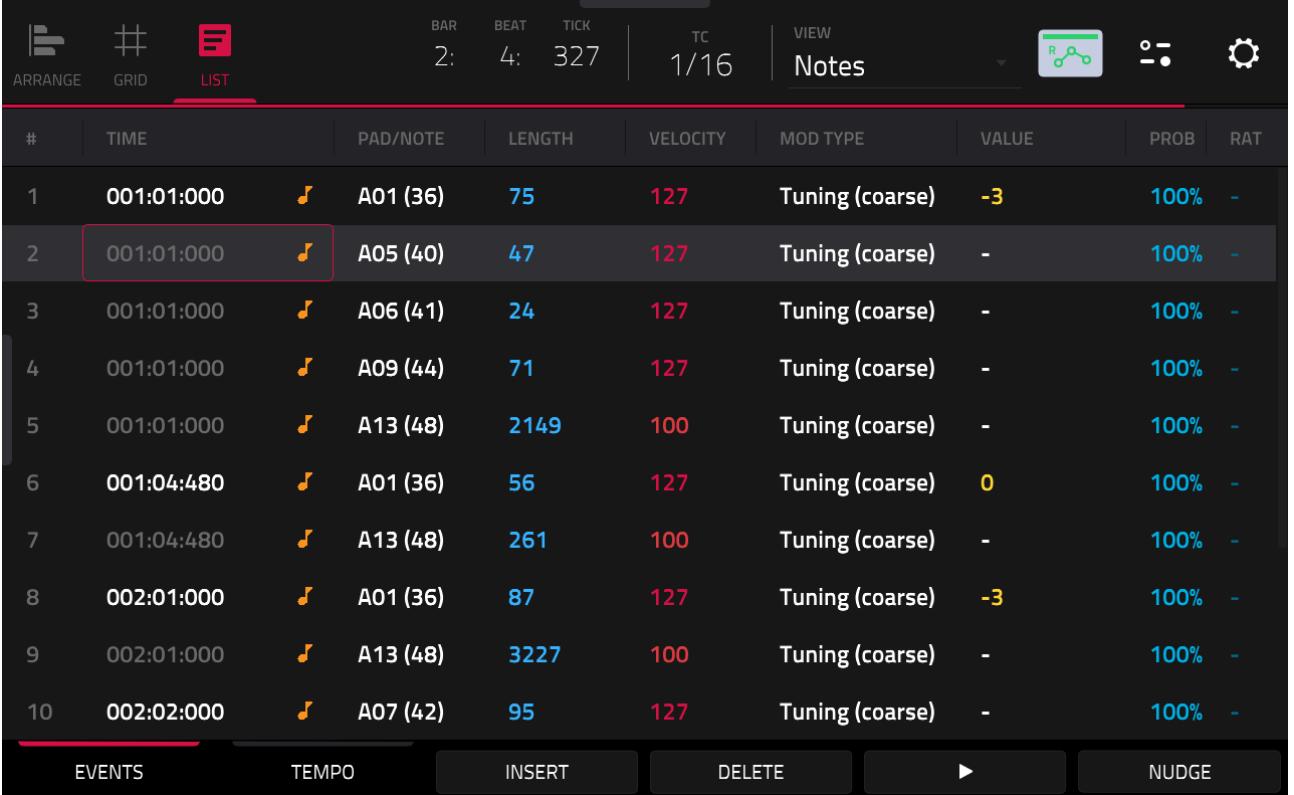


Or go to **[MENU] > LIST EDIT:**

The screenshot shows the LIST EDIT screen. At the top, there are icons for ARRANGE, GRID, and LIST, with LIST being the active tab. To the right are tempo settings (BAR 2, BEAT 4, TICK 327) and a timecode field (TC 1/16). A dropdown menu labeled 'VIEW' is open, with 'All' selected. Below the menu is a grid of event data. The columns are labeled: #, TIME, PAD/NOTE, LENGTH, VELOCITY, MOD TYPE, VALUE, PROB, and RAT. The data grid contains 10 rows of events, each with a unique ID (1-10), timestamp, note name (e.g., A07, A01, A05, A06, A09, A13), note length, velocity, modulation type (e.g., Aftertouch, Tuning (coarse)), value, probability, and rate. At the bottom are buttons for EVENTS, TEMPO, INSERT, DELETE, and NUDGE.

#	TIME	PAD/NOTE	LENGTH	VELOCITY	MOD TYPE	VALUE	PROB	RAT
1	001:01:000	A07 (42)			Aftertouch	0%		
2	001:01:000	A01 (36)	75	127	Tuning (coarse)	-3	100%	-
3	001:01:000	A05 (40)	47	127	Tuning (coarse)	-	100%	-
4	001:01:000	A06 (41)	24	127	Tuning (coarse)	-	100%	-
5	001:01:000	A09 (44)	71	127	Tuning (coarse)	-	100%	-
6	001:01:000	A13 (48)	2149	100	Tuning (coarse)	-	100%	-
7	001:04:480	A01 (36)	56	127	Tuning (coarse)	0	100%	-
8	001:04:480	A13 (48)	261	100	Tuning (coarse)	-	100%	-
9	002:01:000	A01 (36)	87	127	Tuning (coarse)	-3	100%	-
10	002:01:000	A13 (48)	3227	100	Tuning (coarse)	-	100%	-

List Edit provides a 'behind the scenes' view of our current track, presenting all recorded events in text format. The default view will display all recorded events including aftertouch and automation which can make the view quite messy so let's clean up the view a little. In the toolbar, select **VIEW: Notes**:



#	TIME	PAD/NOTE	LENGTH	VELOCITY	MOD TYPE	VALUE	PROB	RAT
1	001:01:000	A01 (36)	75	127	Tuning (coarse)	-3	100%	-
2	001:01:000	A05 (40)	47	127	Tuning (coarse)	-	100%	-
3	001:01:000	A06 (41)	24	127	Tuning (coarse)	-	100%	-
4	001:01:000	A09 (44)	71	127	Tuning (coarse)	-	100%	-
5	001:01:000	A13 (48)	2149	100	Tuning (coarse)	-	100%	-
6	001:04:480	A01 (36)	56	127	Tuning (coarse)	0	100%	-
7	001:04:480	A13 (48)	261	100	Tuning (coarse)	-	100%	-
8	002:01:000	A01 (36)	87	127	Tuning (coarse)	-3	100%	-
9	002:01:000	A13 (48)	3227	100	Tuning (coarse)	-	100%	-
10	002:02:000	A07 (42)	95	127	Tuning (coarse)	-	100%	-

EVENTS TEMPO INSERT DELETE ► NUDGE

Now the display shows only actual 'note' events. Each line in LIST EDIT represents a single MIDI event in your current track and is arranged in order of time. Let's look at the information held in a typical event – tap on the 'step 2' event in the list so it has a lighter grey background:

#	TIME	PAD/NOTE	LENGTH	VELOCITY	MOD TYPE	VALUE	PROB	RAT
1	001:01:000	A01 (36)	75	127	Tuning (coarse)	-3	100%	-
2	001:01:000	A05 (40)	47	127	Tuning (coarse)	-	100%	-
3	001:01:000	A06 (41)	24	127	Tuning (coarse)	-	100%	-

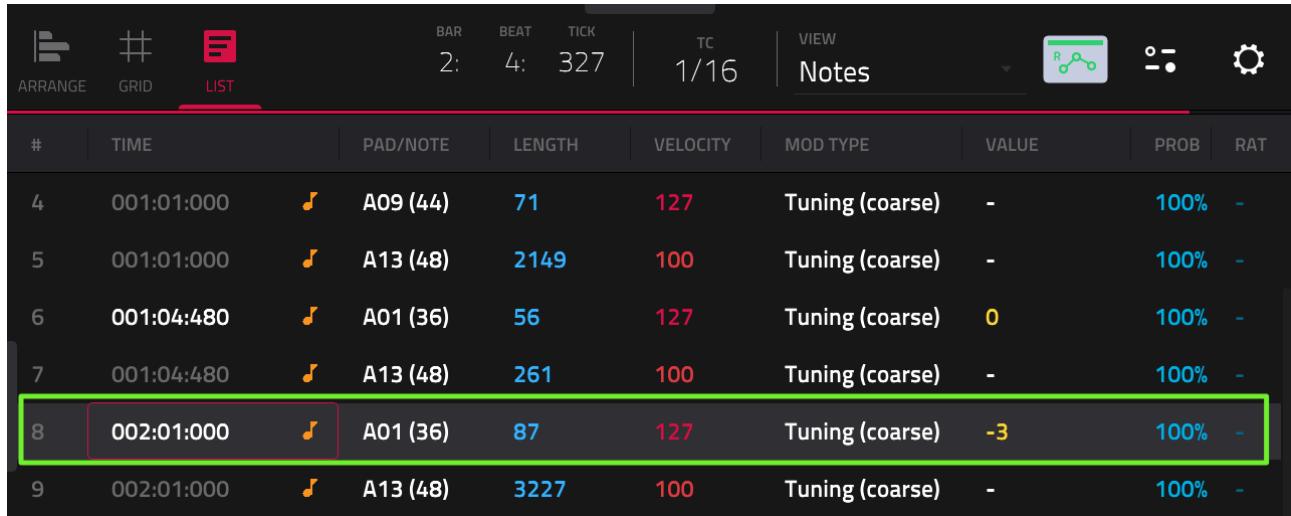
The first few elements represent the standard data we've come to expect from a normal MIDI event; we have the **time** of the event (001:01:000), the **pad** and **MIDI note** triggered by this event (pad A05, MIDI note 40), the **length** (duration) of the event (irrelevant for a one shot pad) and its **velocity** (127).

To preview how this event sounds, tap on it and press the **PLAY** icon in the bottom button bar; you should hear the pad [A05] sample.

Then there's some additional parameters which are not standard MIDI. The ones of relevance here are the **MOD TYPE** and **VALUE** columns. MOD TYPE is short for 'modification type' and allows us to 'modify' the way this specific event plays.

By default, all events will have a 'MOD TYPE' of '**Tuning (coarse)**' but a '**VALUE**' of '-' means it's inactive. Let's look at the **A01** event at **02:01:000**:

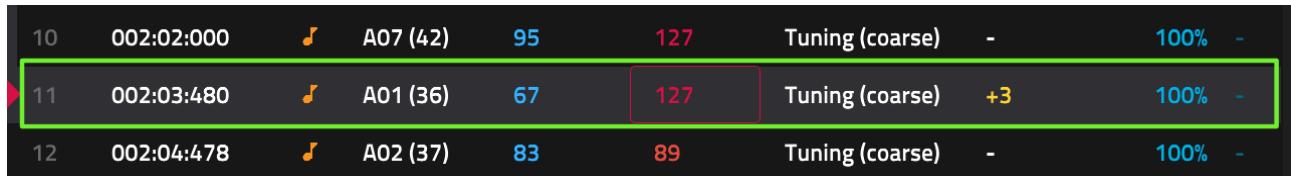
B07: CRAFTING THE INITIAL THEME



#	TIME	PAD/NOTE	LENGTH	VELOCITY	MOD TYPE	VALUE	PROB	RAT
4	001:01:000	♪ A09 (44)	71	127	Tuning (coarse)	-	100%	-
5	001:01:000	♪ A13 (48)	2149	100	Tuning (coarse)	-	100%	-
6	001:04:480	♪ A01 (36)	56	127	Tuning (coarse)	0	100%	-
7	001:04:480	♪ A13 (48)	261	100	Tuning (coarse)	-	100%	-
8	002:01:000	♪ A01 (36)	87	127	Tuning (coarse)	-3	100%	-
9	002:01:000	♪ A13 (48)	3227	100	Tuning (coarse)	-	100%	-

This time the **VALUE** column for these 16 LEVEL 'tuning' events is not '-' but has a specific value. For the 02:01:000 event it is '**-3**' which, when combined with the '**Tuning (coarse)**' MOD TYPE tells us that this event has a 'course tuning modification of -3 semitones' applied.

Hit the **PLAY** icon in the bottom menu bar to hear the tuning modification. Now tap on the pad **[A01]** event at **002:03:480** to select it:



10	002:02:000	♪ A07 (42)	95	127	Tuning (coarse)	-	100%	-
11	002:03:480	♪ A01 (36)	67	127	Tuning (coarse)	+3	100%	-
12	002:04:478	♪ A02 (37)	83	89	Tuning (coarse)	-	100%	-

This has a '**Tuning**' of **+3** which represents a 3 semitone *increase* in pitch. Press the **PLAY** icon to hear this event.

EDITING DATA IN LIST EDIT

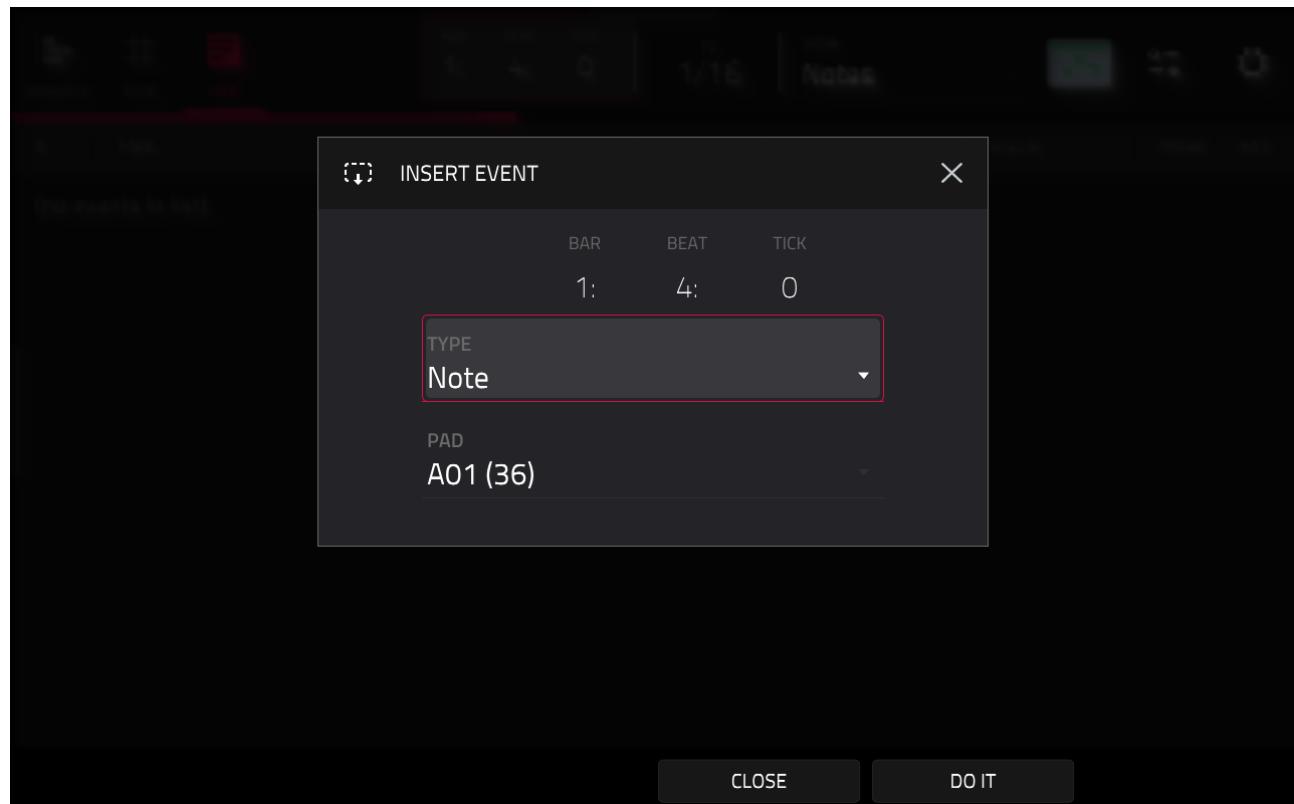
Editing existing data in list edit is simple. For example, locate the **A02** event at **002:04.478** and tap in the **VELOCITY** column and change the velocity to **100** using the (DATA WHEEL), or double tap and enter using the one screen number pad.

11	002:03:480	♪	A01 (36)	67	127	Tuning (coarse)	+3	100%	-
12	002:04:478	♪	A02 (37)	83	100	Tuning (coarse)	-	100%	-
13	002:04:480	♪	A01 (36)	47	127	Tuning (coarse)	0	100%	-

To move this event, hit the **NUDGE** button and tap on the time locator for the event. Now turn the (DATA WHEEL) clockwise to increment the time of the **[A02]** event to **002.04.480** – notice how this also move it to a new 'step' in the list, where it shares the time location with other events:

9	002:01:000	♪	A13 (48)	3227	100	Tuning (coarse)	-	100%	-
10	002:02:000	♪	A07 (42)	95	127	Tuning (coarse)	-	100%	-
11	002:03:480	♪	A01 (36)	67	127	Tuning (coarse)	+3	100%	-
12	002:04:480	♪	A01 (36)	47	127	Tuning (coarse)	0	100%	-
13	002:04:480	♪	A02 (37)	83	100	Tuning (coarse)	-	100%	-
14	002:04:480	♪	A10 (45)	51	116	Tuning (coarse)	-	100%	-
(end of events)									
EVENTS	TEMPO	INSERT	DELETE	▶	NUDGE				

Let's *insert* a 16 LEVEL event into our track. Tap in the time locator and change the playhead to **1: 4: 0**. Now press the **INSERT** button:

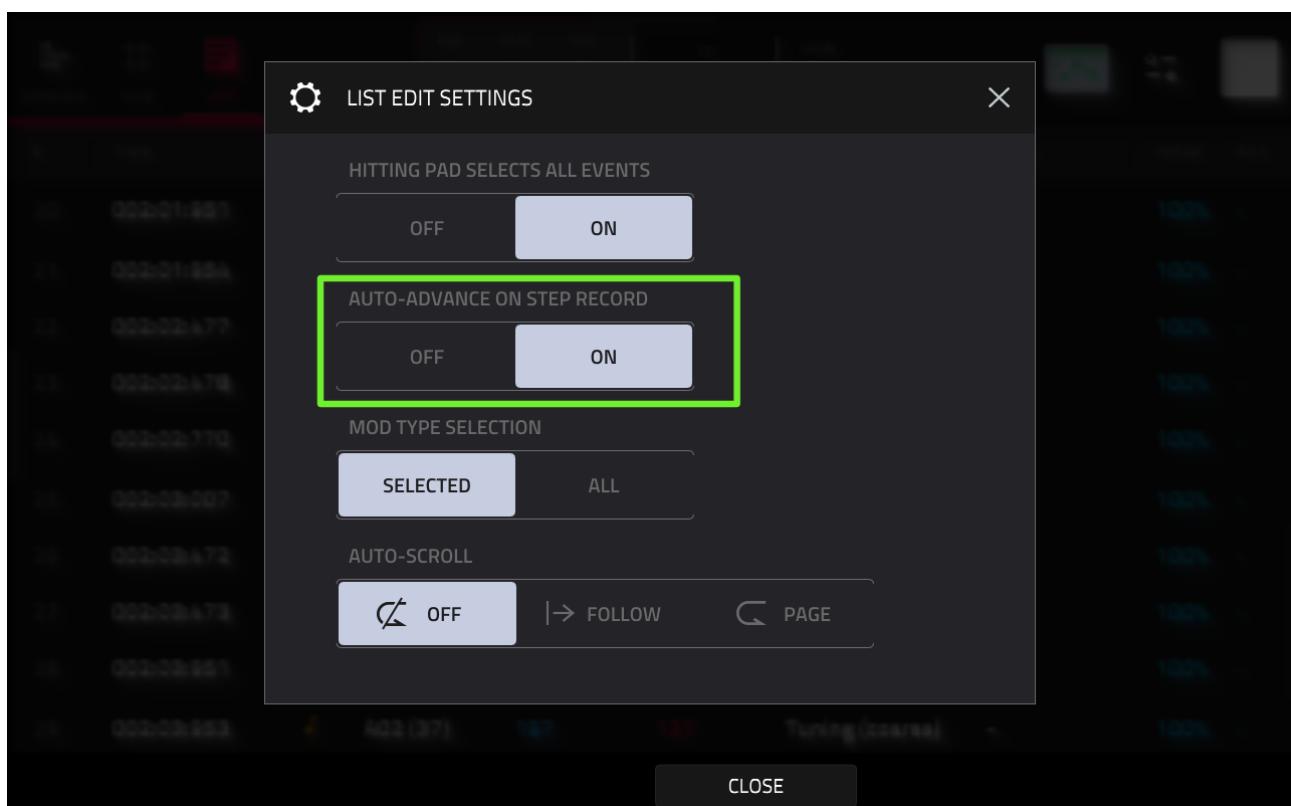


Press **DO IT** to insert an **[A01]** note into the track at **1: 4: 0**:

4	001:01:000		A09 (44)	71	127	Tuning (coarse)	-	100%	-
5	001:01:000		A13 (48)	2149	100	Tuning (coarse)	-	100%	-
6	001:04:000		A01 (36)	239	127	Tuning (coarse)	-	100%	-
7	001:04:480		A01 (36)	56	127	Tuning (coarse)	0	100%	-
8	001:04:480		A13 (48)	261	100	Tuning (coarse)	-	100%	-

Tap in the **VALUE** column and change to **-3** to make this event play at a **-3 semitone** tuning. Hit **[PLAY START]** to hear it in context.

Alternatively, instead of using INSERT, you can press the physical [REC] button and tap a pad to insert it at the current time. The time will then advance to the next T.C. point unless you disable this via the **GEAR settings icon** in the top right of the screen:



ADDING MULTIPLE MODIFIERS

Each event actually supports multiple modulation changes. Tap on '**Tuning (coarse)**' on the **001:04:000** event and turn the **(DATA WHEEL)** until it shows **Env Attack** – set a **VALUE** of **70**:

5	001:01:000		A13 (48)	2149	100	Tuning (coarse)	-	100%	-
6	001:04:000		A01 (36)	239	127	Env Attack	70	100%	-
7	001:04:480		A01 (36)	56	127	Tuning (coarse)	0	100%	-

Hit the **PLAY** button and you can hear that the event remains tuned to -3 but it also has a faded attack. You can add as many different modifiers as you wish – set the **MOD TYPE** to **Env Decay** and change the **VALUE** to **127**:

5	001:01:000		A13 (48)	2149	100	Tuning (coarse)	-	100%	-
6	001:04:000		A01 (36)	239	127	Env Decay	127	100%	-
7	001:04:480		A01 (36)	56	127	Tuning (coarse)	0	100%	-

This adds some more fade to the decay of the event while retaining the previous two changes. As you can see, by using modifiers we are able to change the way a pad sounds without having to make multiple copies of the same pad with different parameters.

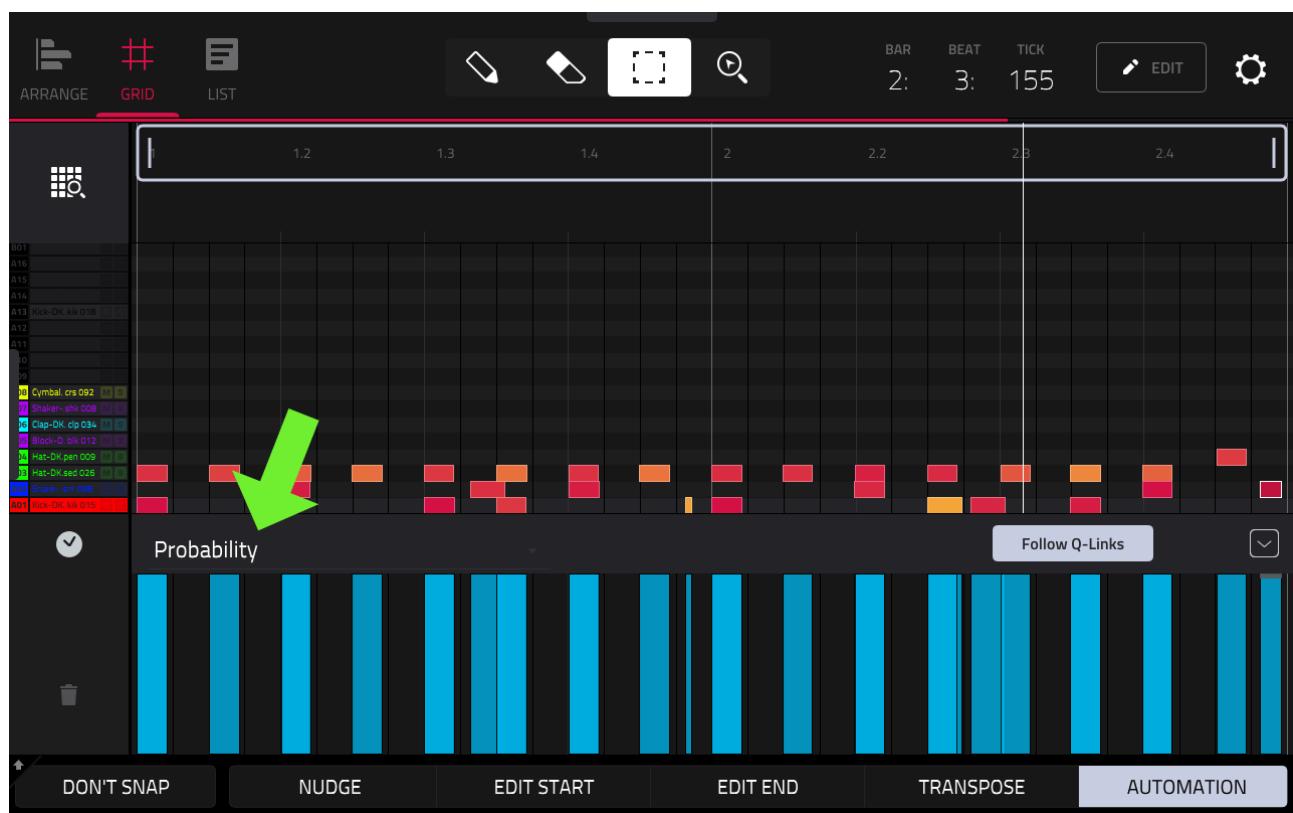
ADDING PROBABILITY

We can also change the **probability** of an event actually occurring. Tap on the **100%** value in the **PROB** column and set this to **50%**.

5	001:01:000		A13 (48)	2149	100	Tuning (coarse)	-	100%	-
6	001:04:000		A01 (36)	239	127	Env Decay	127	50%	-
7	001:04:480		A01 (36)	56	127	Tuning (coarse)	0	100%	-

Hit [PLAY START] and let the sequence loop a few times and you should hear that this event is only triggered occasionally. Set this to any percentage that you wish.

Hold down [MAIN] and select **track 1 (Drums)**. Head back to **GRID VIEW** and expand the **automation lane**. Tap on **Velocity** and change this to **Probability**:



You can now adjust the probability of any event using the blue bars in a similar way to adjusting velocity. Select the snare event at **001:03:305** with the selection tool and take the probability down to **65%**:



Probability lets us add some randomly generated variation to even a short sequence like this. Select **sequence 3, 16 Level Probability** for my version of everything so far.

So far our bass line has just consisted of a repeated bass note. As we've seen with other instrumental pads, we can use 16 LEVELS or even tuned pad copies to allow us to create something more melodic and musical.

However there is a third, significantly more flexible method of creating playable instruments which we'll discover in the next chapter.

B08: BUILDING A SIMPLE KEYGROUP INSTRUMENT

We've already seen how individual pads can be used for melodic playing by using the pad tuning and 16 LEVEL methods, however, the most robust and flexible method of creating an instrument is to use 'keygroups'.

TOPICS COVERED IN THIS CHAPTER

- ✓ What are keygroup instruments?
- ✓ Converting pads into keygroups
- ✓ Sample pitch and key tracking
- ✓ Recording a bass line
- ✓ Adding variation

WHAT IS A KEYGROUP INSTRUMENT?

A keygroup instrument is a sample-based melodic instrument which can be built using any sample (or multiple samples). The sounds can be spread across the entire note range of your MPC and once loaded to a track, functions in a similar way to a plugin instrument, supporting

features such as pad perform, the arpeggiator, pitch bends and mod wheel expression.

From the **B08** folder, load the **B08 Keygroup Instrument.xpj** project file, which contains a copy of our 'song in progress'.

In [**MAIN**], select track 2 (**Vinyl Cuts**), hit pad [**A13**] and go to **TRACK EDIT** > **SAMPLES**:



We previously configured pad [A13] to play a single bass note in the key of 'A' which was set as a 'note on' pad allowing us to control the played note length. Let's take this note and quickly convert it to a playable keygroup instrument – tap on the '**Pad to Keygroup**' icon in the toolbar – the screen will change to the following:

B08: BUILDING A SIMPLE KEYGROUP INSTRUMENT

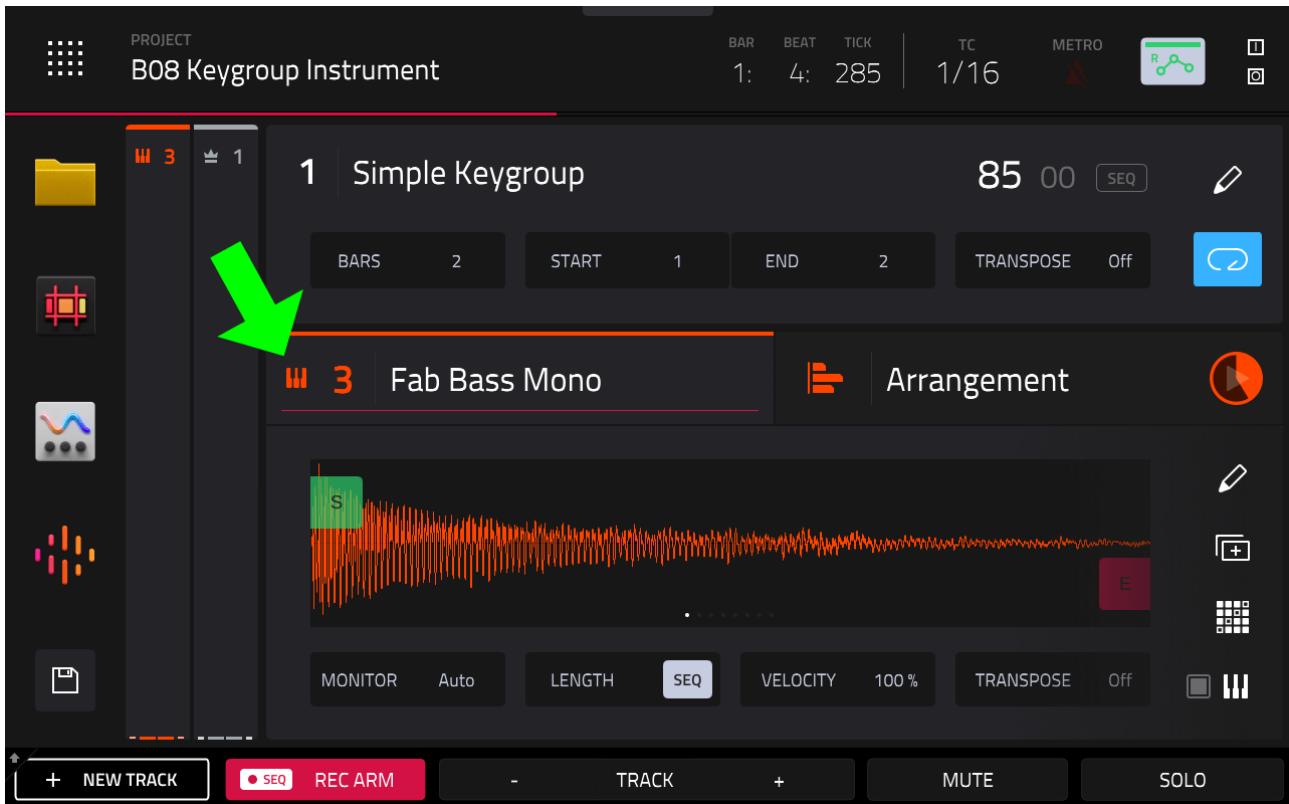


The MPC has now created a new **KEYGROUP** type track which chromatically tunes and spreads pad [A13] across the entire 128 note range of the MPC.

Start playing some pads (or your keys if you have an MPC key model) and you'll discover the bass sample can now be played like a normal melodic instrument (try [**BANK B**] for a usable bass note range).

Hit [**MAIN**] to view the new track 3:

B08: BUILDING A SIMPLE KEYGROUP INSTRUMENT



As you can see the keyboard icon shows this is a keygroup type track, and it's been automatically named after our bass sample (Fab Bass Mono). Tap and hold on the track name and use the keyboard icon to rename this track '**Bass**'.

Now double tap the waveform to take us back to **TRACK EDIT** and select the **GLOBAL** screen.

B08: BUILDING A SIMPLE KEYGROUP INSTRUMENT



You may have noticed that TRACK EDIT for a KEYGROUP track has some differences compared to a DRUM track. In the top toolbar you'll see **NUMBER OF KG: 1**; this indicates that there is one single 'keygroup' in this instrument. **KEYGROUP: 1** tells us that keygroup number 1 is currently selected.

So what is a 'keygroup'? In a keygroup track we no longer assign samples to 'pads', instead we assign our samples to 'keygroups'. Each keygroup will spread the assigned samples across a specific **NOTE RANGE**, which by default will always cover the entire 128 note range in our MPC of notes **C-2** to **G8**, as highlighted in the green box above.

Also notice that the **SAMPLE PLAY** setting for our keygroup has been carried over from pad A13 in our drum track and is set to **NOTE ON** to ensure each note only plays for as long as we hold down the pad.



A 'single keygroup' instrument is the simplest type of keygroup track we can make, but this is perfect to help us understand the fundamentals of how keygroup instruments work. In Section C we'll learn how to utilise multiple keygroups to create instruments that sound far more realistic.

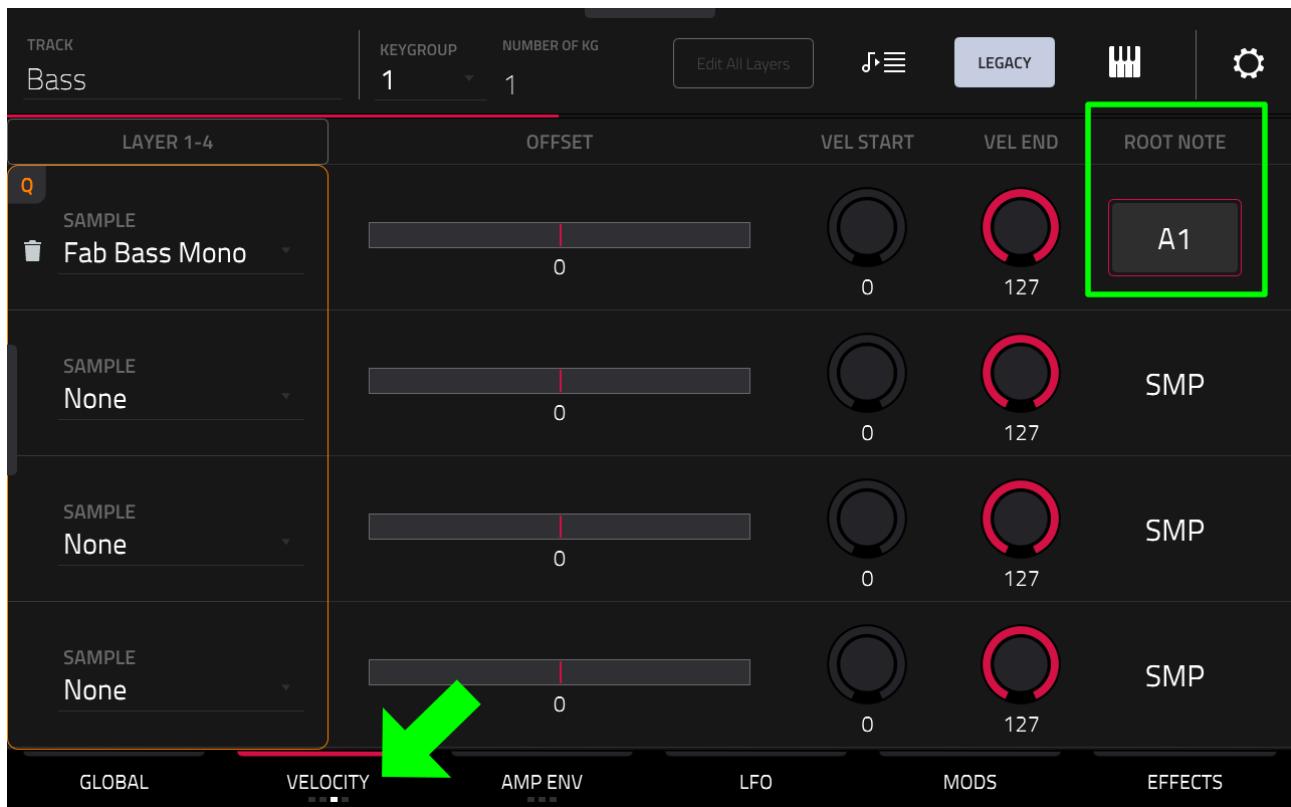
SETTING THE CORRECT SAMPLE KEY

It's important to ensure that our keygroup instrument is configured to play the correct musical notes on each key or pad, so for example, when you play a 'G' note on your pads or keys, you 'hear' an *actual* G note.

To do this, we have to tell the MPC the key ('pitch') of the sample used in each keygroup – with this information it can successfully 'key track' the sample; **keytracking** is the process of tuning a sample across the pads to create a playable melodic instrument,

Remember, before converting pad [A13] to a keygroup we observed that the MPC had detected the bass sample was in the key of '**A**'.

Unfortunately the MPC doesn't use this information automatically when building the keygroup instrument, so we have to add it manually. Go to **TRACK EDIT > SAMPLES** and press the **SAMPLES** button another two times until it shows **VELOCITY**:



Here we tell the MPC the **key** of each sample used in the current keygroup; we know it is 'A' but we also have to decide which octave this A was played at originally. For a bass sound we would normally initially try a lower octave such as 0 or 1 - tap on **SMP** on **LAYER 1** and set the **ROOT NOTE** as **A1**. With the key of the layer correctly set, the MPC can now 'key track' the sample across the pads.



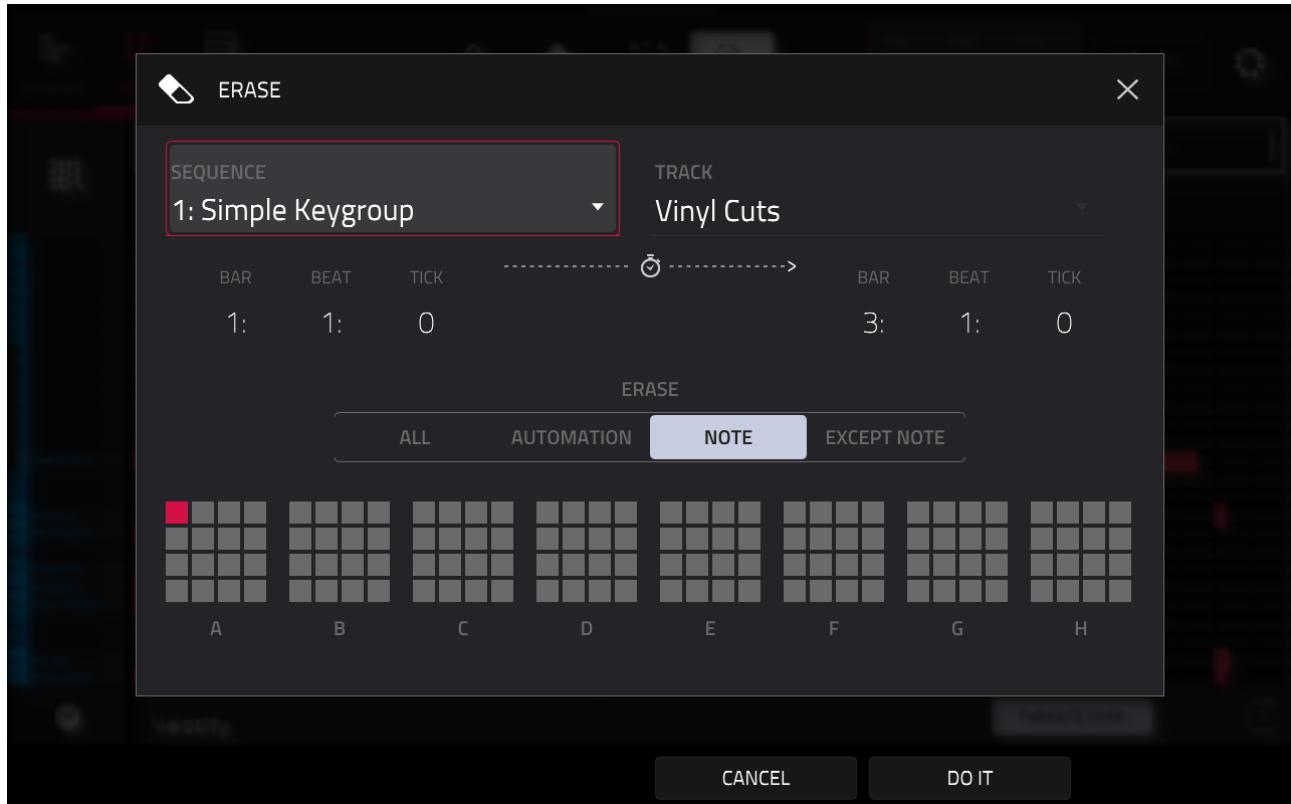
Setting the 'correct' octave is not as important as setting the correct key (or 'pitch'); we can easily shift 'octave' when performing, but things can quickly get really complicated if each note in an instrument is not playing at the 'expected' musical pitch.

RECORDING A BASS LINE WITH PAD PERFORM

Our initial bass line consisted of just a single repeated bass note, but now that we have a playable instrument we can lay down a more melodic bass line.

First, let's remove the existing bass line that was recorded on track 2, and there are a number of ways to do this. First, hold down [**MAIN**] and select **track 2**.

One way to remove this existing bass line is to literally remove all the pad A13 MIDI events from track 2. This can be achieved from any screen by pressing the [**ERASE**] button, and on the resulting **ERASE** dialog box, choosing **NOTE**:

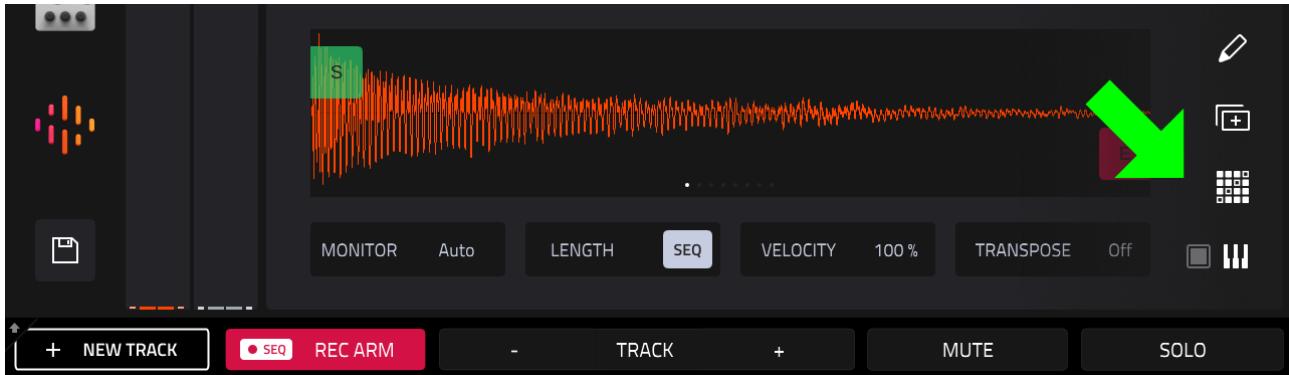


Hit pad **[A13]** so it is selected and hit **DO IT** to erase all pad A13 events on this track only.

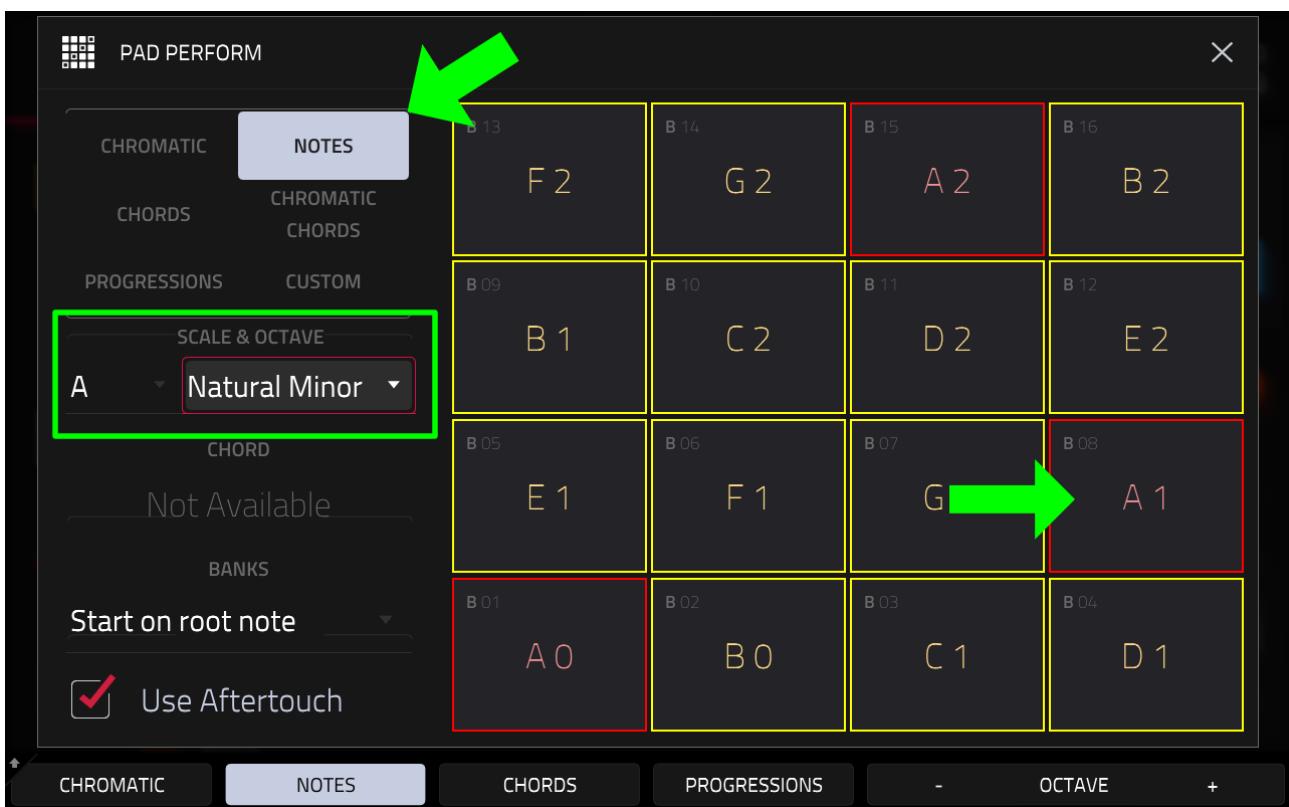
Alternatively in **GRID VIEW** or **LIST EDIT**, hit pad **[A13]** to select all pad A13 events (if the A13 events do not get selected, just hit a different pad first, then hit **[A13]** again). With all A13 events selected, hold down **[SHIFT]** and press **DELETE**.

Select **track 3** again. Just like a plugin instrument, a keygroup instrument can be played with the pads using **PAD PERFORM**. Double tap the **[16 LEVEL]** button, or hit the **PADS** icon in **MAIN**:

B08: BUILDING A SIMPLE KEYGROUP INSTRUMENT



Select [BANK A] and ensure **NOTES** is selected. Now, we know our track is in the key of **A**, and some of the samples are actually showing a **KEY** of **Am** (A minor) so try a **SCALE** of **A Natural Minor**.

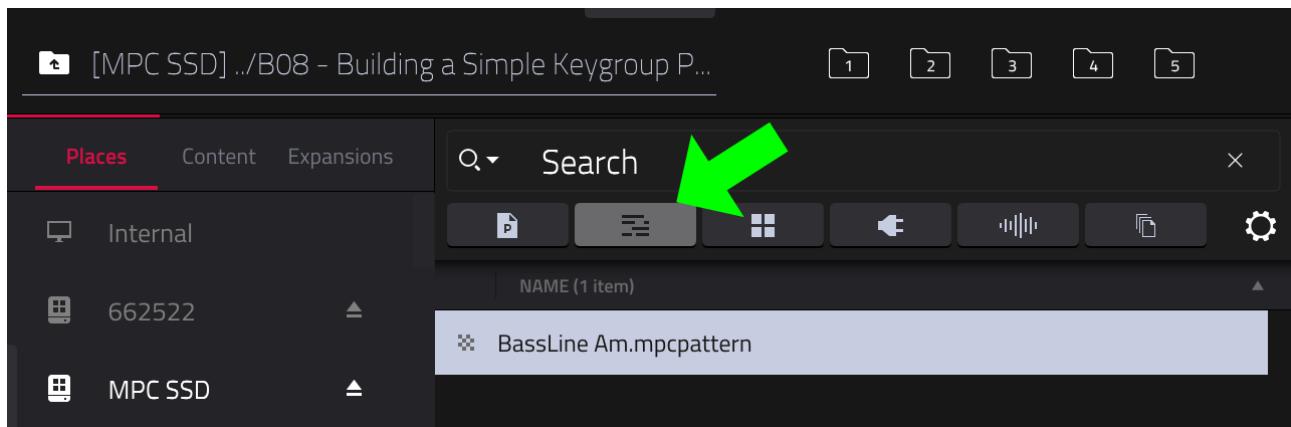


Use the **OCTAVE +/-** buttons to set the key **A1** to be on pad **[A08]** as shown above. Hit **[PLAY START]**, experiment with the pads and when you are ready, record your bass line in the key of A minor.

Alternatively if you have an MPC Key model, or have a MIDI controller connected to your MPC, you can play your bass line using the keys.

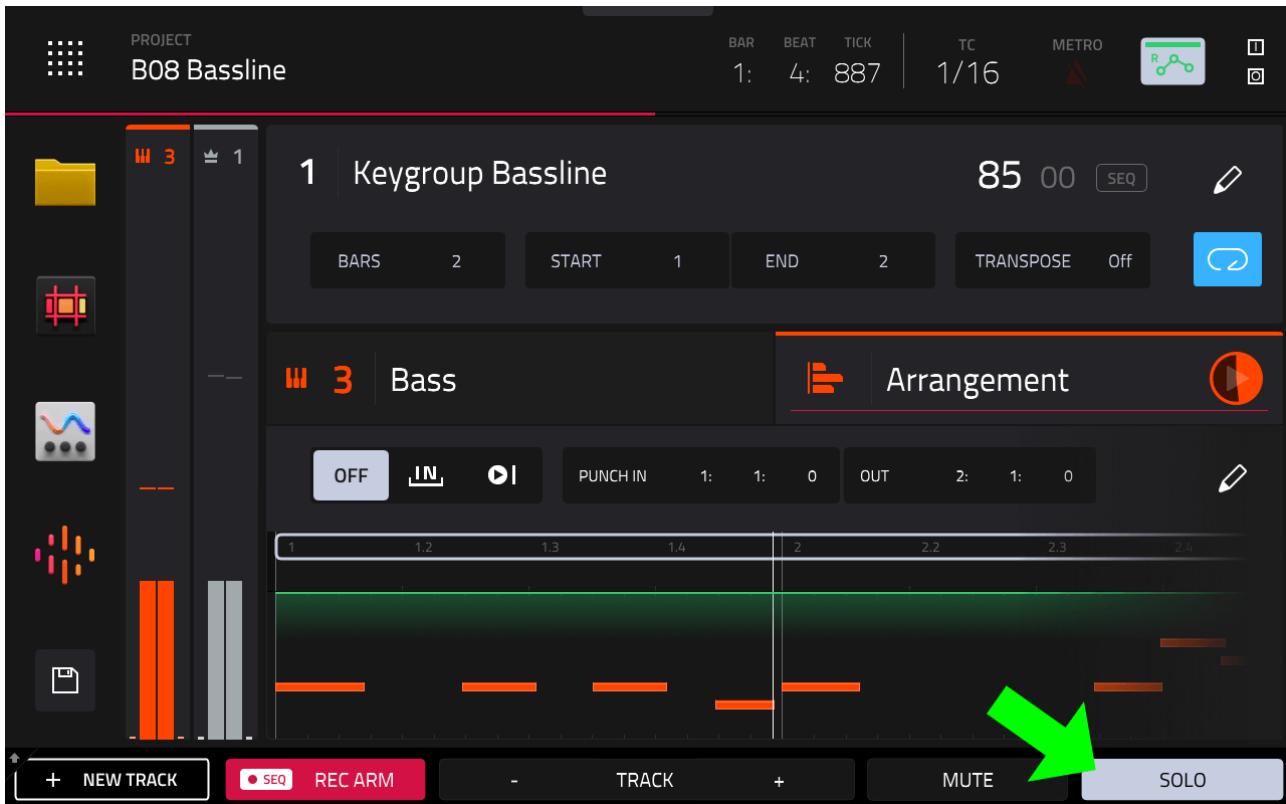
If you wish, save any work you've created during this tutorial so far to the '**Projects**' folder on your MPC disk (**MENU > SAVE > Project As**). With your work saved, let's load up my own bass performance.

Go to the **MPC Bible 3 Project Files** expansion and in the **B08** folder, locate the pattern file **BassLine Am.mpcpattern**. We met pattern files back in chapter **A05**, it's a special type of MIDI file that only loads inside MPCs; it's designed to load a pre-configured MIDI performance. Remember, to view MIDI files, make sure you've selected the '**MIDI**' filter:



Select and hit **LOAD** to load this MIDI pattern to the current track (3).

B08: BUILDING A SIMPLE KEYGROUP INSTRUMENT

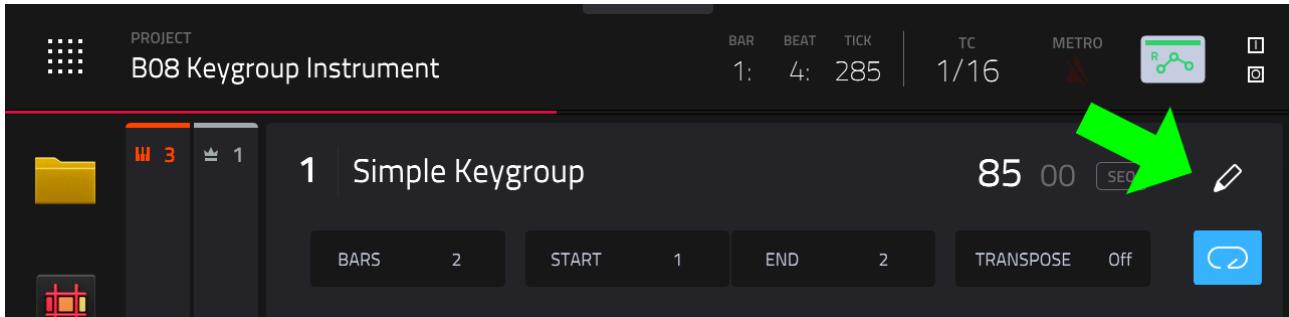


In [**MAIN**], press [**PLAY START**] and hit the **SOLO** button in the bottom menu bar to hear the bass line without any other tracks playing.

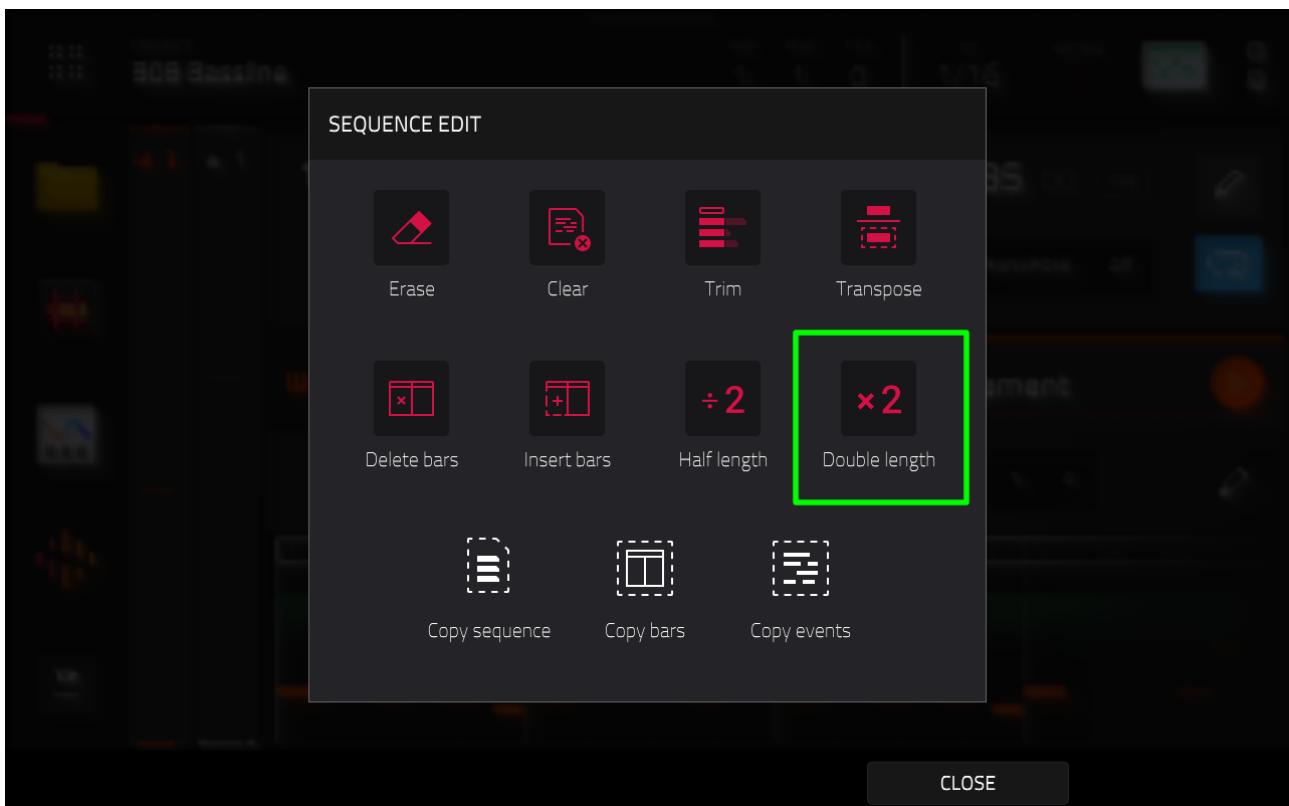
EXTENDING SEQUENCE LENGTH

Let's add some variety to the bass line, but first it's time to start thinking about extending the length of the sequence. The easiest way to do this is to hit the **EDIT** pencil icon in **MAIN**:

B08: BUILDING A SIMPLE KEYGROUP INSTRUMENT

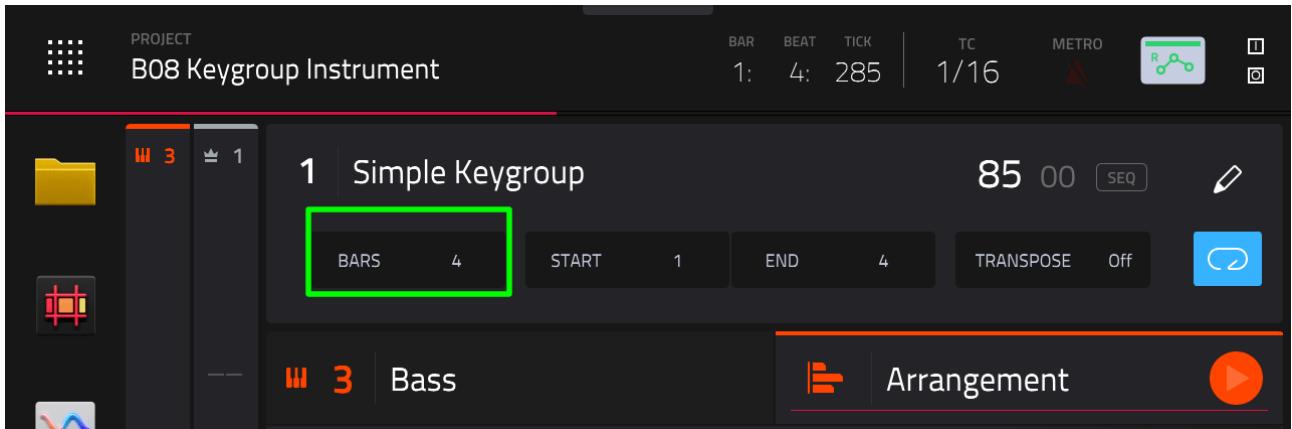


Select '**Double length**':



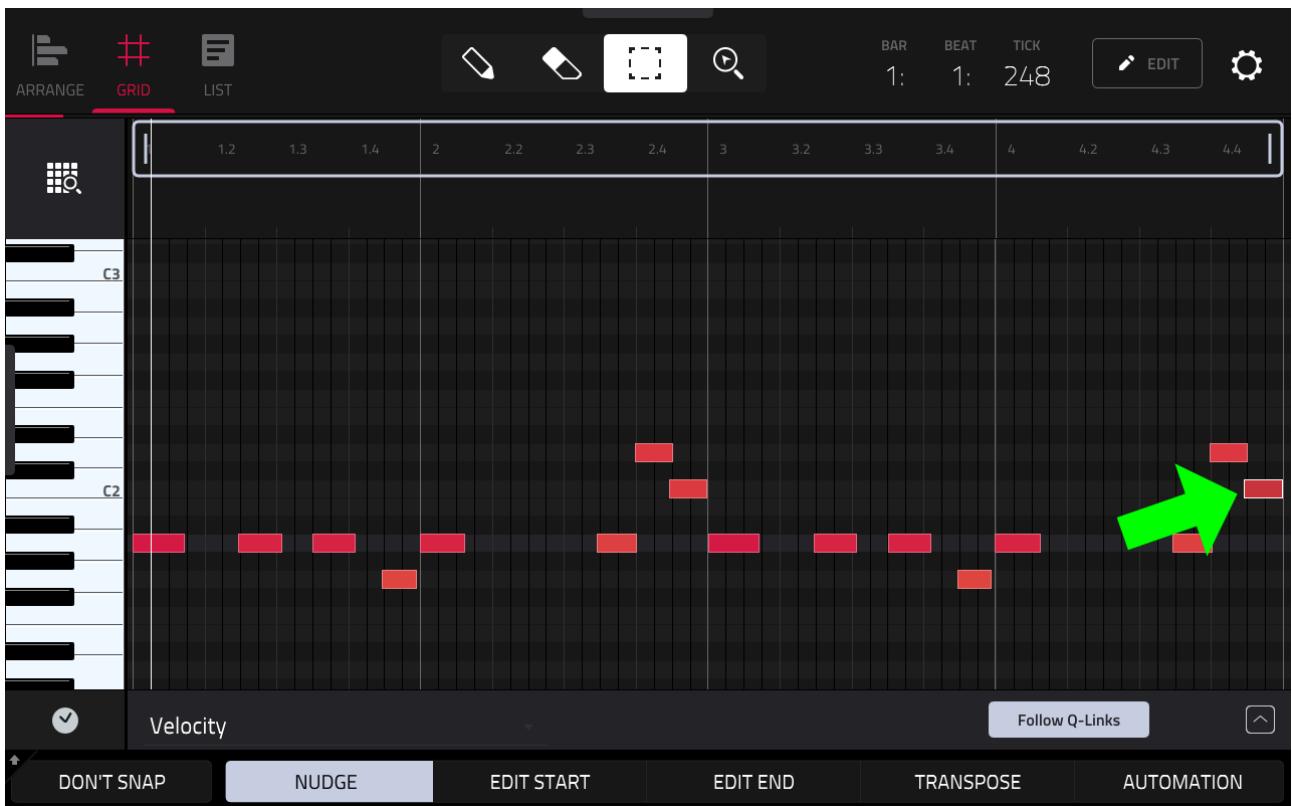
As you can see, the sequence is now 4 bars long, but the 'Double Length' function doesn't just double the number of bars in your sequence, it also duplicates all the existing events across all tracks. Hit [**PLAY START**] and you'll hear we now have a fully populated 4 bar sequence.

B08: BUILDING A SIMPLE KEYGROUP INSTRUMENT



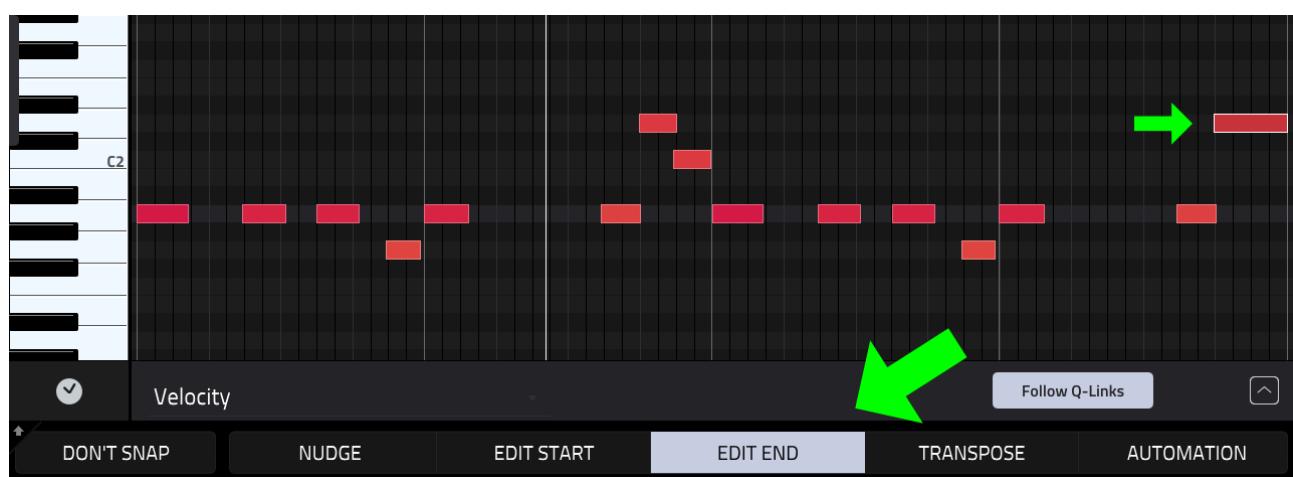
ADDING VARIATION VIA GRID VIEW

Go to **GRID VIEW** for **track 3**:

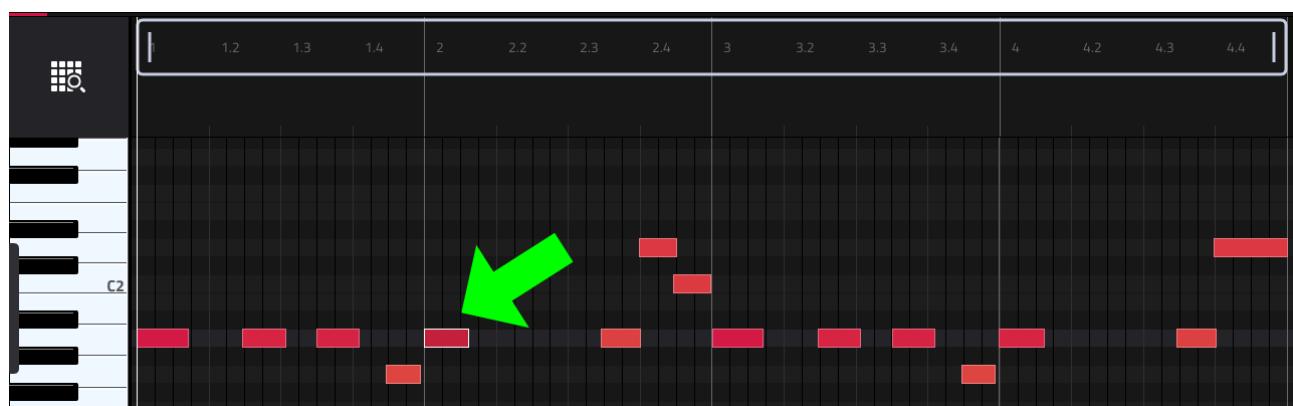


Let's add a subtle variation at the end of bar 4. First delete the very last event, either using the **eraser tool**, or by selecting the event and using **[SHIFT] > DELETE**.

Now select the last event at **04: 04: 000** and use **EDIT END** to extend its length to the end of the bar:

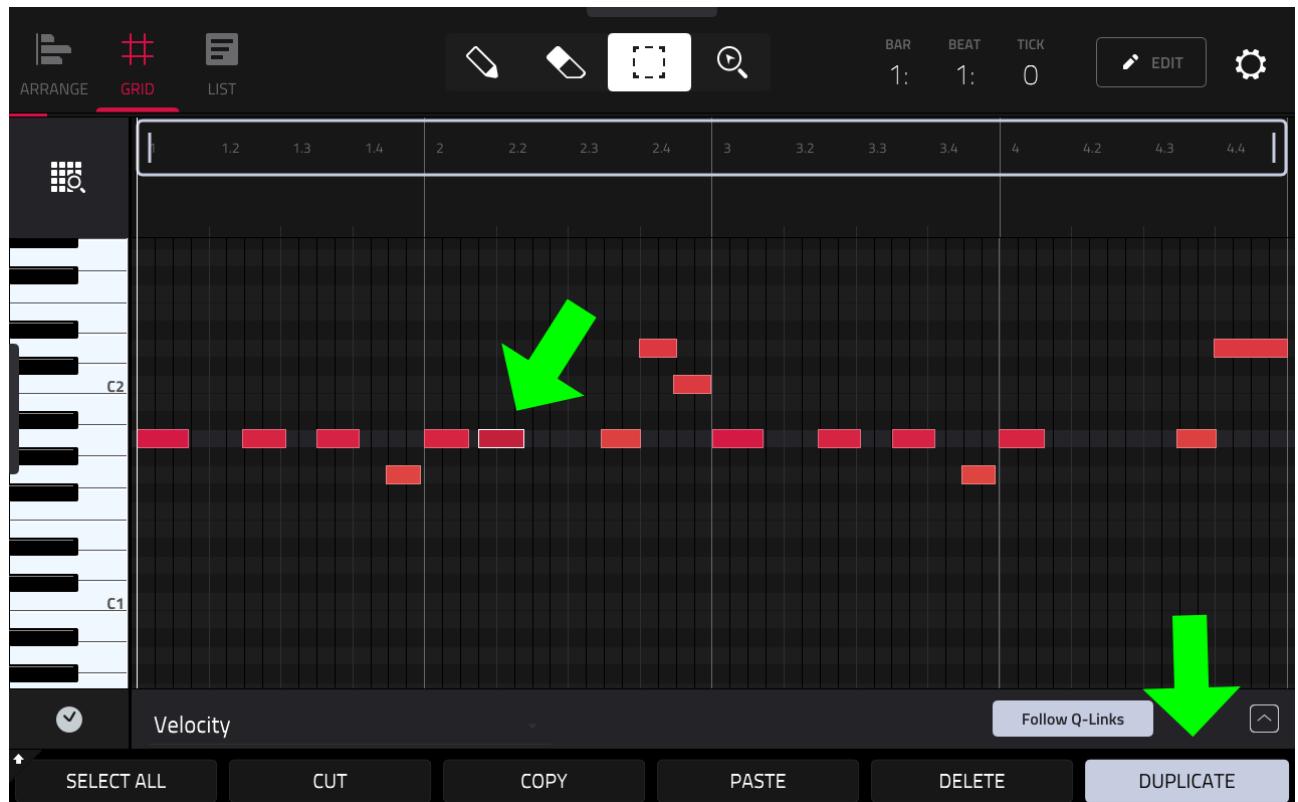


Now let's add some 'probability notes'. To add notes in GRID VIEW we can just **[OVERDUB]** them in, or add them using the pencil tool. But we can also *duplicate* existing notes. Select the existing bass event at **2: 01: 000**:

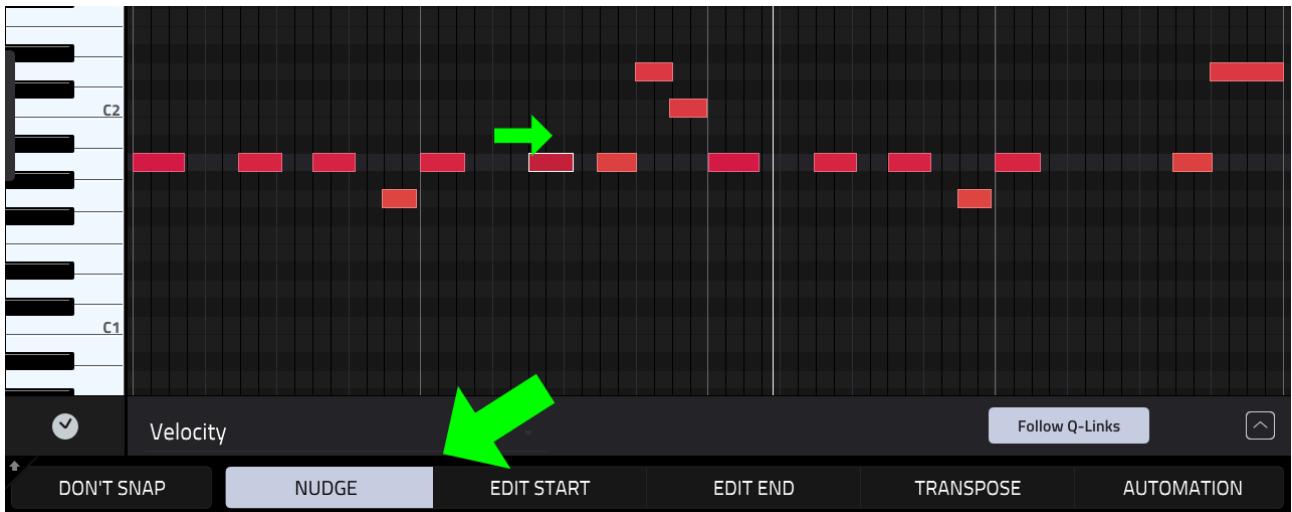


B08: BUILDING A SIMPLE KEYGROUP INSTRUMENT

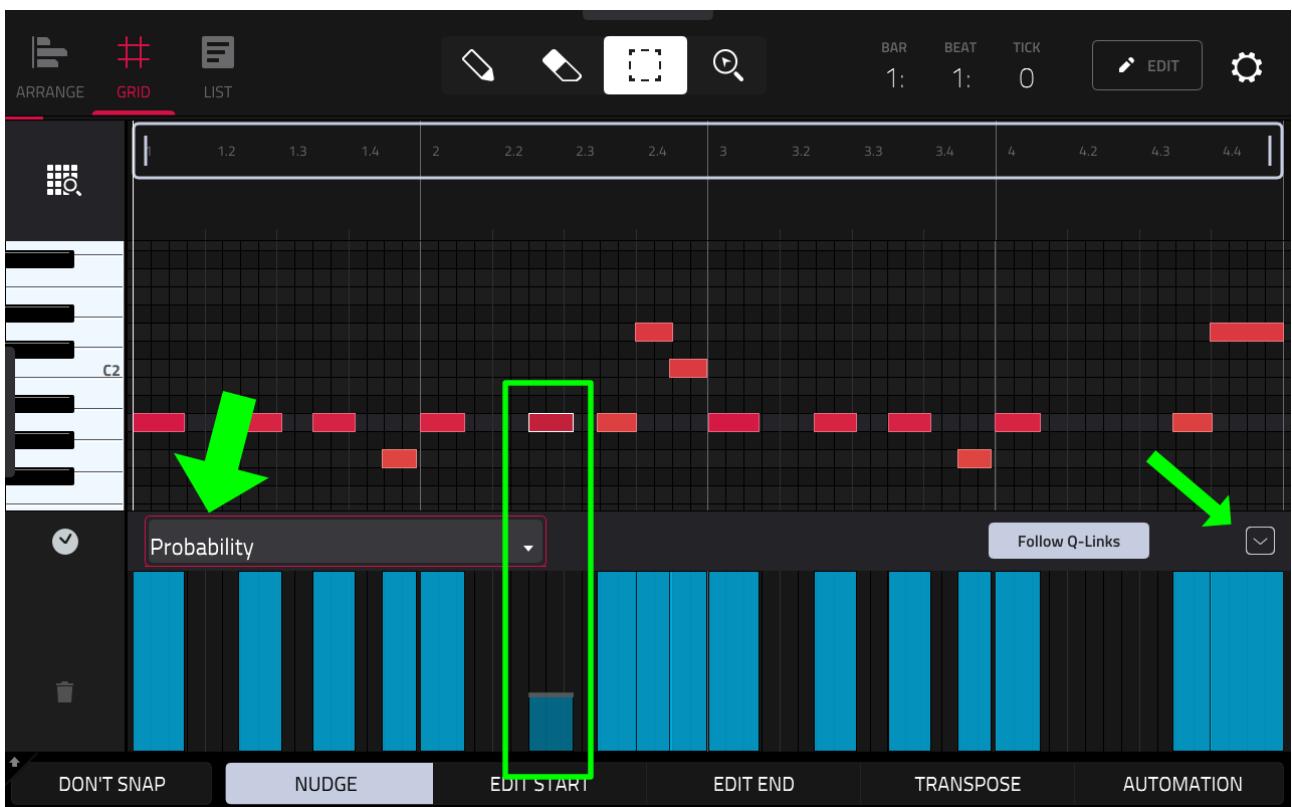
Hold down **[SHIFT]** and select **DUPLICATE**:



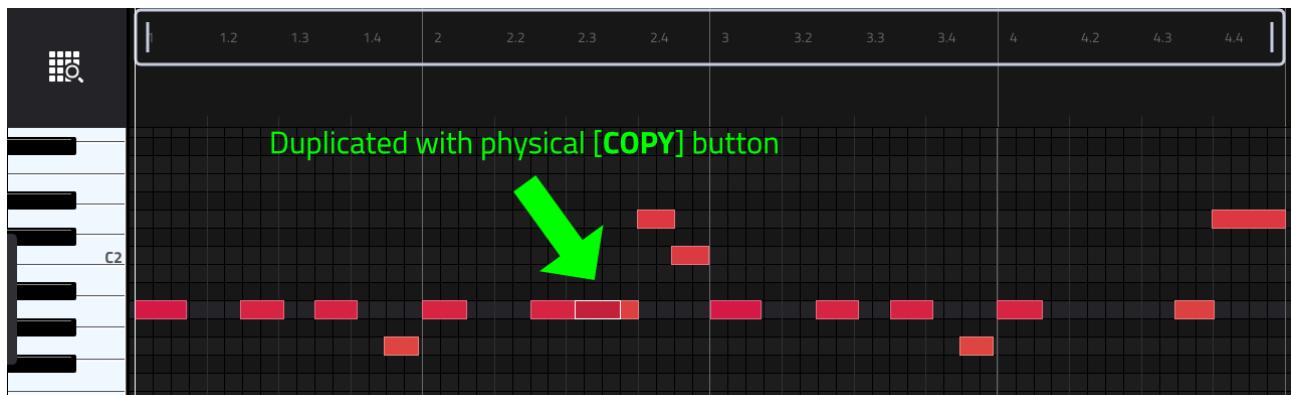
This creates an identical copy of the selected note. Now use the **NUDGE** to move the event to **02: 02: 480**:



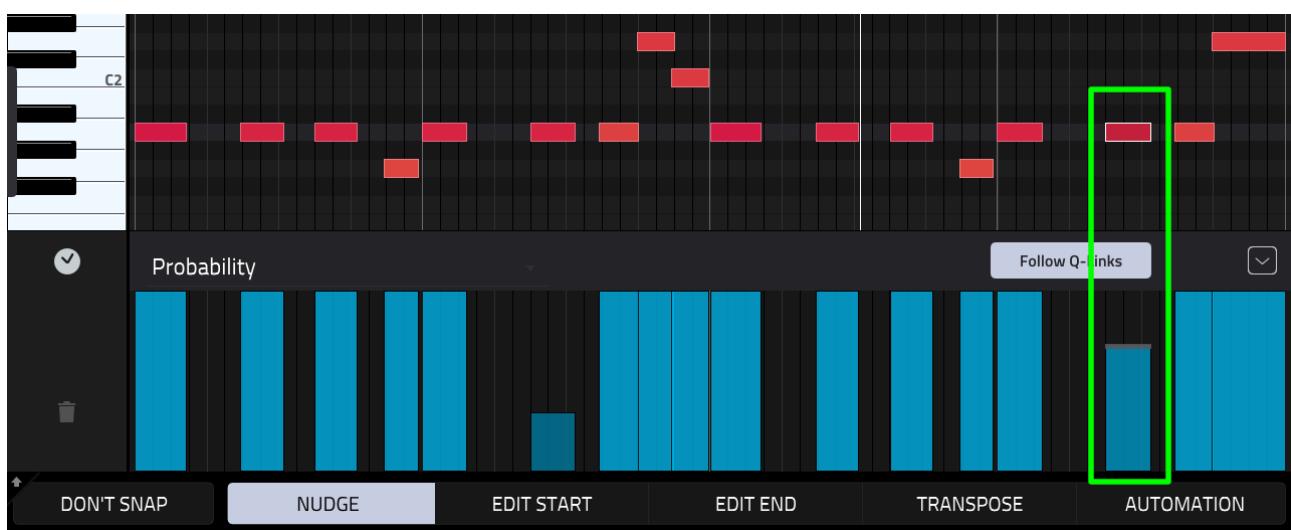
Now expand the **velocity/automation lane** and select **Probability** events
- set the probability for this copied event to around **25%**.



While in **GRID VIEW** you can also duplicate events with the physical **[COPY]** button. With the existing copied event still selected, hit **[COPY]** and a duplicate copy is instantly created:



Use **NUDGE** and the (DATA WHEEL) to move this to **04: 02: 480** – if the 'Probability' select box is still 'selected', tap on the **AUTOMATION** button and then select **NUDGE** again to set the data wheel focus back to the event itself. Set a probability of around **70%**:



Finally, head back to **[MAIN]** and use the **XL CHANNEL STRIPS** to adjust the output level of the bass track so it is a little more balanced. You can load up my version, **B08 Bassline.xpj**.

B09: USING AUDIO TRACKS

In this tutorial we'll look at how we can insert longer audio samples into our beat, which could be a recorded vocal, an acoustic instrument or any other long audio performance. We'll achieve this using an audio track.

TOPICS COVERED IN THIS CHAPTER

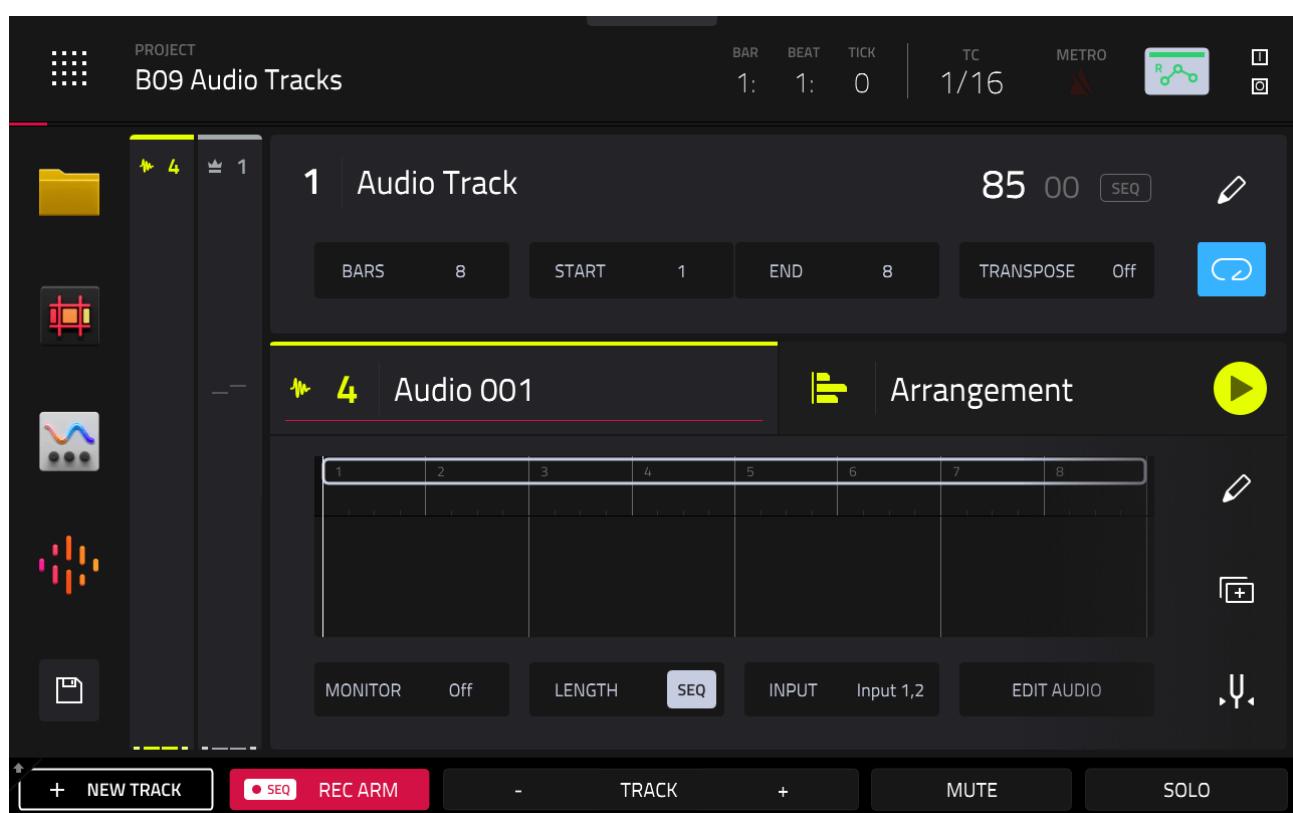
- ✓ What are audio tracks?
- ✓ Editing audio tracks
- ✓ Warping audio to 'stretch' regions
- ✓ Using the loop region
- ✓ Adding 'air' and fades
- ✓ **Workshop:** Disk streaming

So far we have what I often refer to as my initial theme or hook, and it's just four bars long, and it's at this point where I will start 'fleshing out' this hook into a longer song. In Section C we're going to look at how to achieve this by chaining together many small sequences in 'Song Mode', but in this section I'm going to focus on another popular song building workflow, sometimes referred to as a '**linear**' or '**single sequence**' workflow.

WHAT IS AN AUDIO TRACK?

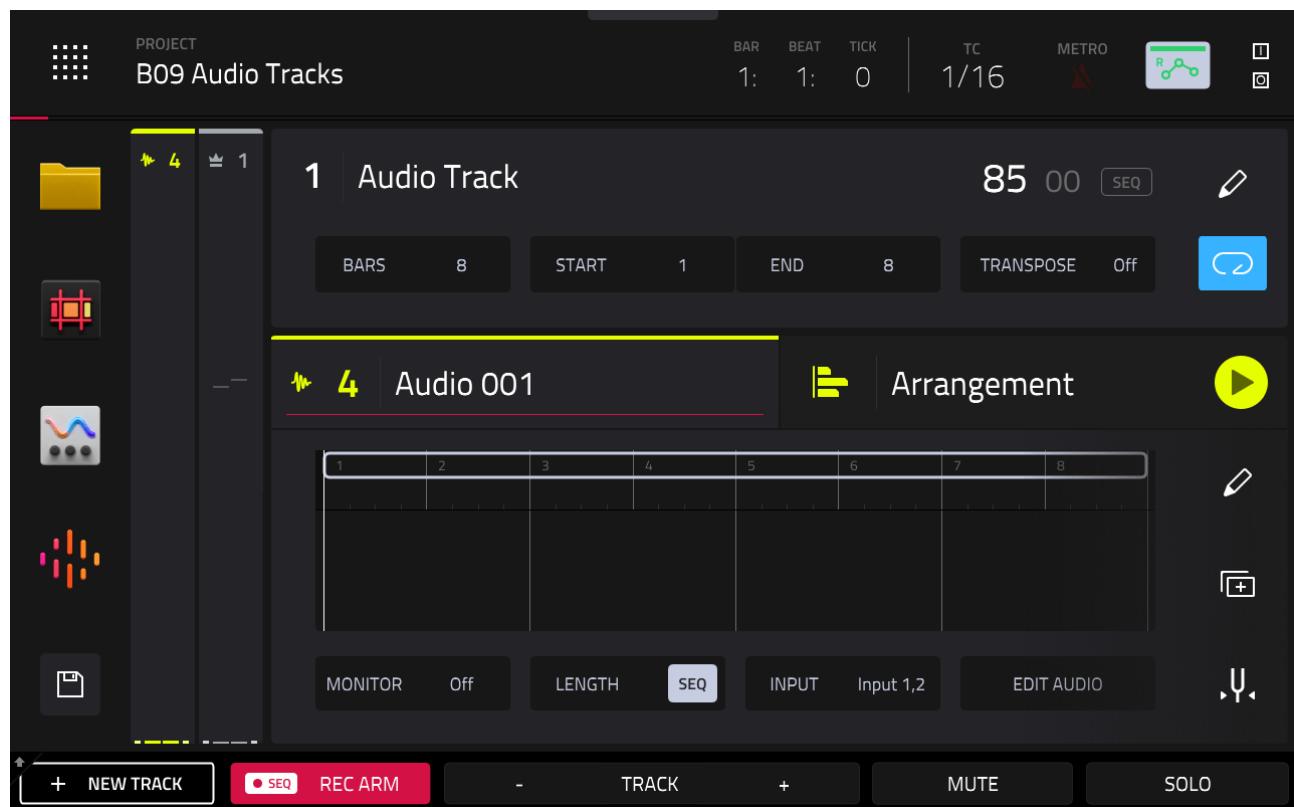
From the **B09** folder, load the project **B09 Audio Tracks.xpj**. In chapter B08 we used the **Double Sequence** function to double the length of our basic 'theme' from 2 to 4 bars – let's repeat this procedure again to extend our theme sequence to 8 bars.

Go to [**MAIN**] and tap on the **pencil icon** to bring up the **Sequence Edit** dialog. Hit the **x2 'Double Length'** button. In [**MAIN**] you can now see this is an 8 bar sequence:



We'll continue to use the 'Double Length' function to further extend the length of our beat, but first I want to look at adding a longer audio sample to this sequence, and the best way to do this is by using an **audio track**.

Go to [**MAIN**] and hit the **+ NEW TRACK** button – select '**Audio**':

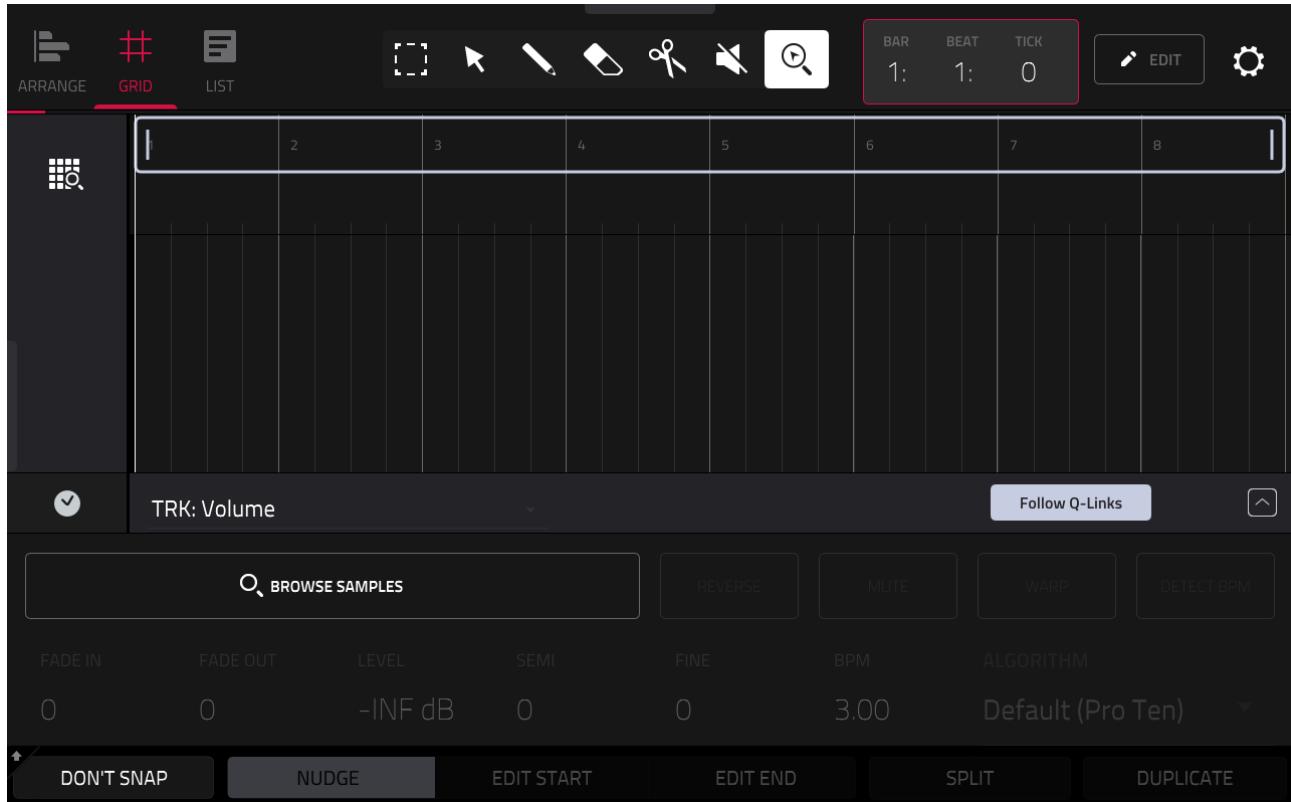


Rename the track '**Speech**'. So far in the course we've only been using tracks designed for recording MIDI events which in turn trigger the sounds from drum kits, sampled instruments or plugins. An **audio track** on the other hand does not use MIDI to trigger its sounds, the audio is embedded directly into the track itself. It's often used to capture and playback live performances (e.g vocals, acoustic instruments etc), but ultimately can be used to play back any type, and any number, of pre-recorded audio files.

A new audio track is completely blank. To add some audio we can either record the audio directly to the track in real time or we can import any existing sample from the project's SAMPLE POOL.

Go to [**BROWSER**] > **Expansions** > **MPC Bible 3 Project Files** > **B09** and preview the sample '**Address to the Women of America**' (it's a snippet from public domain speech I downloaded from the Internet Archive). Tap **LOAD** or **LOAD TO POOL** (when you have an audio track selected it doesn't matter which one you choose as both methods result in loading the sample to the SAMPLE POOL).

From **MAIN**, double tap the **Audio tab** or the **Arrangement tab**, this will take you to **GRID VIEW** which looks a bit different compared to a DRUM or KEYGROUP track.

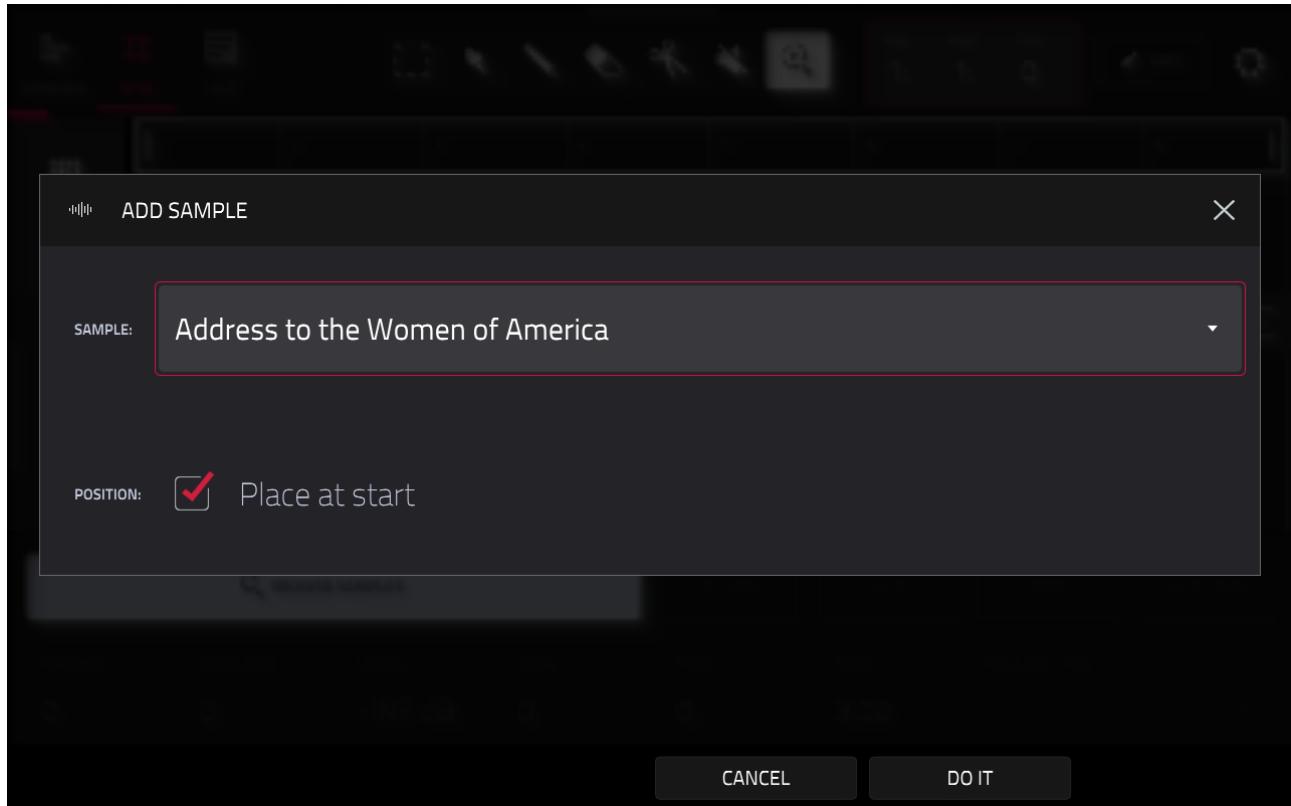


In fact when editing an audio track in 'grid view' it's more common to refer to this screen as the **Edit Audio** screen.

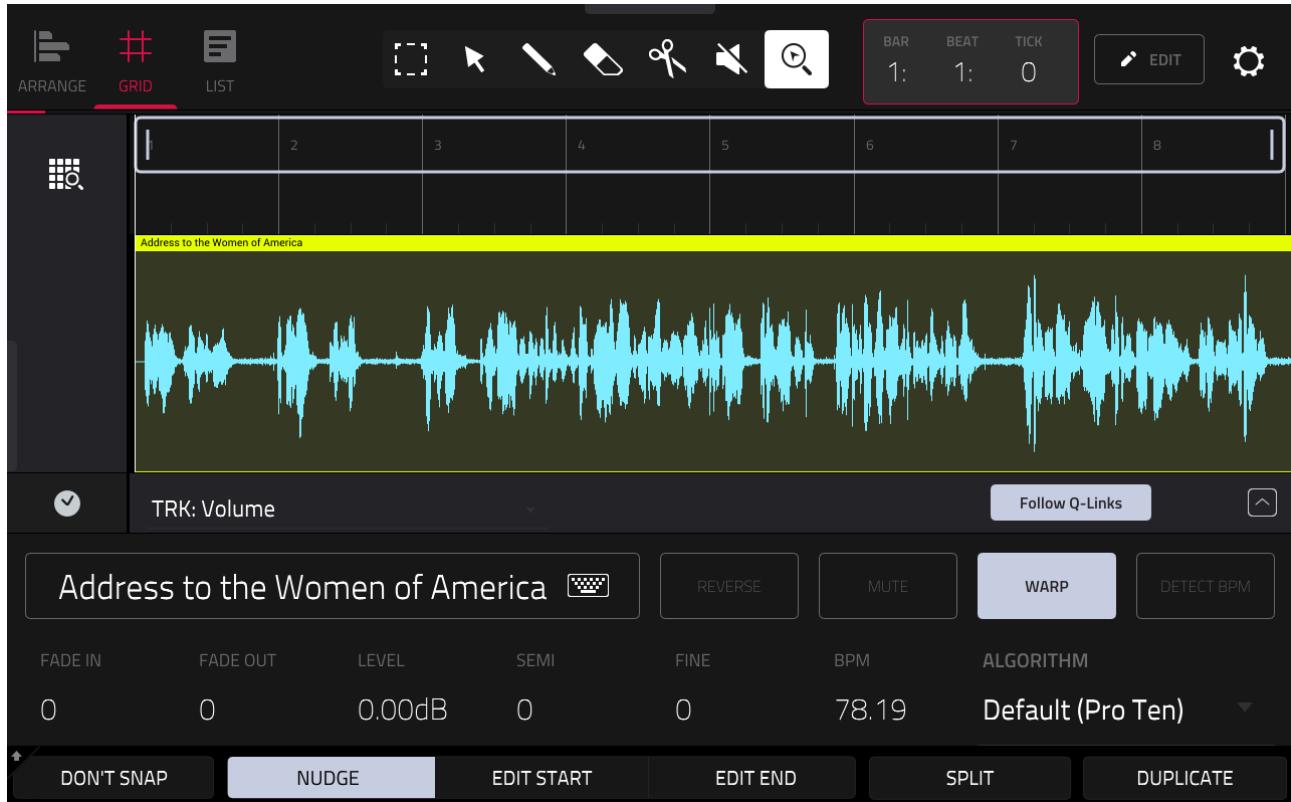


If the screen you see looks a little different, make sure you've collapsed the 'velocity/automation' lane, as it may still be open from our previous work on probability events in GRID VIEW.

Currently there is no audio within this audio track; to import our recently loaded audio sample, hit **BROWSE SAMPLES**:



Select the '**Address to the Women of America**' sample and leave **POSITION: Place at Start** checked. Hit **DO IT**.



The sample is now loaded into the beginning of the audio track at sequence time 1:1:0. Hit [**PLAY START**] to begin playback. Hit [**STOP**] to stop playback at any time and hit [**PLAY**] to continue play back from the current playhead position.

The speech sounds like a promising addition to our sequence, but there's definitely some work required to make this 'fit' into our beat, but that's the fun of working with audio tracks!

EDITING AUDIO REGIONS

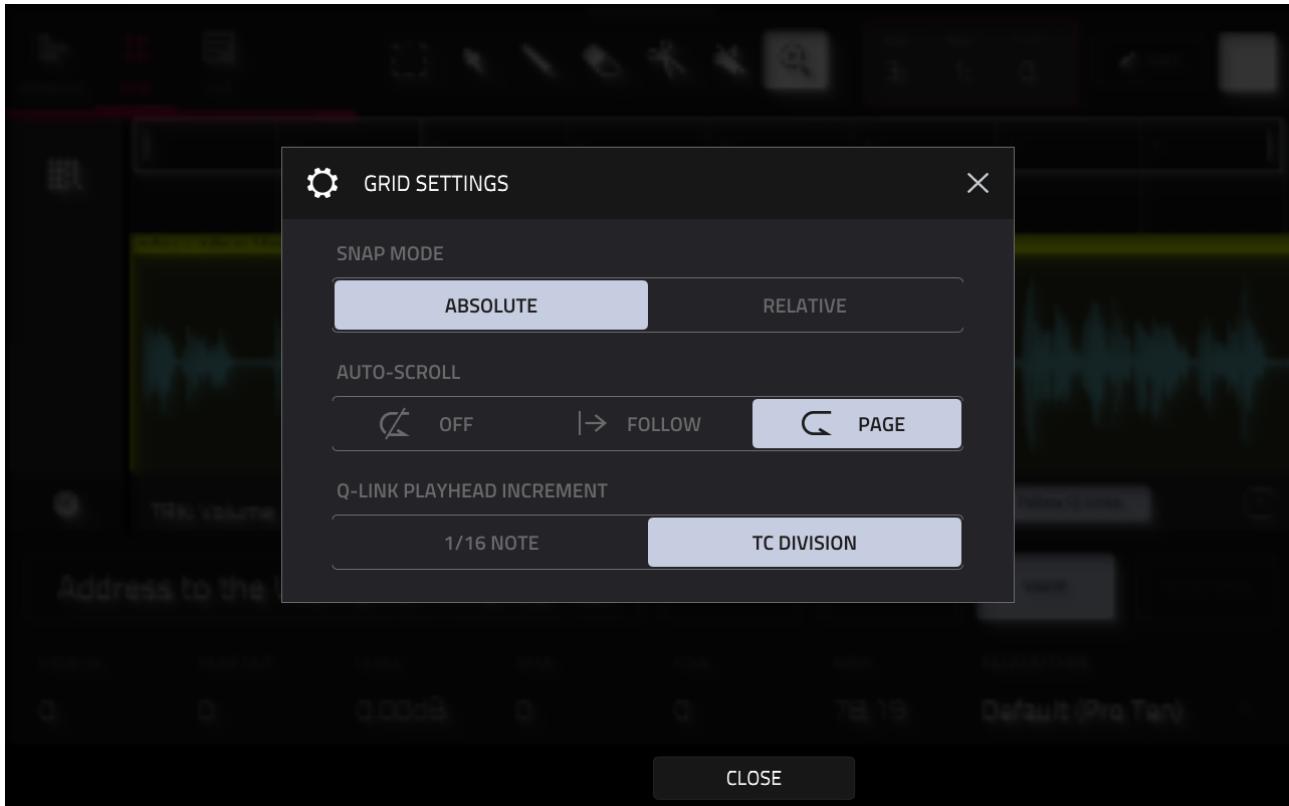
First, let's remove a section of this imported audio region. To do this we'll literally 'slice' the audio at the start and end of the region we want to remove.

First let's move the playhead to where we want to make the first slice. Press the **[Q-LINK]** button to select **Q-LINK Bank 1** and turn (Q-LINK 9) clockwise. You'll see the playhead move across the screen in 1/16 increments. If you hold down **[SHIFT]** it will move in '60 tick' increments.



*Remember you can turn off the (often annoying) Q-LINK STATUS window by holding down the **[Q-LINK]** button and de-selecting '**Q-LINKS STATUS**'.*

You can change the Q-LINK playhead behaviour using the **gear icon** in the top right of the toolbar.

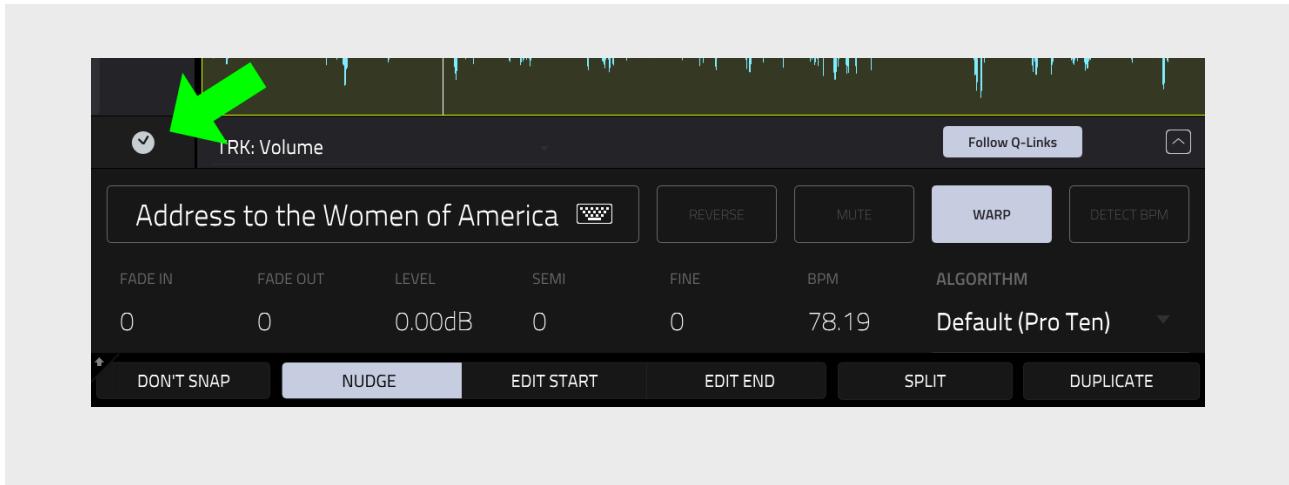


The default **Q-LINK PLAYHEAD INCREMENT** is **1/16 note**, but set to **TC DIVISION** to move the playhead in whichever TC division is set in the 'TC' screen.

While you are there, set **AUTO-SCROLL** to **PAGE** or **FOLLOW** to ensure no matter where you position the playhead, the waveform moves with you.

CHANGING TIMING CORRECT SETTINGS

You can change TC settings in the EDIT AUDIO screen in three ways; from the global 'pull down' menu, via [**SHIFT**] > **TC** bottom menu button, or from the **Timing Correct icon** on the left side of the screen:

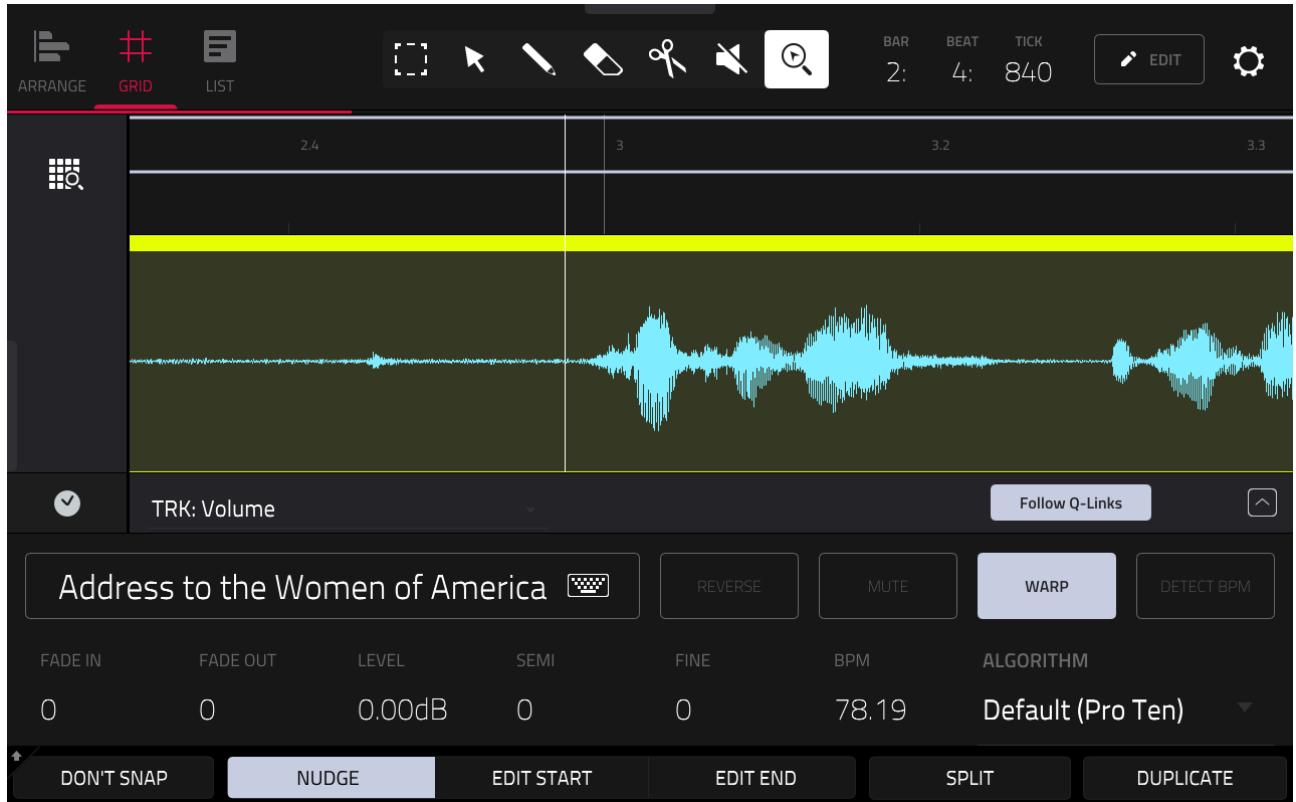


Please note that if **GLOBAL TIMING CORRECT** is 'OFF' then the Q-LINK will still use whichever time division is set in the **Timing Correct** Settings screen, so it's impossible to move in single ticks with the Q-LINKS.



*It is possible to move the playhead in single 'ticks' with the data wheel – first, set **GLOBAL TIMING CORRECT: OFF**, then tap the **time locator** in the top toolbar and hold down [**SHIFT**] while you turn the (DATA WHEEL).*

Using whichever method you prefer, set the playhead at the beginning of the waveform peak at around **2: 4: 840**:



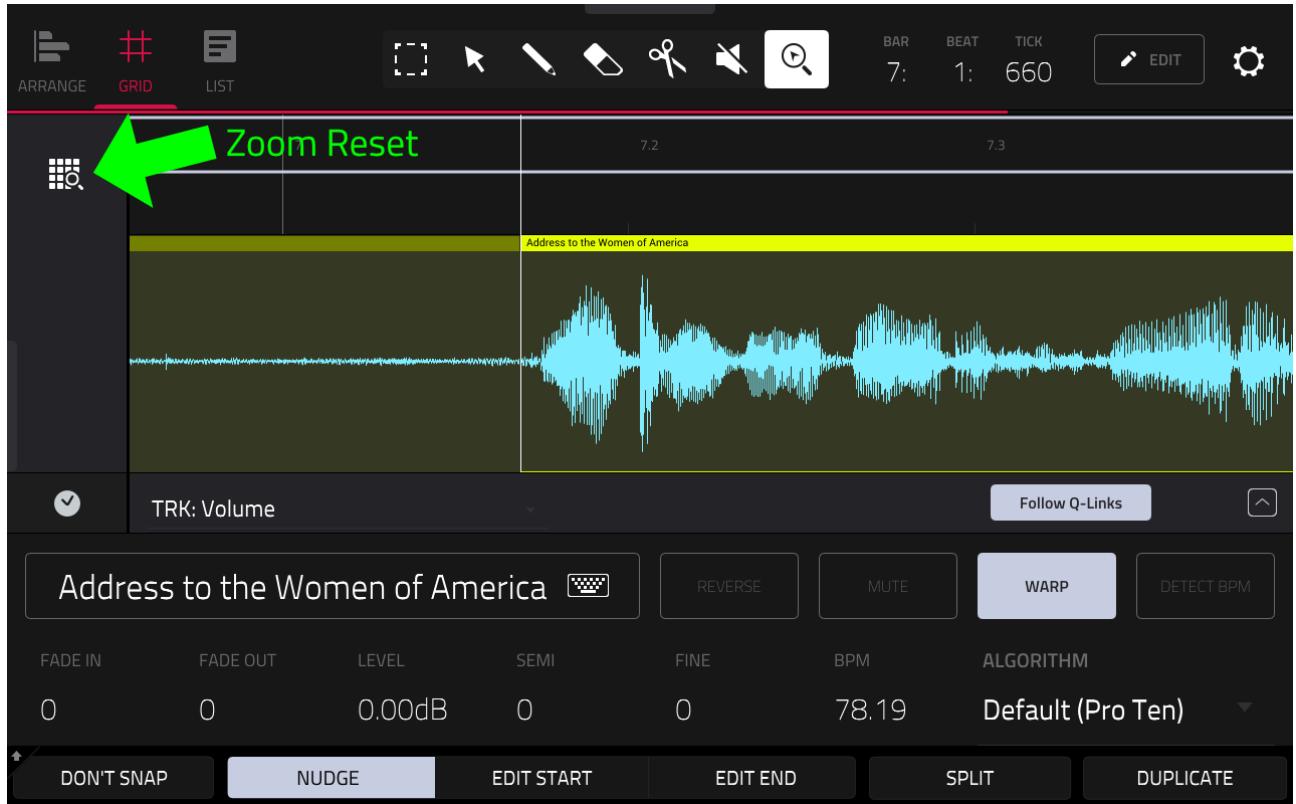
To slice the audio file here, hit the **SPLIT** button in the bottom button bar. The audio file is now split into two distinct regions, with the second region automatically selected (notice how the region header is brighter):

B09: ADDING AN AUDIO TRACK

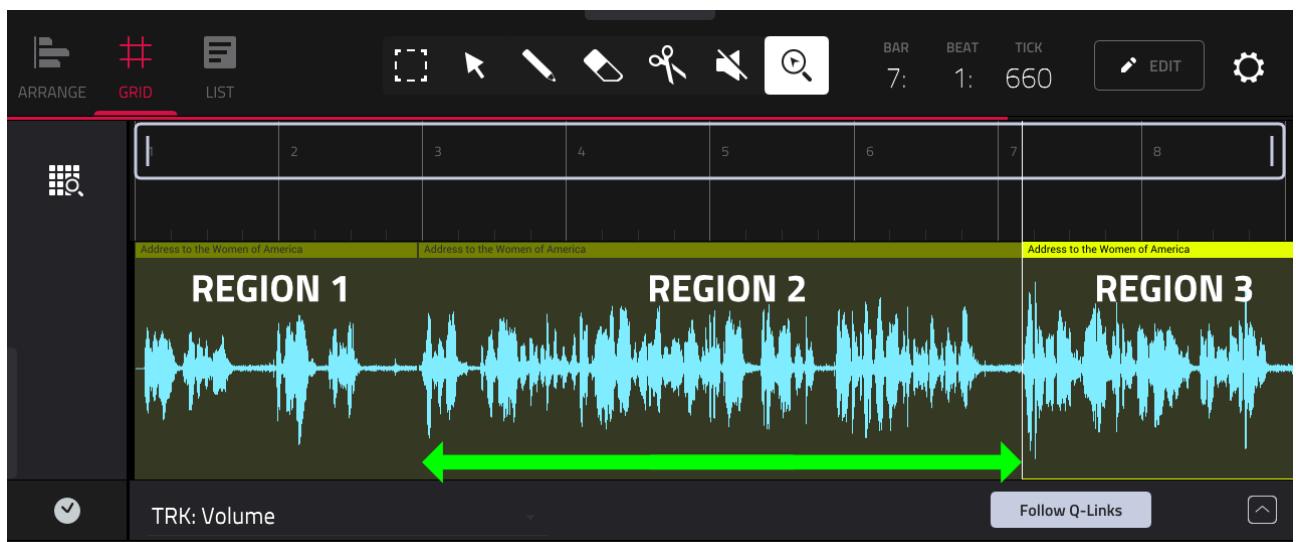


Move the playhead again, this time to **7:1:660** and hit **SPLIT** again:

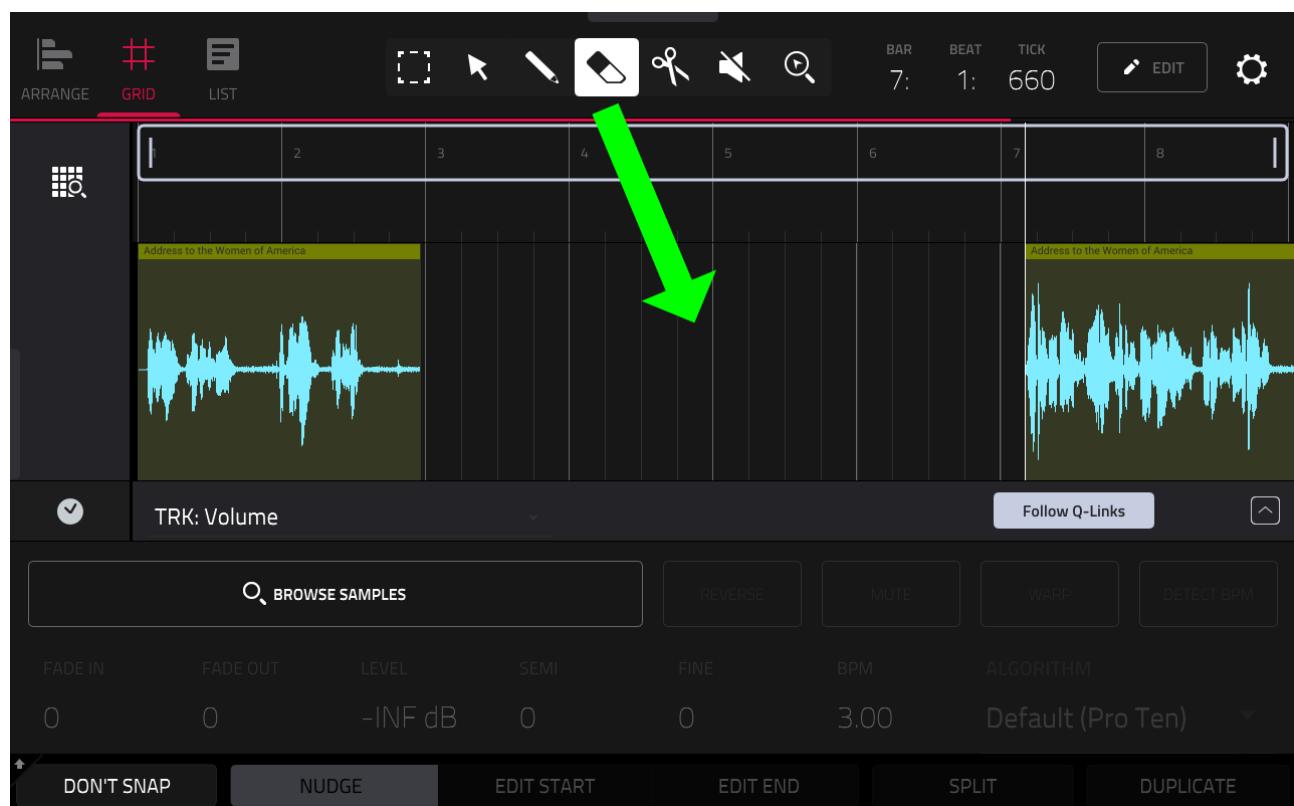
B09: ADDING AN AUDIO TRACK



Press the **Zoom Reset** icon:



We now have created three unique regions from that single audio region, with the third region currently selected. I want to remove the second (middle) region. The quickest way to remove any region is to select the **eraser tool** from the top toolbar and then tap on the second region to erase it:



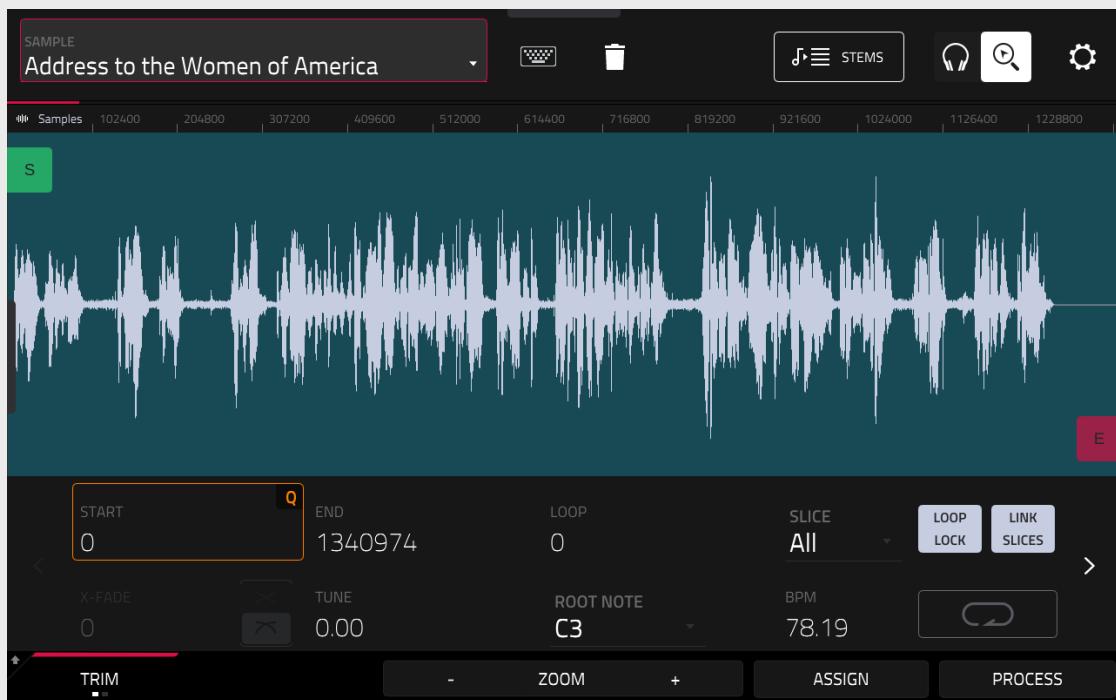
We now have two distinct audio regions on our track. Hit [**PLAY START**] to listen.

EDIT AUDIO VS SAMPLE EDIT

We know that the edits we make to a pad layer in a DRUM track do not affect the underlying 'raw' samples themselves, these can only be

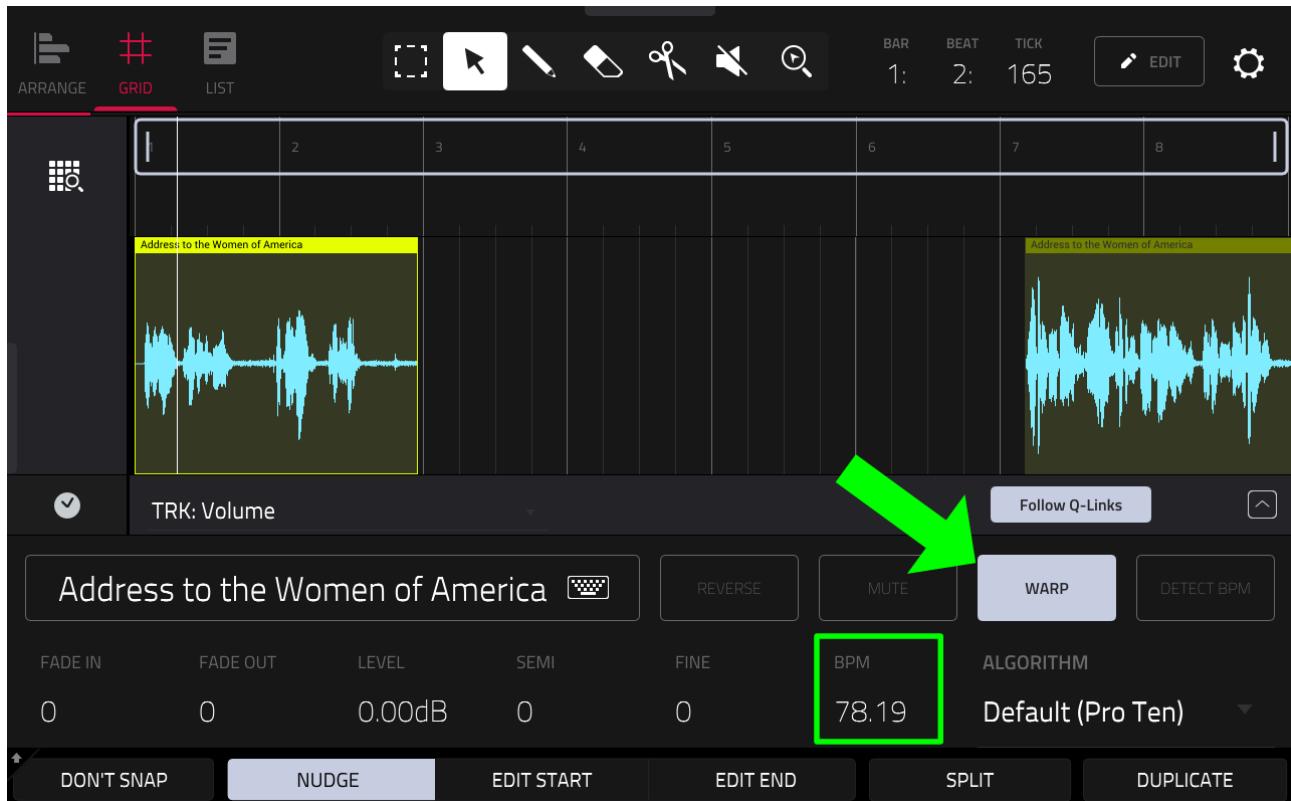
permanently edited in SAMPLE EDIT. The same is true when dealing with audio tracks; any edits we make to a sample within an audio track only affects how that samples sounds *within that audio track*.

If you go to **SAMPLE EDIT > TRIM** and select the **Address to the Women of America** sample you'll see that the section of audio we removed in the audio track is still all present and correct on the original sample itself:



CHANGING AUDIO SPEED

Let's focus on that first audio region - if it's not already selected, choose the select tool from the top toolbar and tap on the first region:



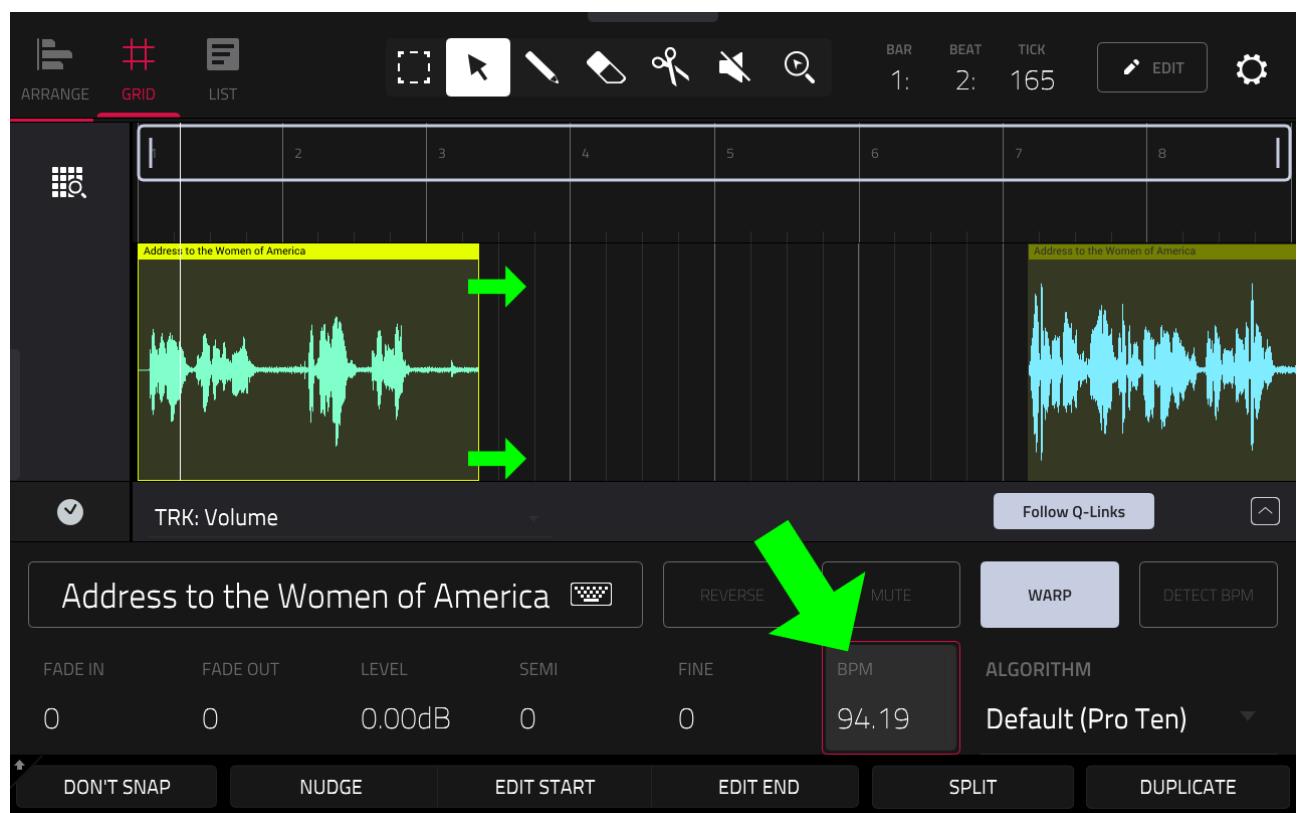
At the moment the audio sounds far too quick for the beat, it's really 'rushed', so let's slow it down. Notice the '**WARP**' button at the right end of the screen? By default, all audio regions are already set as warped, which allows us to easily change the speed of an audio region without changing its pitch.

When you initially import audio into an audio track the MPC tries to determine the inherent tempo of the audio. This is normally fairly simple when the audio is a pre-edited 'loop', but it's really quite meaningless for a sample of someone 'talking' as it is unlikely to have been recorded to a click track or beat.

Regardless, as you can see from the BPM field, the MPC has arbitrarily decided that it has a tempo of **78.19 BPM**. Tap on the **BPM** field and begin

turning your (DATA WHEEL) – if you turn it anti-clockwise you'll see the tempo decrease and the audio region gets smaller.

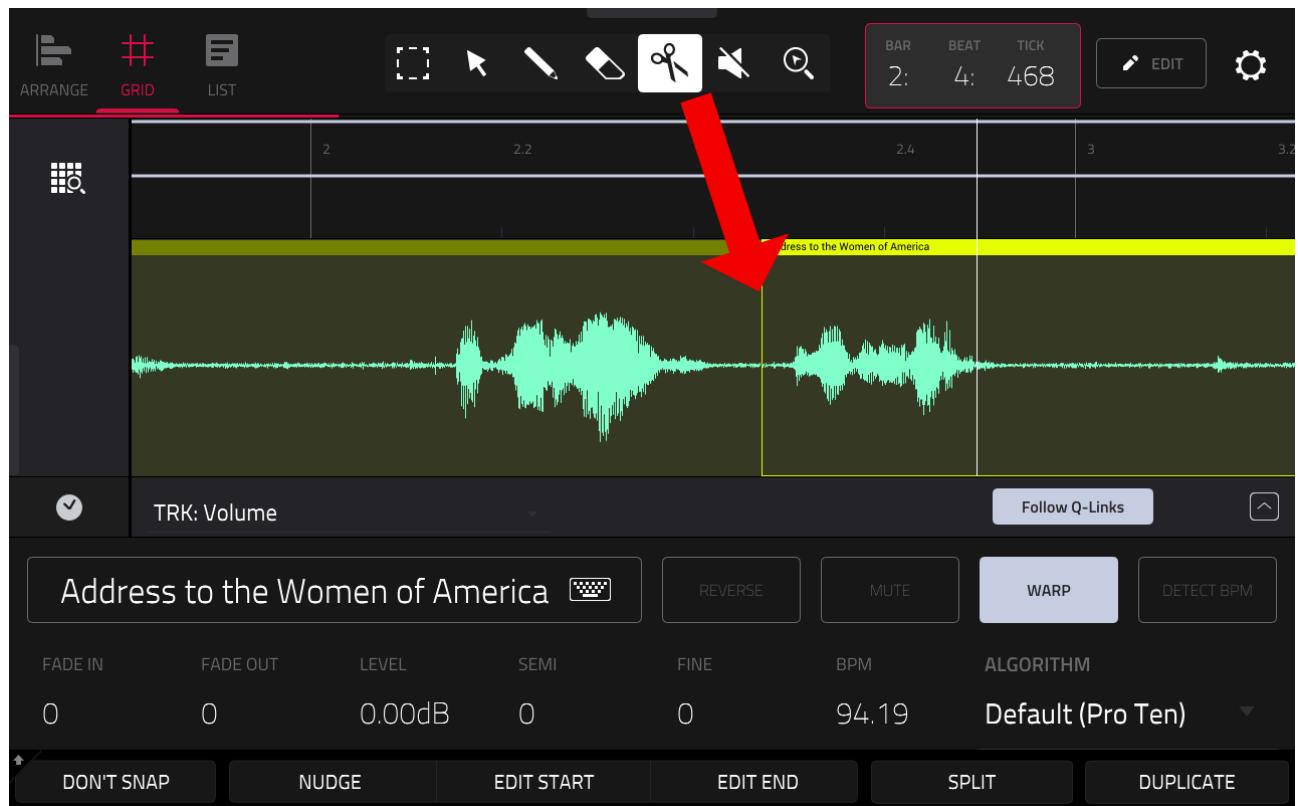
However we want to make our audio longer so it stretches to fill more space on our track, so start turning the (DATA WHEEL) clockwise to increase the tempo and you'll see the waveform gets longer. Try a **BPM** of **94.19**:



Now hit [**PLAY START**] – you should hear that audio region 1 plays back much slower, but the pitch of the vocal is unchanged. It also fits nicely with the beat, apart from the last words '*a revolution*'.

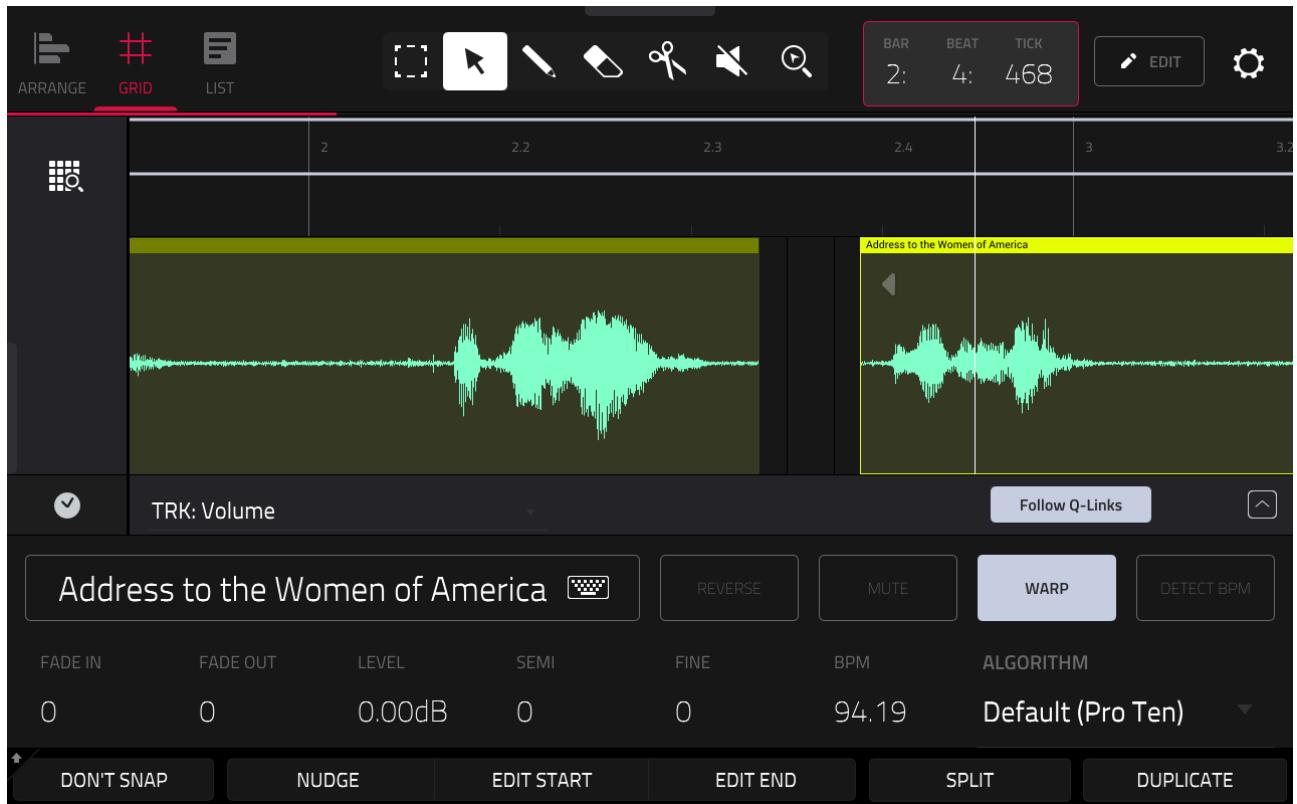
No problem, let's just move that last section along a bit. First use the **ZOOM tool** to pinch and zoom into the **region 1 waveform**. Before we used

a mixture of the playhead and the SPLIT button to make a cut, but this time from the toolbar, choose the **CUT tool** (the **scissors** icon) and tap on the waveform just before the '*a revolution*' section begins:



This cuts our region at the point at which we touched it. Don't worry if it's not perfectly accurate as we'll fix this soon.

Now choose the **SELECT tool**; tap and hold in the top half of newly cut region and drag the region to the right until the initial waveform peak starts at around **2.4** on the timeline:

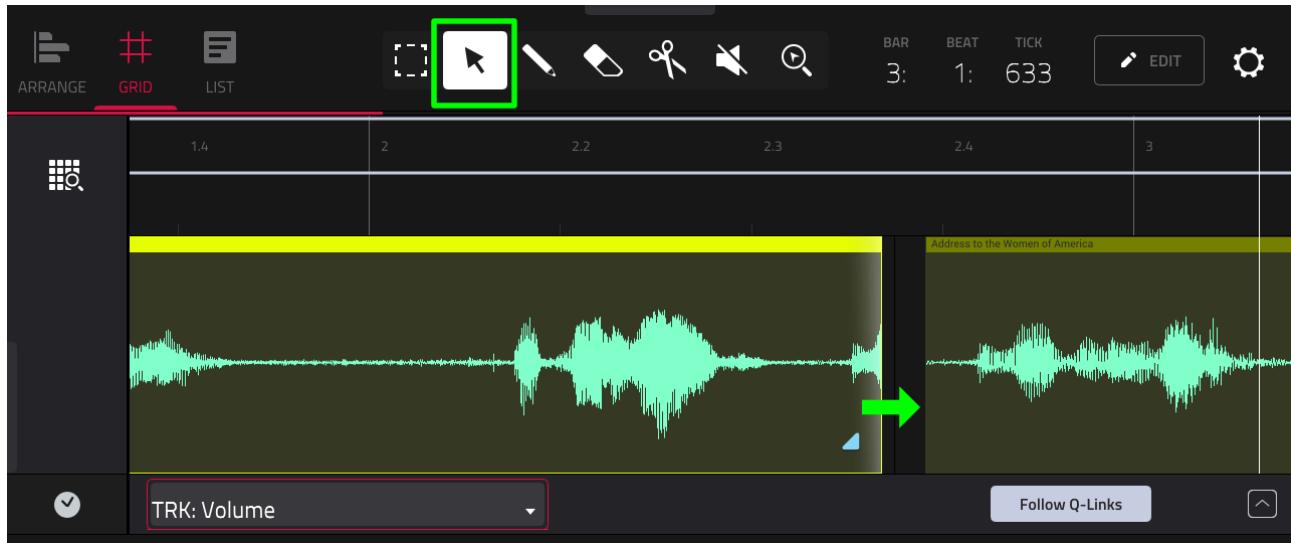


Hit [**PLAY START**]. That newly cut region is definitely more in time with the beat but is still too quick, so let's lengthen just this new region even more – try a tempo of **146.19 BPM**.

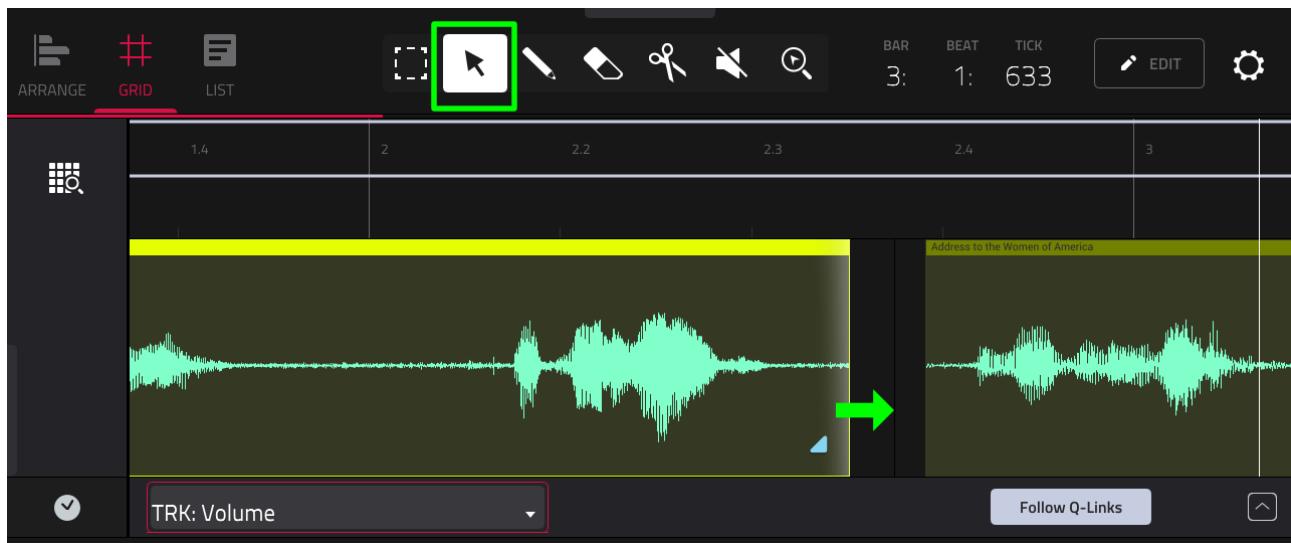
Hit [**PLAY START**] to preview. That works pretty well! Let's tidy up the audio region at little. You may have noticed that my initial 'cut' wasn't perfectly before the start of the '*a revolution*' audio, so the first region could benefit from regaining that extra 'air' that we accidentally removed. This is not a problem as audio region editing is completely 'non destructive'.

With the '**SELECT**' tool, tap and hold the **bottom corner** of region 1 and 'drag' the end of the region to the right; as you drag you'll see that you are actually revealing the hidden audio – in fact if you drag too far you'll even reveal the '*a revolution*' section of the audio:

B09: ADDING AN AUDIO TRACK



Set the end of the region just before the start of '*a revolution*':



Hold down **[SHIFT]** and select **SOLO**. Now hit **[PLAY START]** to just hear our edited audio.

ADDING BACK THE 'AIR'

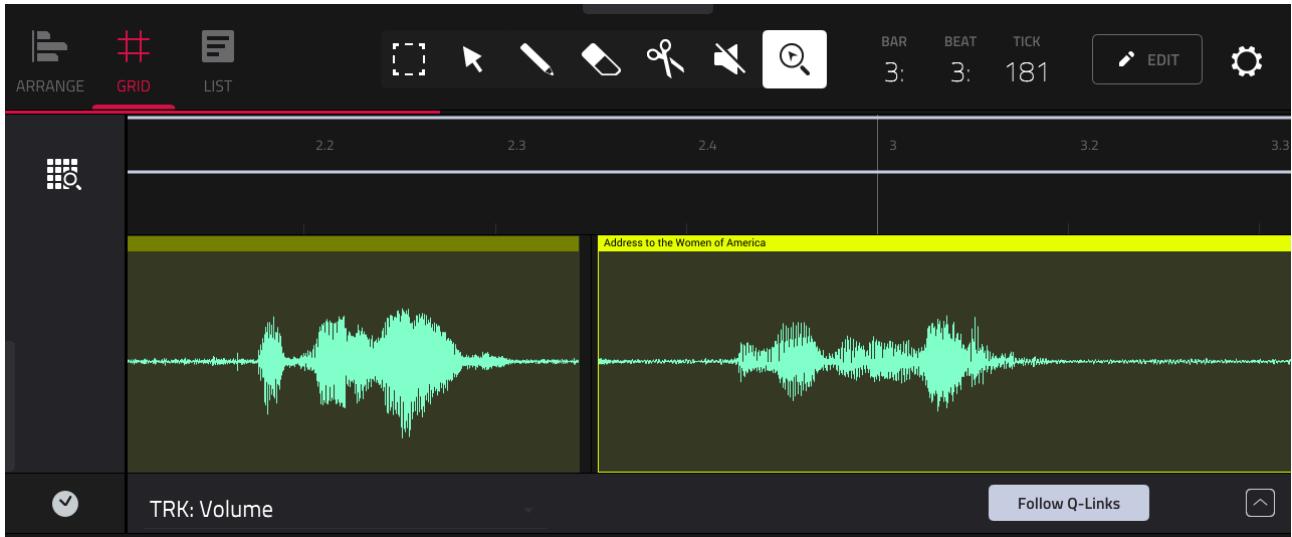
You can probably hear that the empty portion of audio remaining has created a section of complete silence between the two regions; this can sound a little odd as the original vocal has a fair amount of hiss and noise in the background. This type of background noise is often referred to as the 'air' of a sample. You might prefer to just leave these silent gaps as they are, but we can use various techniques to either mask them.

First just be aware that when listened to as part of a complete song it's possible that these silent gaps are effectively undetectable, especially if we've also added some ambient FX such as reverb and or delay to this track.

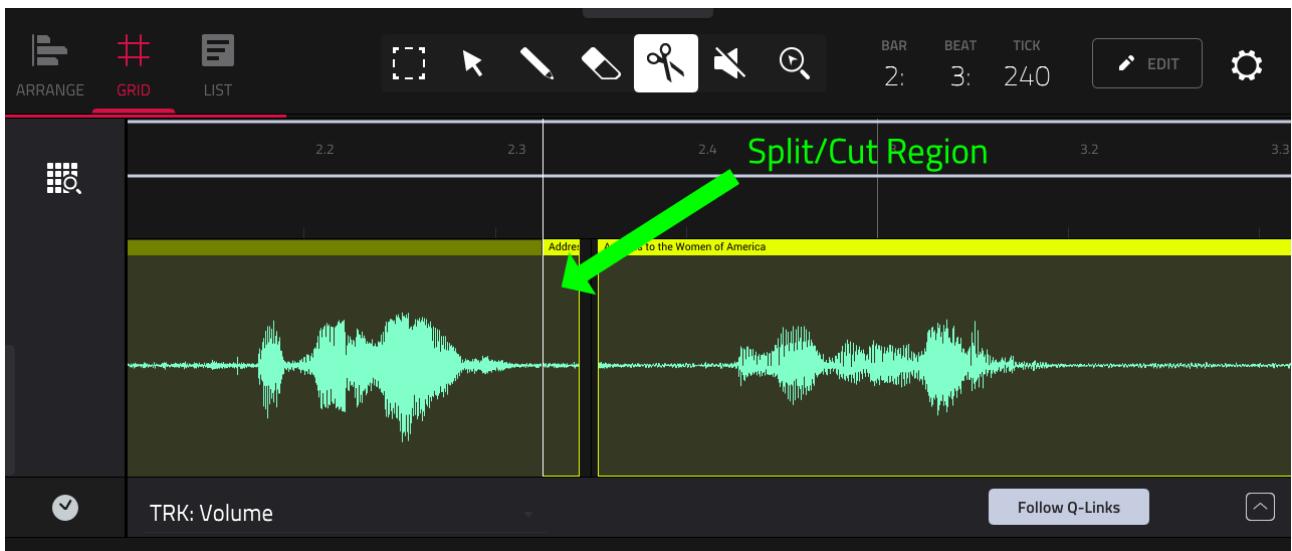
However, we can easily add some air back into this silent gap. You can use the 'bottom left drag' method we used before, or we can use the data wheel.

Make sure **DON'T SNAP** is enabled in the bottom toolbar, now use the **SELECT** Tool to first select **region 2**, then hit **EDIT START** - now turn your (DATA WHEEL) to make even finer edits to the start of region 2. Again, as audio editing is non destructive, the start and end points of any region are easily changed, at no point are you permanently deleting any part of the original sample.

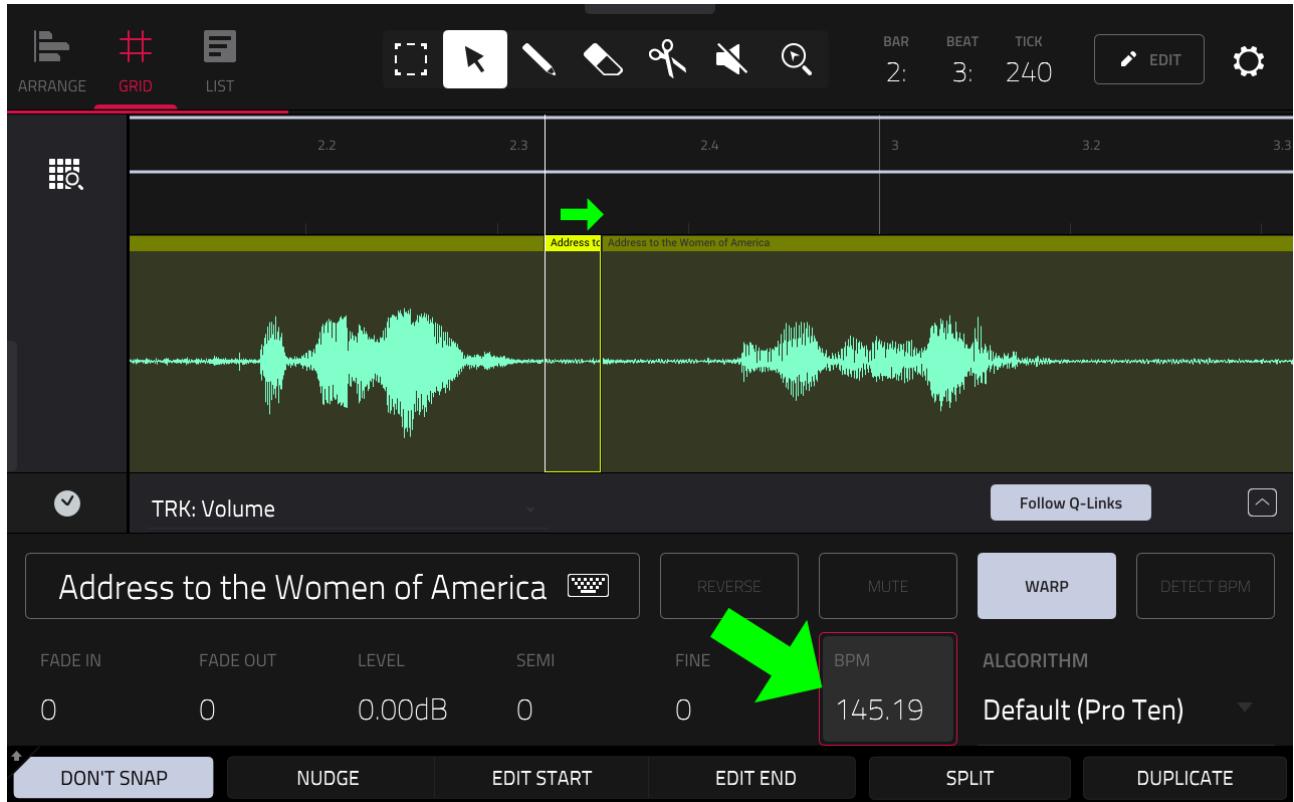
Take the start of region 2 back as far as possible without 'revealing' any actual speech audio:



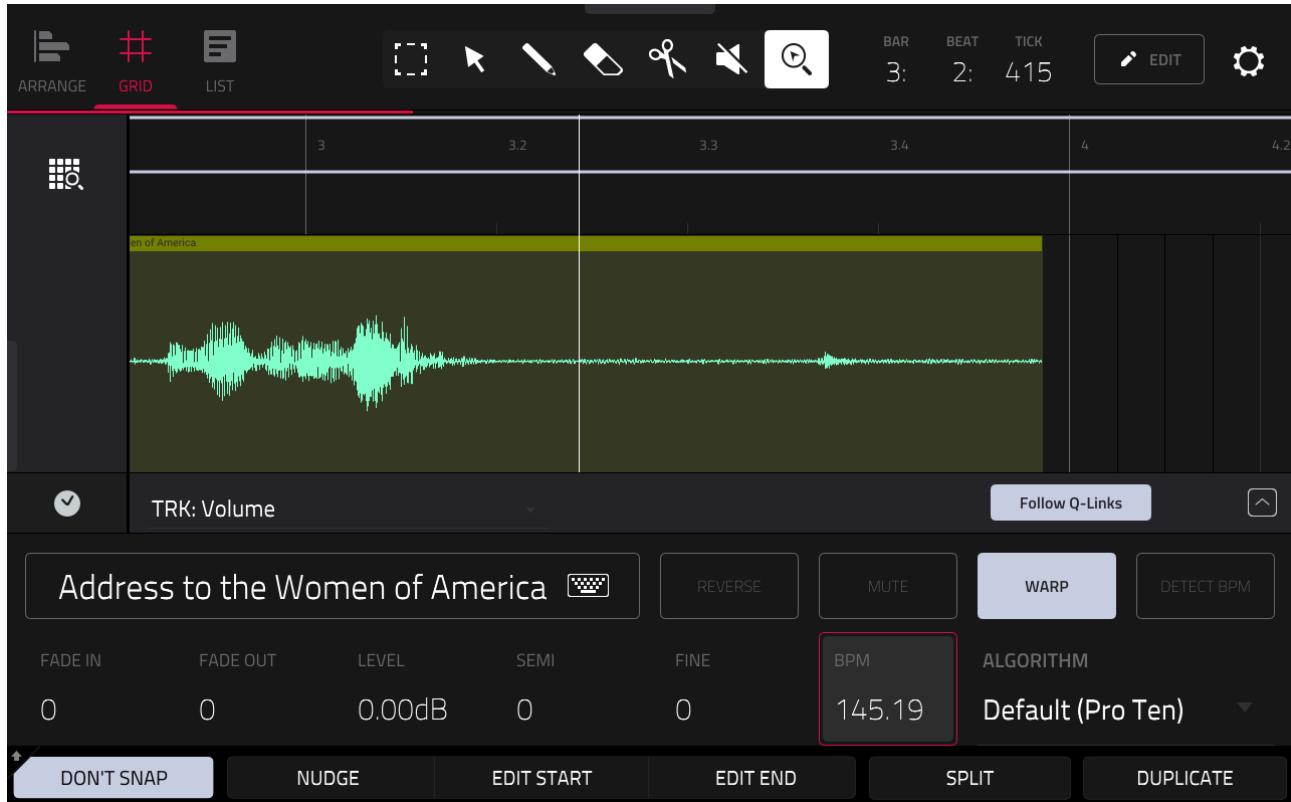
To fill the small gap of 'air' remaining, first 'cut' the end of region 1 using the **SPLIT** or **CUT** tool methods:



You now have a 'cut' of pure air; select this small region of air and tap on its **BPM** field; we can now use warping to 'stretch' our air region until the silence gap is completely filled. A **BPM** of **145.19** achieves this:

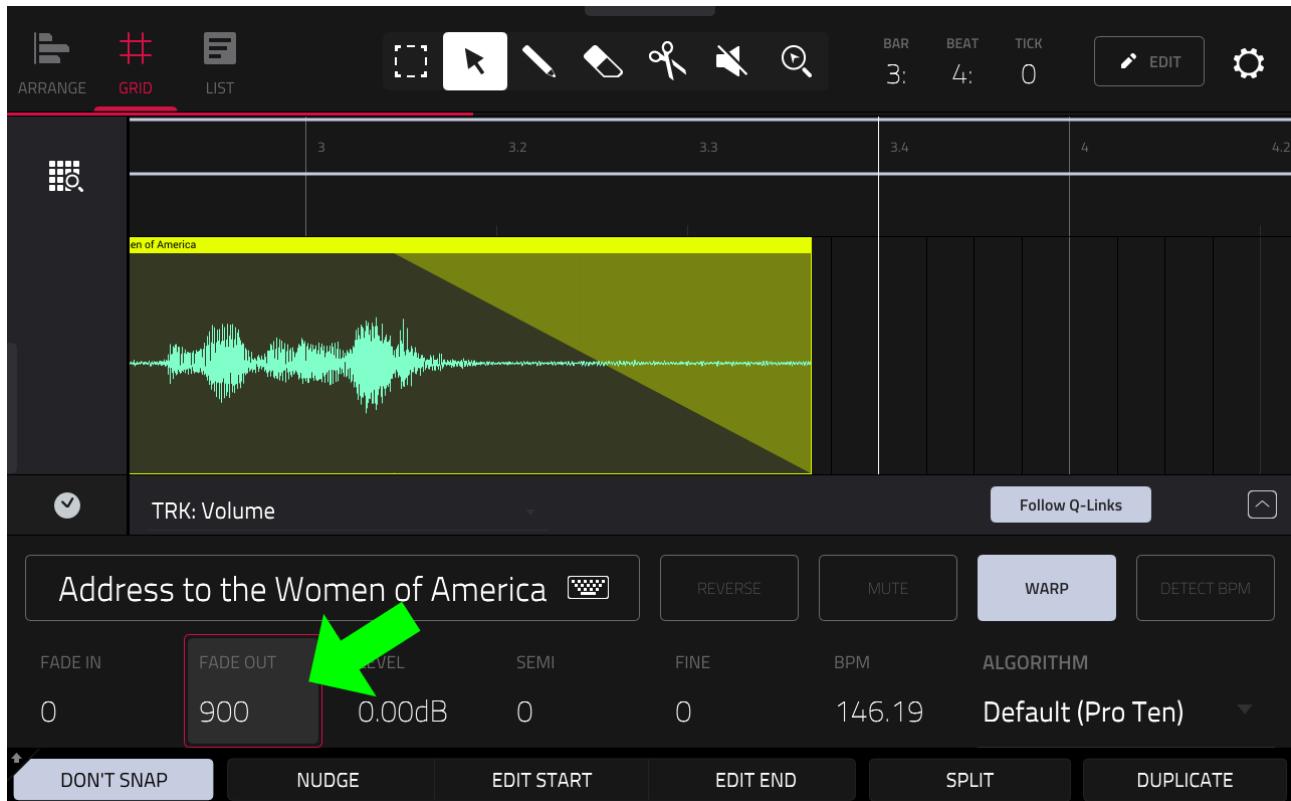


Hit [PLAY START] to hear the first few bars in the context of the entire beat so far. We can definitely hear that the 'air' in the speech ends very abruptly after the word 'revolution', plus there's a glitchy noise at the end of the region – use the zoom tool to change the waveform position to see this:



First, make sure the entire region is selected and either use **EDIT END** or '**bottom right drag**' to reduce the length of the region. If you use **EDIT END**, remember to disable **DONT SNAP** otherwise you'll be there all day.

To smooth out the end of the region, double tap the **FADE OUT** parameter and enter a value of **900**:

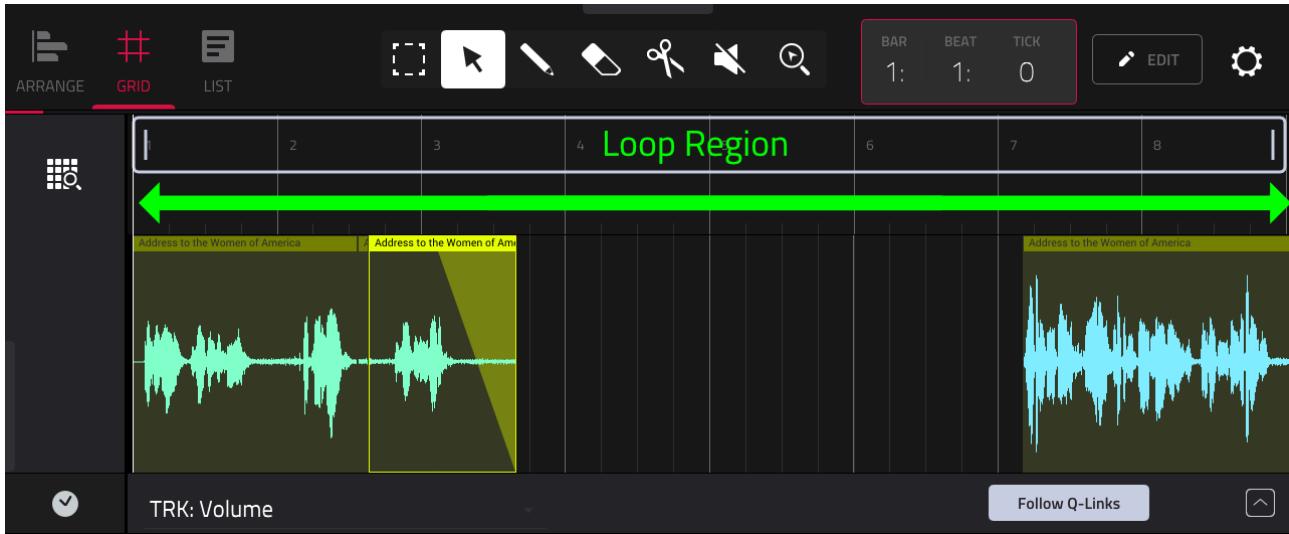


Hit [**PLAY START**] to hear everything so far – sounding good!

EDITING THE SECOND HALF

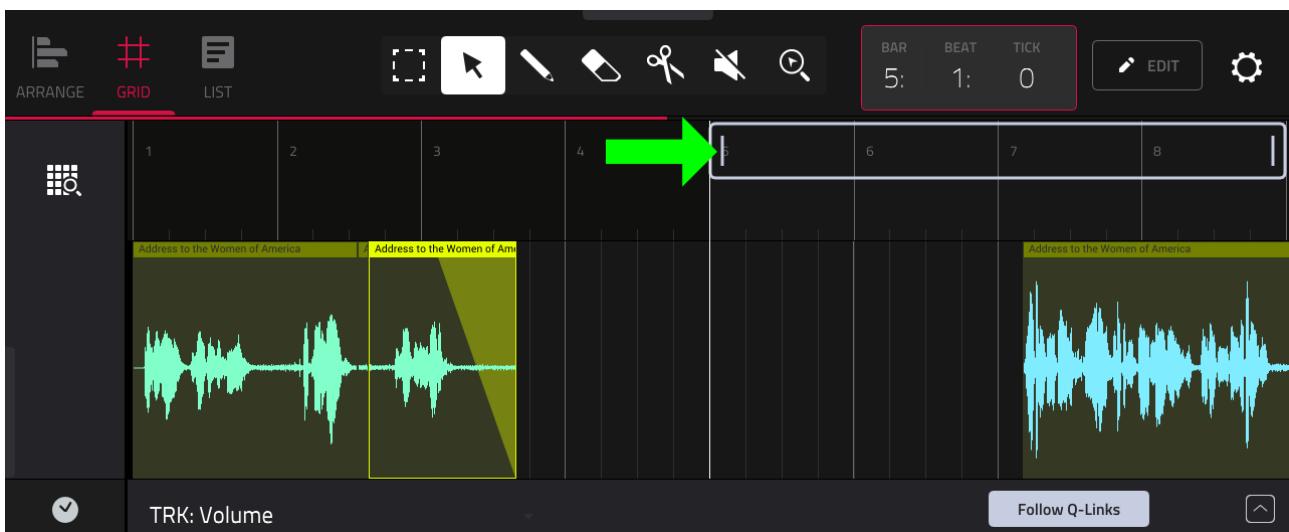
Let's now focus on the second half of the audio track, which occurs within bars 5 to 8. As we're only going to focus on those last four bars, let's restrict sequence playback so it only plays within those bars.

Press the **Zoom Reset** icon and observe the white outline around the timeline:



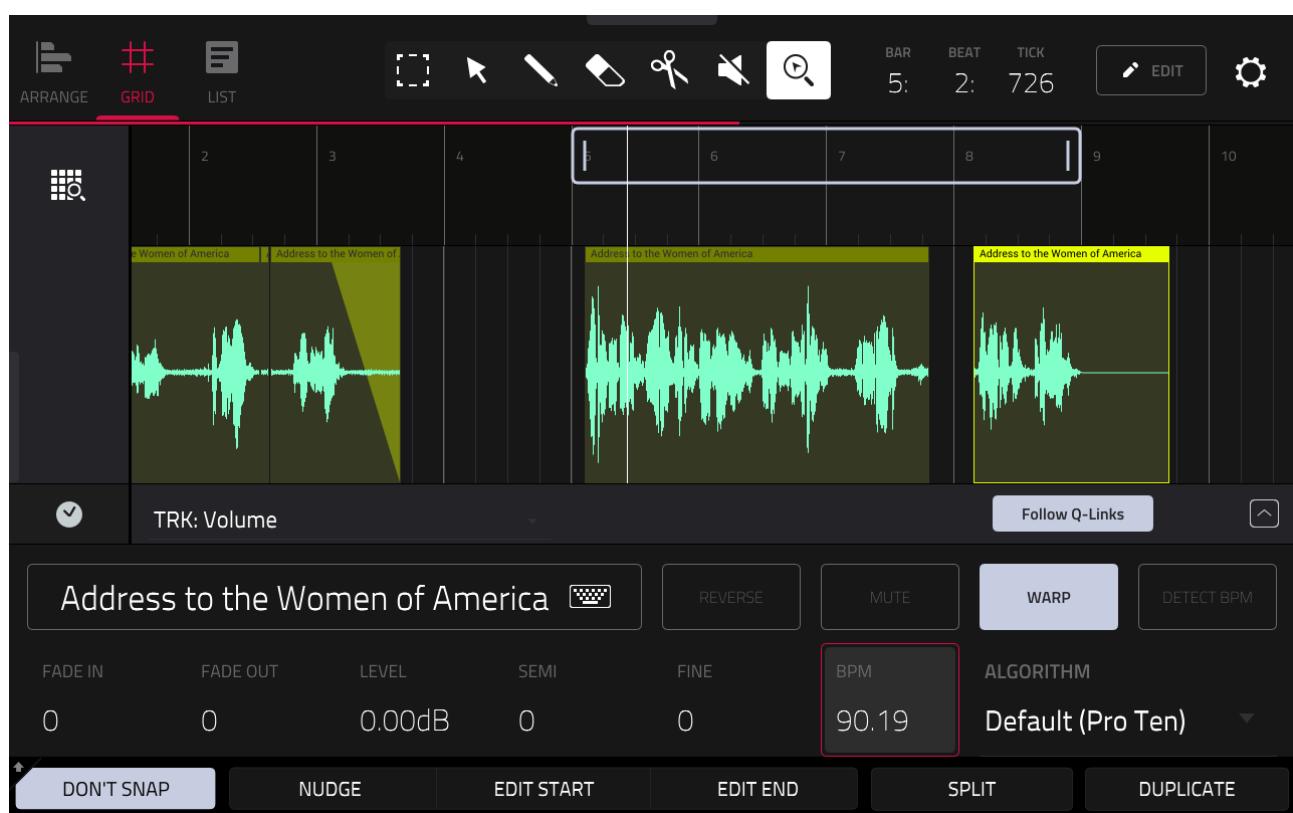
This is the '**loop region**' and it sets which bars our sequence will loop between (it requires that the sequence is set to **LOOP: ON** in **MAIN**). The default is to loop the entire length of the sequence (in this case, bars 1 to 8).

Hold and drag the start of the loop so the loop region covers bars 5 to 8:



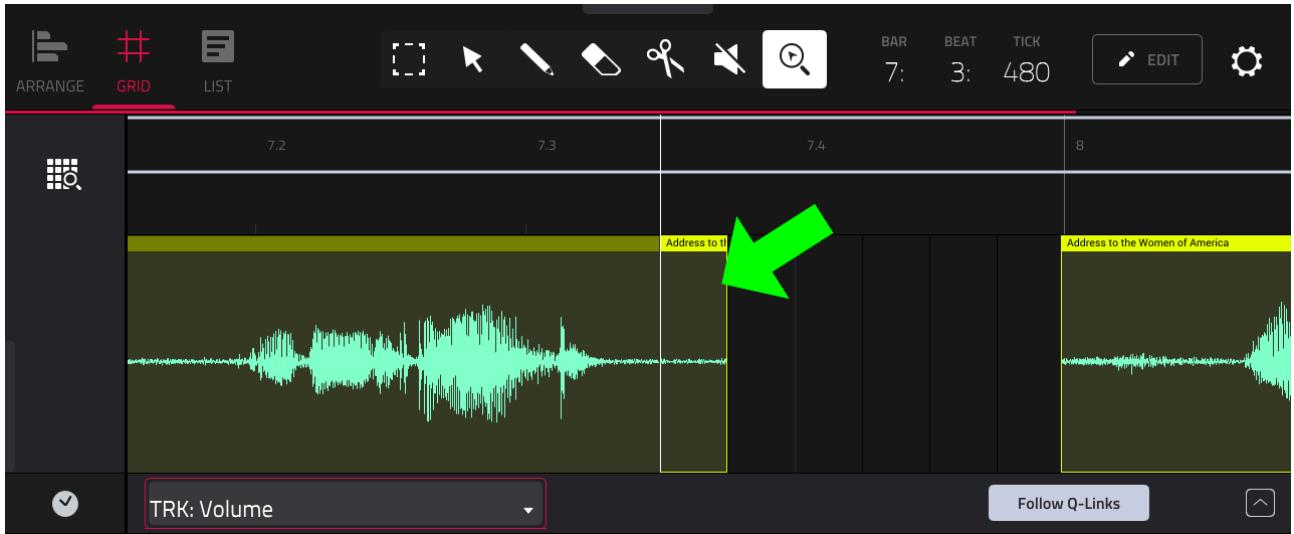
Now press [**PLAY START**] and your sequence will now loop playback between bars 5 to 8. Use the **SELECT tool** to move the audio region to just after bar 5 and as before, set the tempo to **88.19 BPM**.

This sounds good, but again, the last section '*we are really talking...*' needs to be slowed down and moved. Use the exact same techniques as we did at the end of bar 4, by cutting/splitting the '*we are really talking...*' region, move it along and adjust the tempo a little:



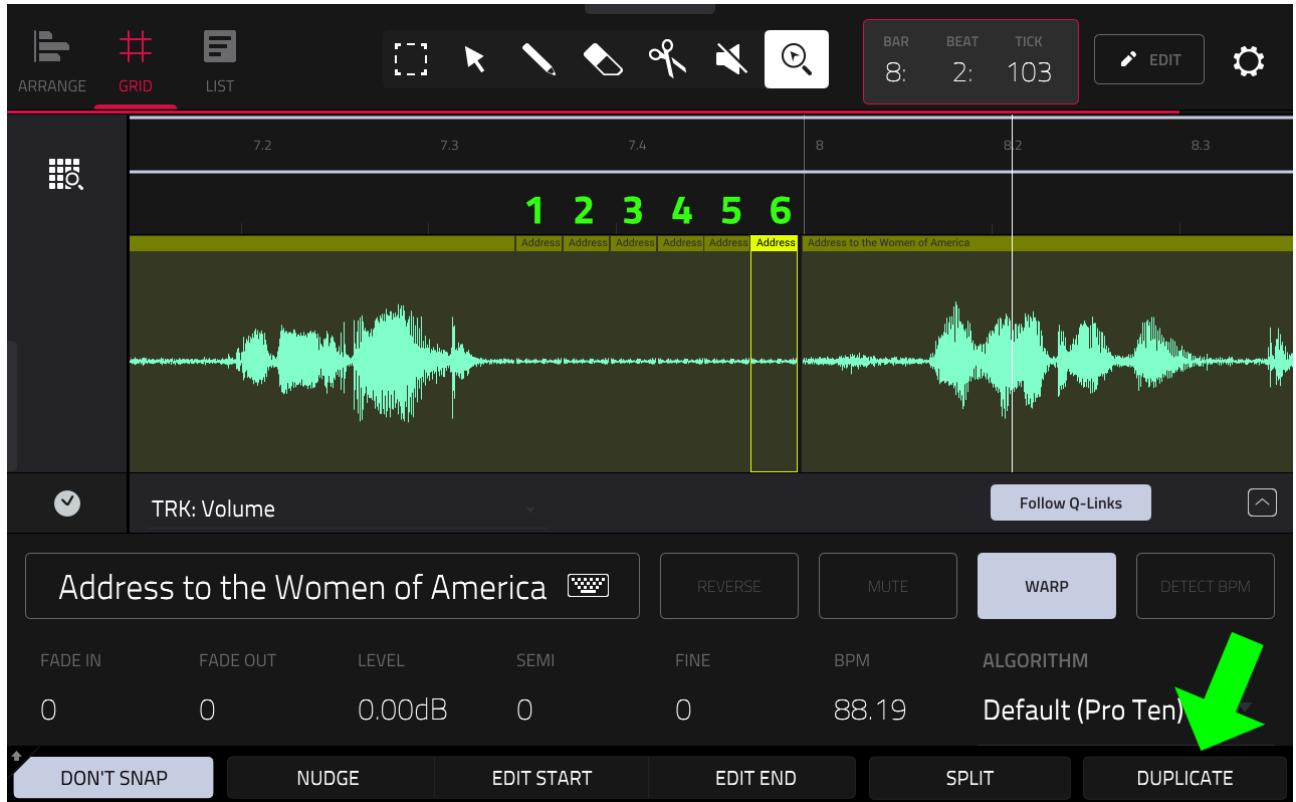
You can also add some 'air' by using the immediate region after the word 'earned'.

B09: ADDING AN AUDIO TRACK



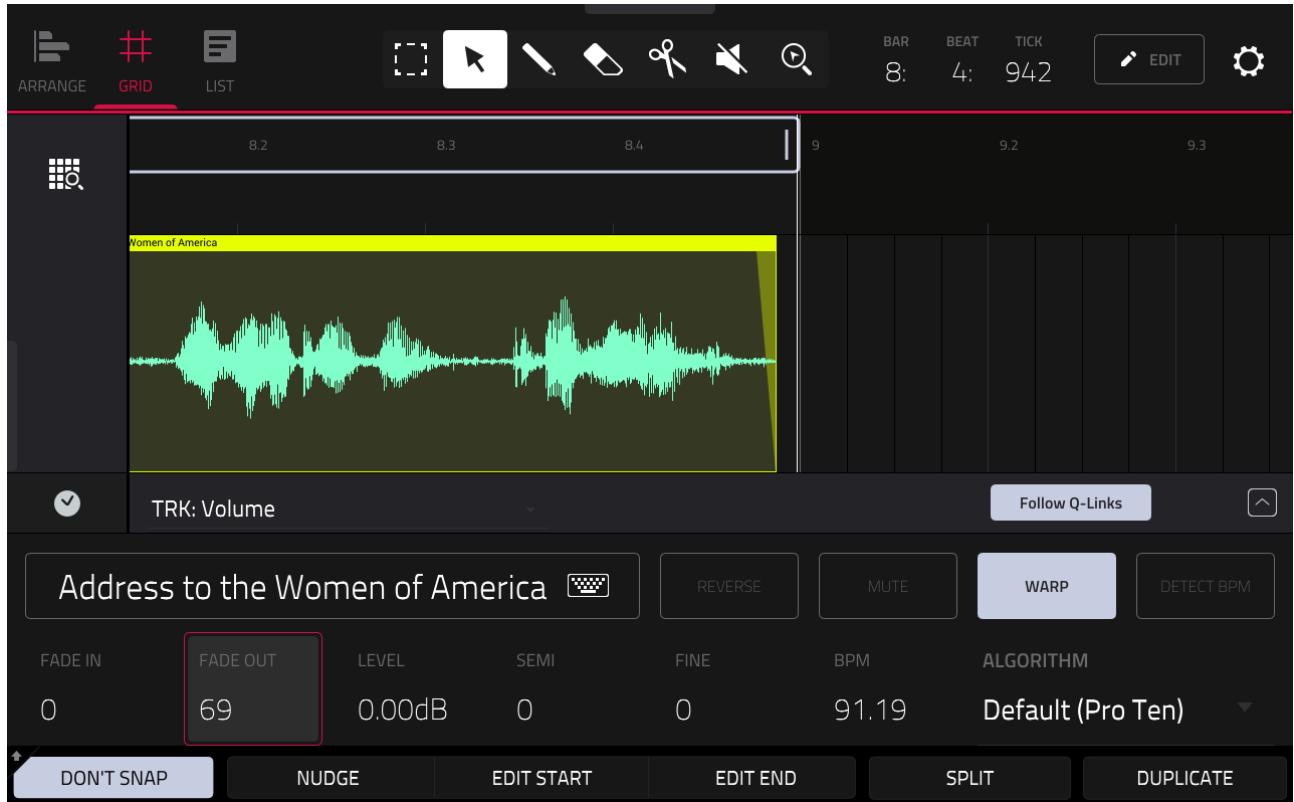
Select the newly split 'air' region and hit **DUPLICATE** multiple times until the space is filled (if you need to, stretch the last copy to fit exactly using the **BPM** field).

B09: ADDING AN AUDIO TRACK

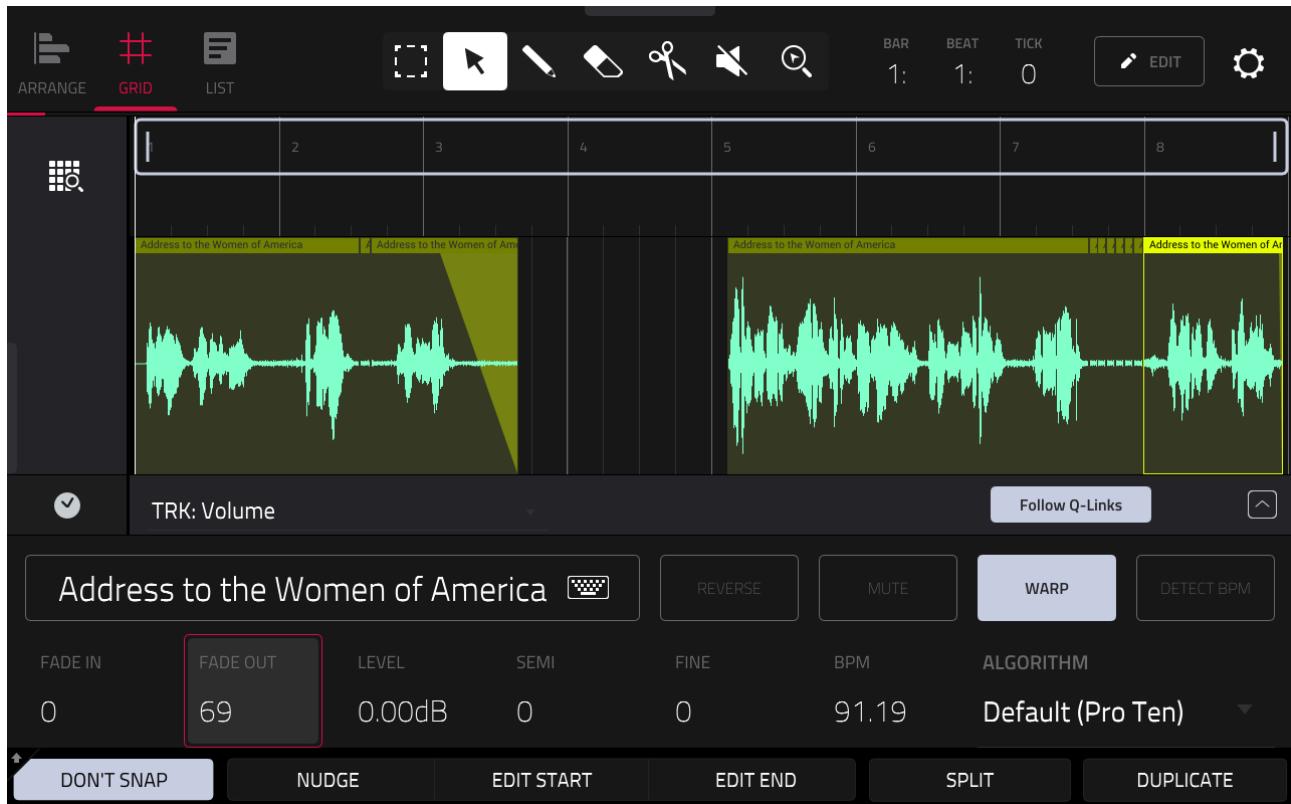


Finally edit the end of that last region so it fits within the last bar and add a little **FADE OUT**:

B09: ADDING AN AUDIO TRACK



Set the loop region back to covering bars 1 to 8. And press [**PLAY START**] to hear the edited track.



Now head to [MAIN] and use the **XL CHANNEL STRIP** to quickly tweak the volume level so the speech sits a bit more comfortably with the other tracks – don't worry, I know it's very dry and a bit harsh in the mid range but we'll be adding EQ, compression and ambience to this vocal later in this section!

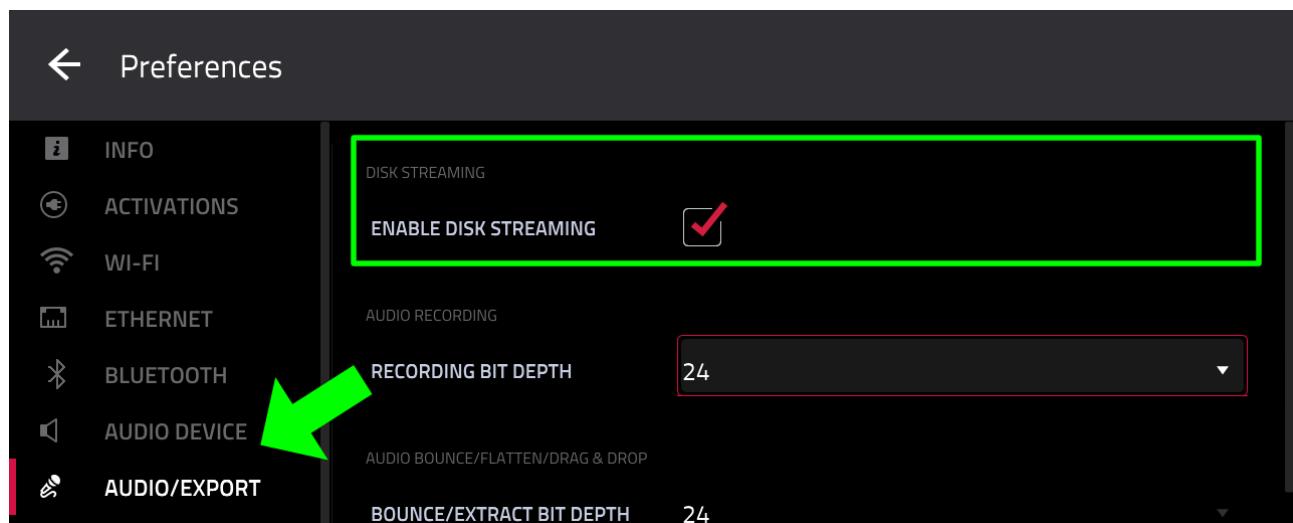
Load up the project **B09 Audio Track Edited.xpj** to examine my version so far.

WORKSHOP: DISK STREAMING AUDIO TRACKS

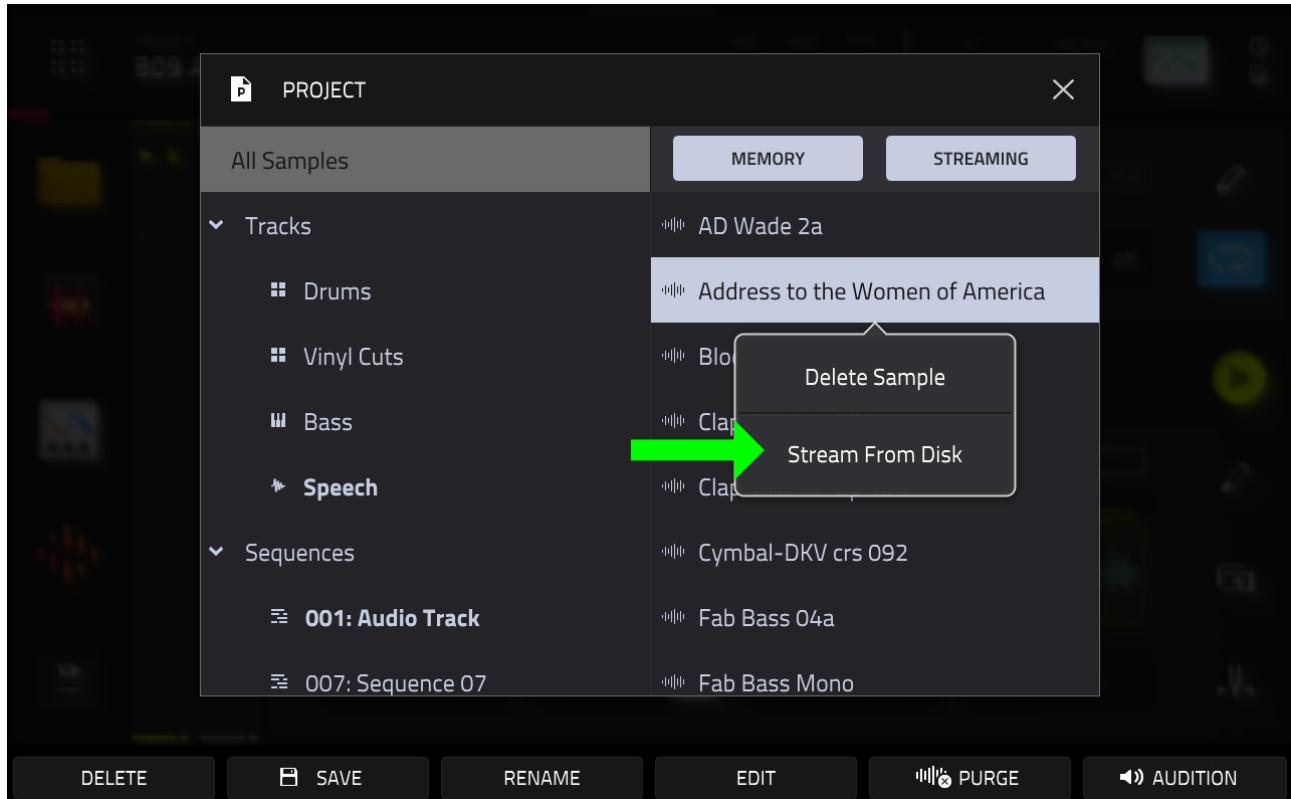
One of the issues with using audio tracks is they can quickly fill up your available system memory, especially if you are working with lengthly recordings of vocals or other acoustic performances.

To free up memory used up by long audio samples you can utilise **disk streaming**. If a sample is set to disk stream it will not be loaded into RAM memory and instead will be played back directly from disk. In theory this means you can utilise an unlimited collection of huge audio samples within any project, covering the system memory to running plugins, keygroups and kits.

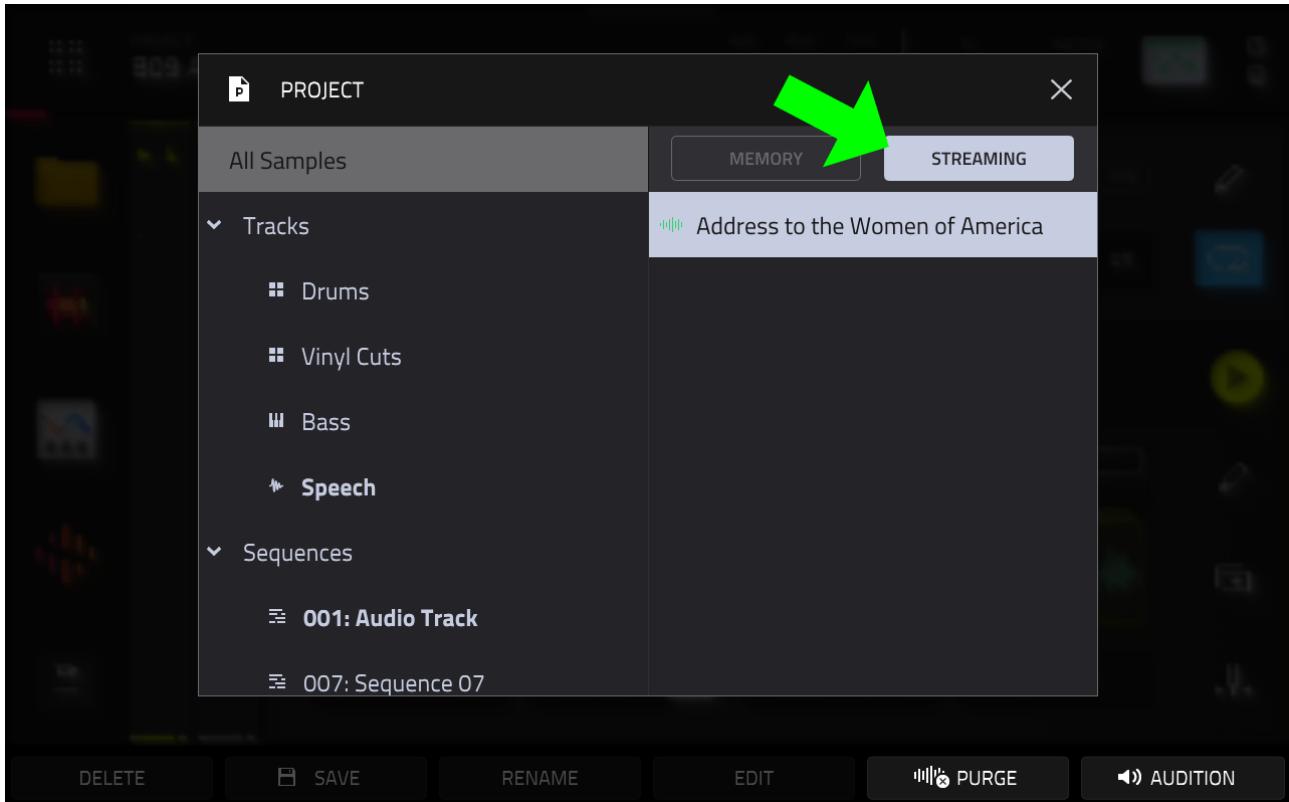
To enable streaming, first head over to **PREFERENCES > AUDIO/EXPORT** And make sure **ENABLE DISK STREAMING** is checked.



Let's stream the '**Address to the Women of America**' sample that we currently have assigned to our '**Speech**' audio track. Go to [**MENU**] > [**PROJECT**]:



Tap and hold on the '**Address to the Women of America**' sample and select '**Stream From Disk**'. You can use the filter at the top of the page to view which samples are currently streamed:



Now save your project and the streaming settings will be remembered. Now each time you load this project this sample will be streamed from the disk you saved the project to.



If you get any issues, you can easily switch back to standard memory playback by holding on the file and selecting 'Load to Memory'.

Disk streaming can in theory be used on any sample, however Akai do advise against using it on short samples that are continually triggered from within drum or keygroup tracks. This is because disk streaming can

never perform to the same level as RAM, even if you are streaming from a fast SSD drive.

I have tested disk streaming the individual samples on DRUM and KEYGROUP tracks and yes, it does work as long as you avoid overly 'busy' performances. When there's too many files looking to be streamed the MPC simply skips some of the files and you get moments of silence from your track. So keep the sequences simple and disk streaming is a viable way of using excessively large keygroup instruments.

And I actually found that streaming performance was identical on a class 10 SD card compared to an SSD drive (exactly the same audio drop outs each time). So MPC One and MPC Key 37 owners should not discount disk streaming just because they don't have an internal SSD drive option!

One issue is that every file must be manually set to '**Stream From Disk**' there's no way to change streaming settings to multiple files. I assume this is Akai's way of reminding us that they don't recommend streaming hundreds of little samples!

B10: CREATIVE FX & AUTOMATION

Our audio track is sounding much better but we need to fill that gap in the middle of the speech. This is an opportunity to look at getting creative with a mixture of FX, sample editing and 'automation'.

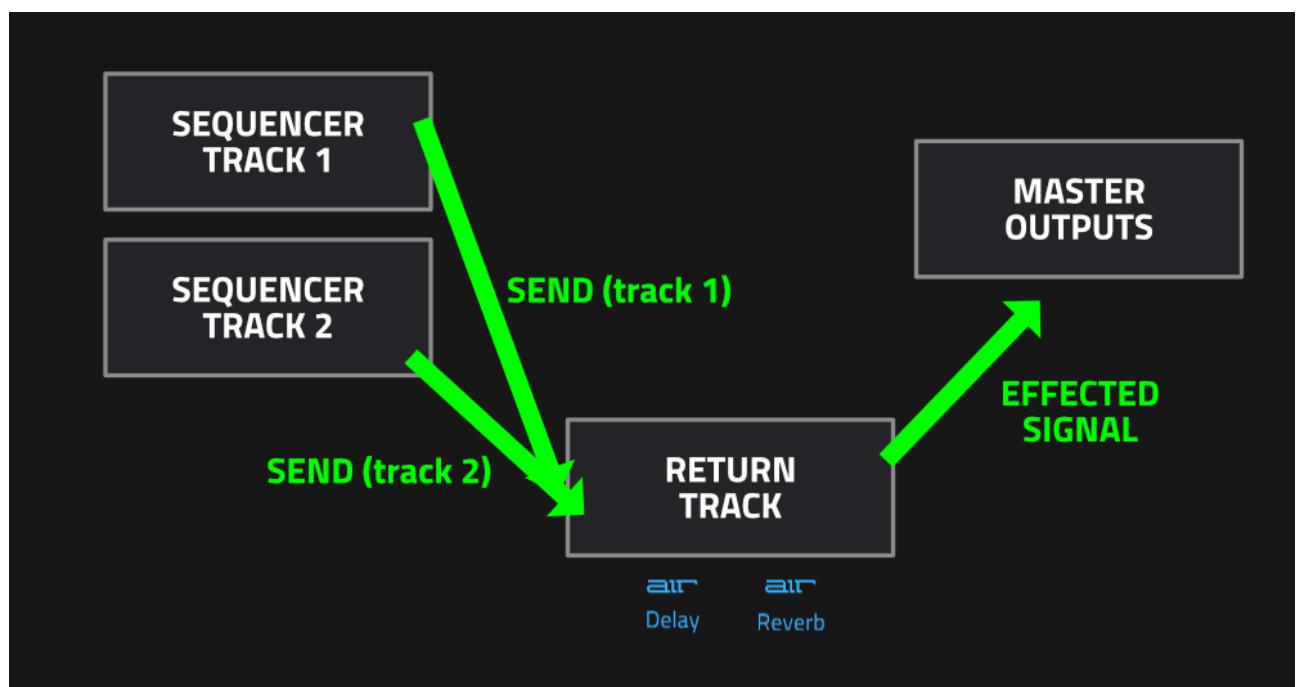
TOPICS COVERED IN THIS CHAPTER

- ✓ Using Send & Returns
- ✓ Introduction to automation
- ✓ Automating FX
- ✓ Views & editing automation

USING SEND FX

The speech in our audio track is very dry and could definitely benefit from some 'ambience' such as reverb and/or delay. At this stage in the song building process I'm not too bothered about getting this aspect perfect, I just want to help the speech sit more comfortably in the currently rough mix. And if this helps everything just sound 'better' while I continue working on the beat, then all the better.

A great way to apply ambience FX is to use **send fx**. When an effect send is used, part of the audio signal from a track is 'sent' to a specialist track called a '**return track**' (sometimes called an 'aux' track) where it is processed by one or more effects; this effected signal is then sent to the master outputs.



Send and returns are typically used with ambience FX such as reverb or delay. A big advantage of using send FX is that we can route the audio from **multiple tracks to the same return track** so all these tracks can be processed with the exact same effect settings, thus ensuring that our entire beat has a cohesive ambience. Additionally, all these tracks can be processed using the same, single set of FX plugins, making it very CPU efficient.

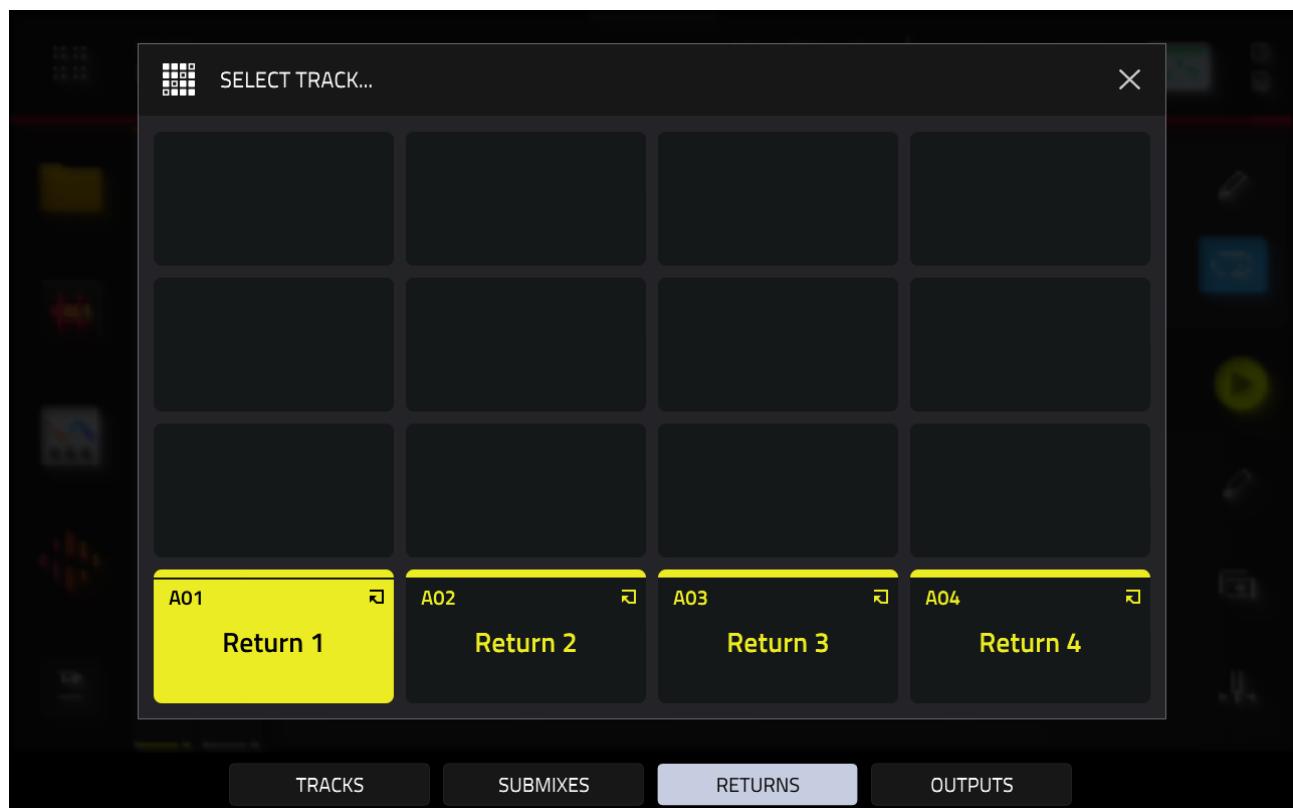
We can add 'depth' to each element by varying the amount of effected signal mixed in with each track; a higher amount of effected signal will

place the track further in the distance. This is in addition to other mixing techniques that can add depth, such as varying volume, adjusting panning or controlling higher frequencies.

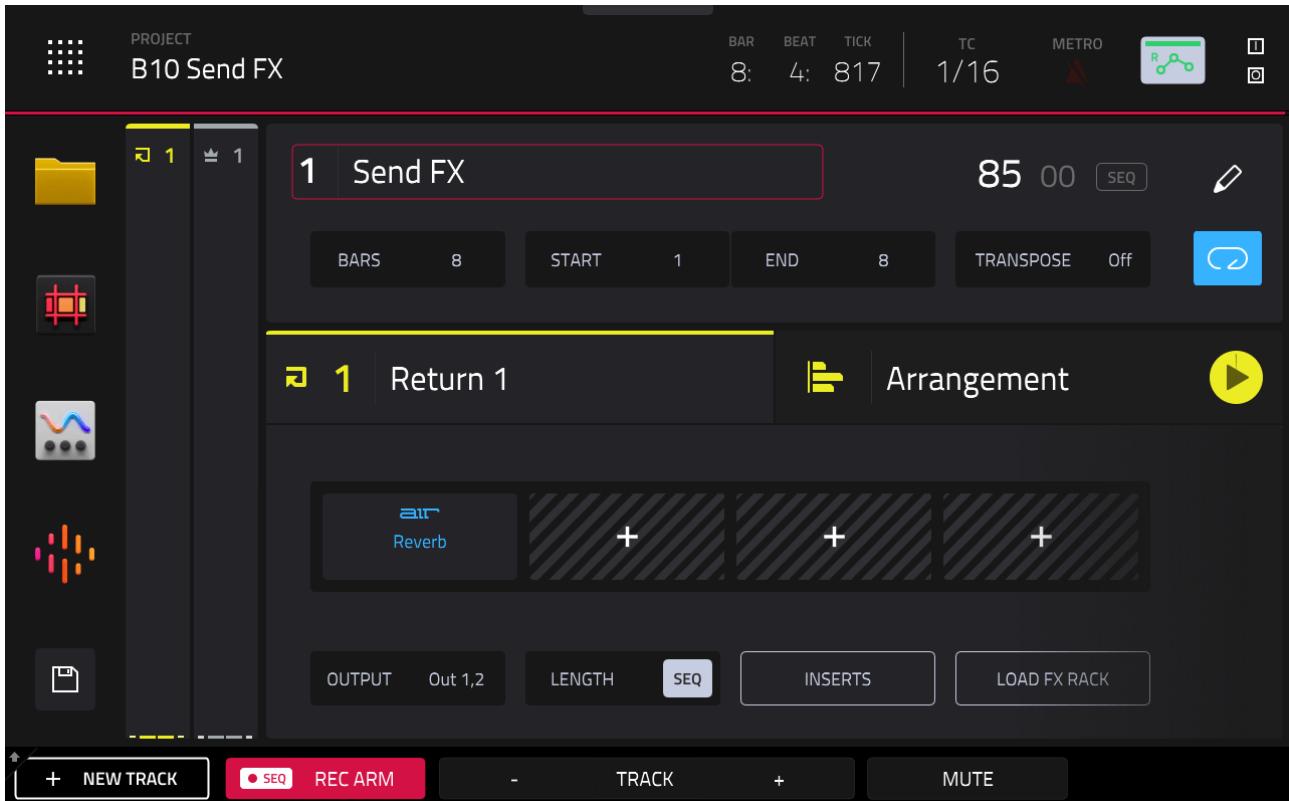
USING RETURN TRACKS

From the chapter **B10** folder, load up the project file **B10 Send FX.xpj**.

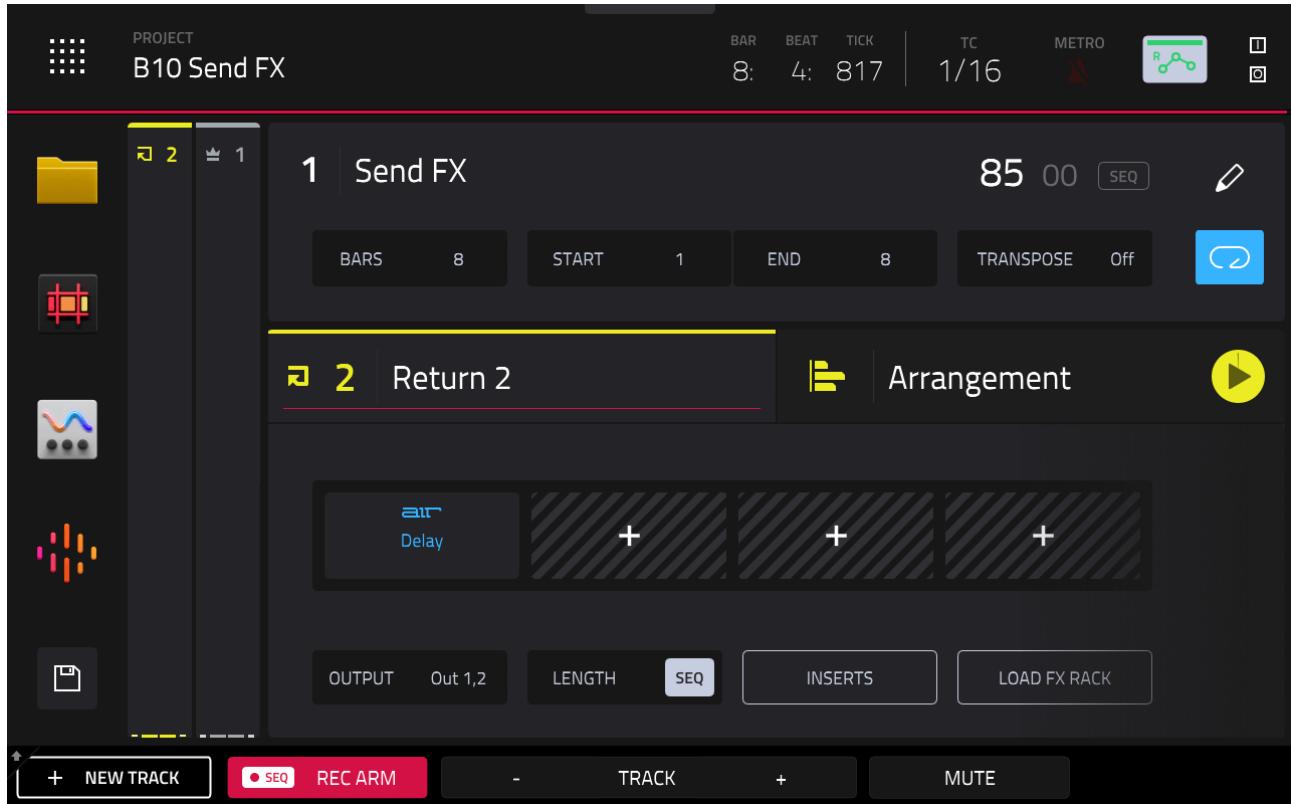
A project contains four dedicated return tracks. A quick way to find these is to hold down the [**MAIN**] button and press **RETURNS**:



With the **SELECT TRACK** screen still enabled, tap on **RETURN 1** or press pad **[A01]** and release **[MAIN]**:

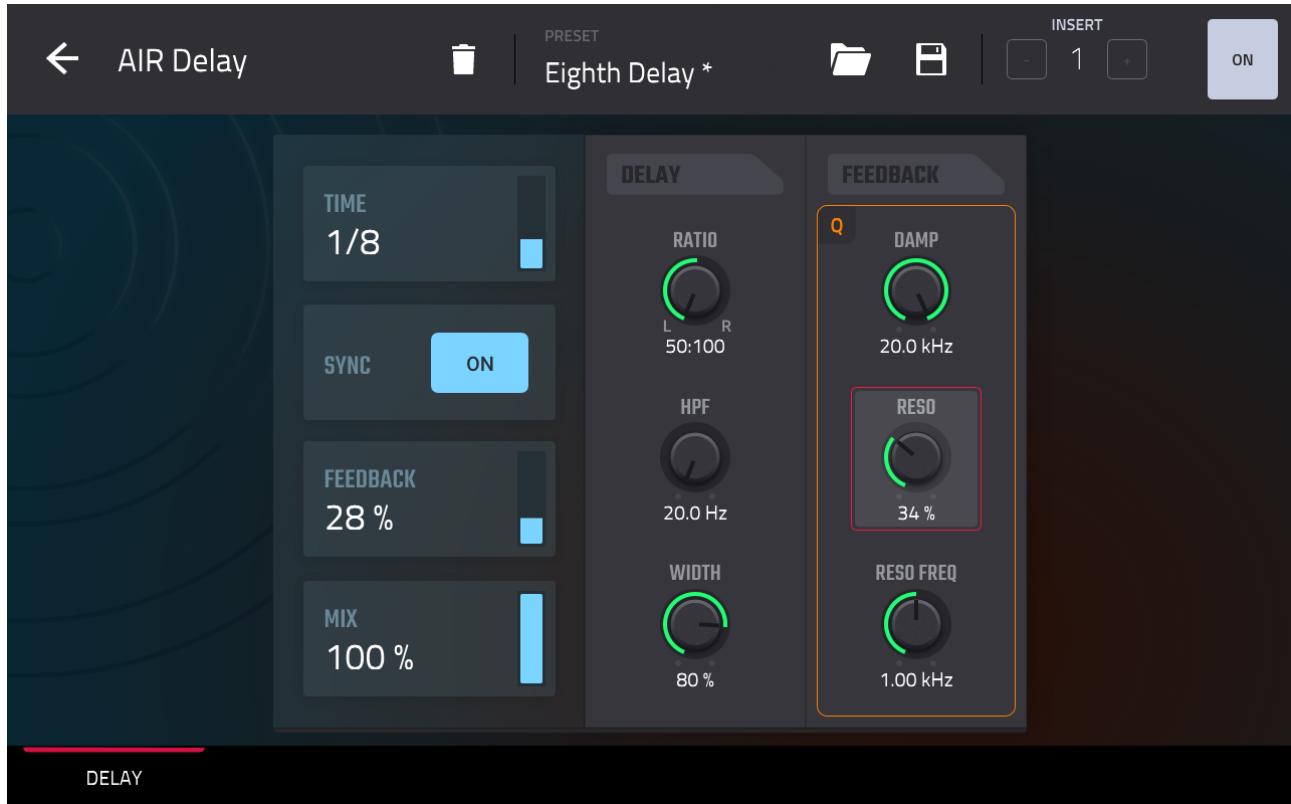


Unless you have changed the default project template, you should find that RETURN 1 already has an instance of **AIR Reverb** assigned – there's also the option to add another three FX plugins if required. Tap on the **Return 1 track name** and press the **[+]** button to select **RETURN 2** (or use the **[MAIN]** button > **RETURN 2** shortcut as before):



As you can see, **RETURN 2** has an instance of **AIR Delay** already assigned; we can of course change this to any of the other reverb/delay plugins, but this is fine for our current use.

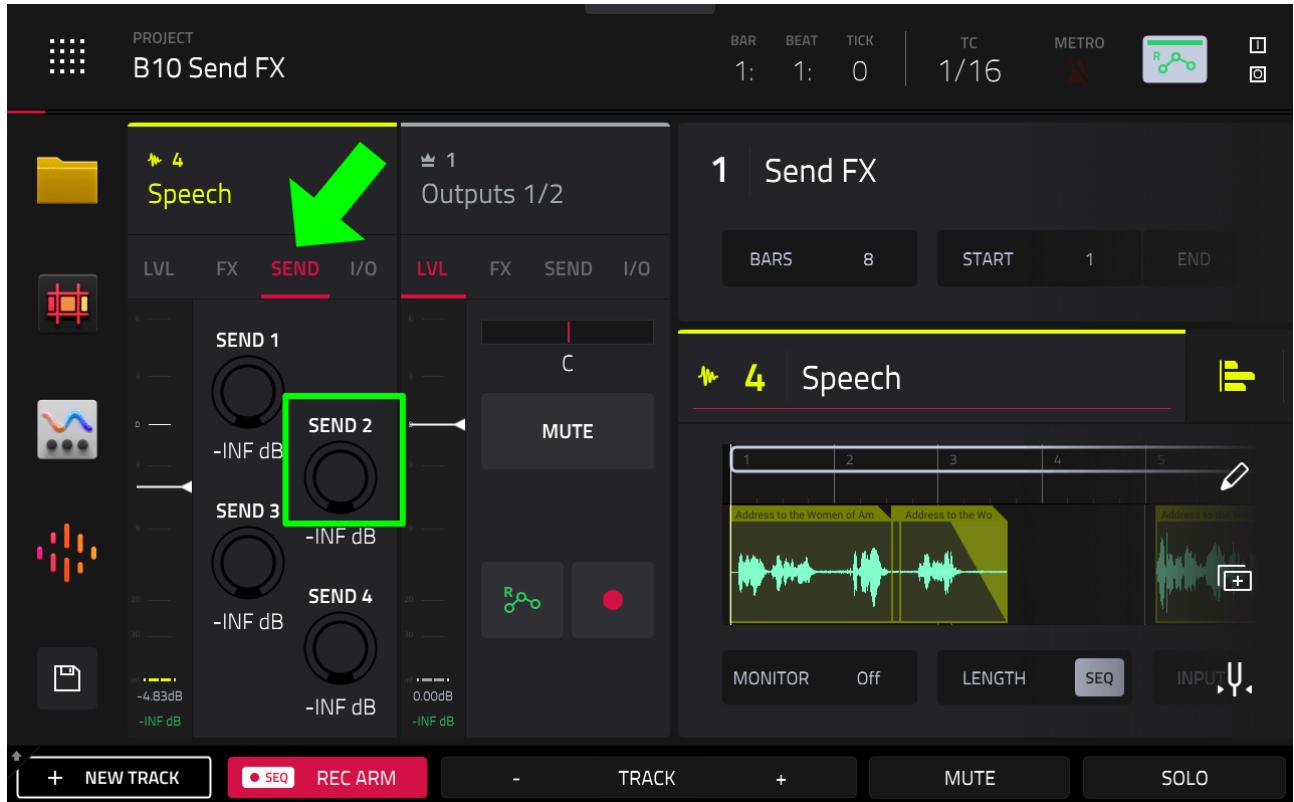
Tap on the **AIR Delay** box to bring up the delay settings. Single tap the **PRESET** box and select the **Eighth Delay** preset – set it up as follows:



With a return track it's normal to set the **MIX** of our effect to **100%** wet – I'll explain why soon.

Return to **[MAIN]** and head back to our '**Speech**' audio track – to do this, either tap on Return 2 and turn the (DATA WHEEL) anticlockwise until track 4 is selected or hold down **[MAIN]** > **TRACKS** > **[A04]**.

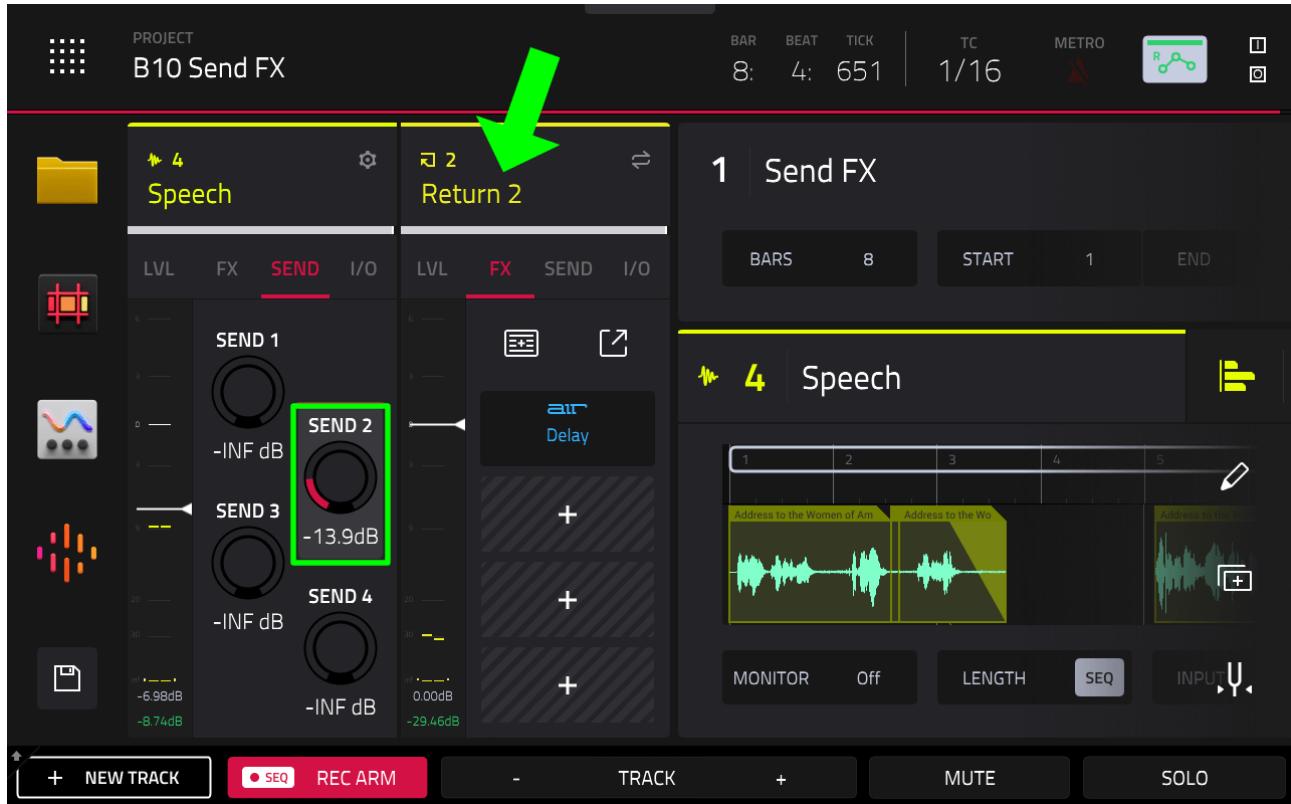
Expand the **XL Channel Strips** and tap on the **SEND** tab on our **Speech** audio track channel strip:



Here you can see four SEND dials. **SEND 2** controls the amount of dry signal that is sent from the **Speech** audio track to **RETURN 2** for processing with the delay FX. With the SEND set to 0, no dry signal is sent for FX processing and hence our audio track remains completely 'dry' with no delay.

However, as we increase the SEND value, more 'dry' signal is going to be sent to the return track and hence more effected signal is going to be returned back and hence the more delay will be applied to our track.

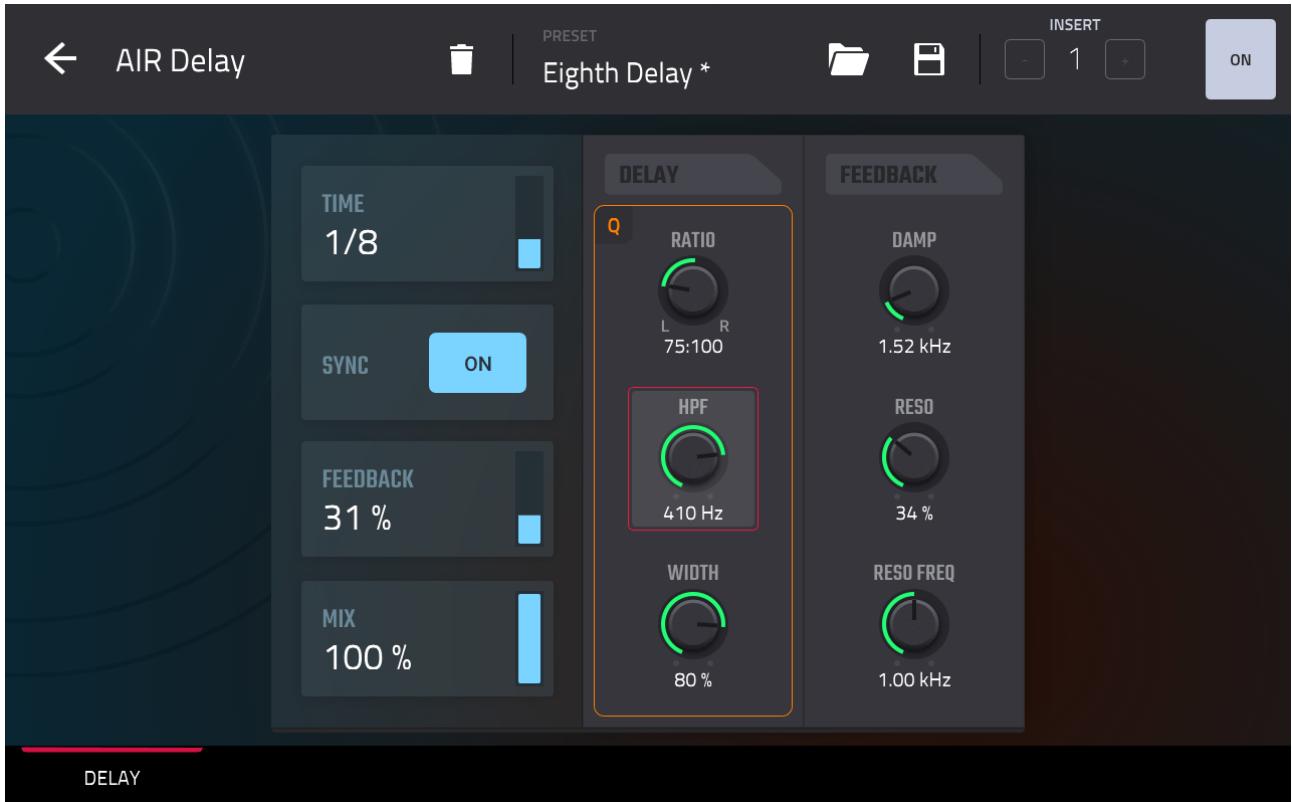
Press the **SOLO** button to isolate the speech track. Hit [**PLAY START**] and begin turning **SEND 2** and you'll hear increasing amounts of delay on our audio. Try a **SEND 2** value of **-13.9dB**.



Hit [PLAY START] to hear how the delay adds some ambience to speech track, although the delay settings themselves could do with a little tweaking.

Notice that with SEND 2 selected, the second XL Channel strip intelligently switches to show the channel strip for the **RETURN 2** track. This is a great time-saving feature as there's no need to manually navigate back and forth to the returns track, everything you need to manage the Send/Return loop is there within the XL Channel Strips.

To tweak the delay on the return track, make sure the FX tab is open in the Return 2 channel strip and tap on **AIR Delay** to open the settings.



I changed the **feedback damping (DAMP)** to reduce some of the higher frequencies heard in the decay, and used the **HPF** (high pass filter) to take out some of the low end of the delay. Finally I changed the **RATIO** to place the delayed signal **75%** to the left. I then went back to the Speech channel strip and re-tweaked the **LVL** to **-14.6dB**.

Tap and hold on the **AIR DELAY** box in **Return 2** to temporarily bypass the delay to compare the 'wet' and 'dry' versions of the track.

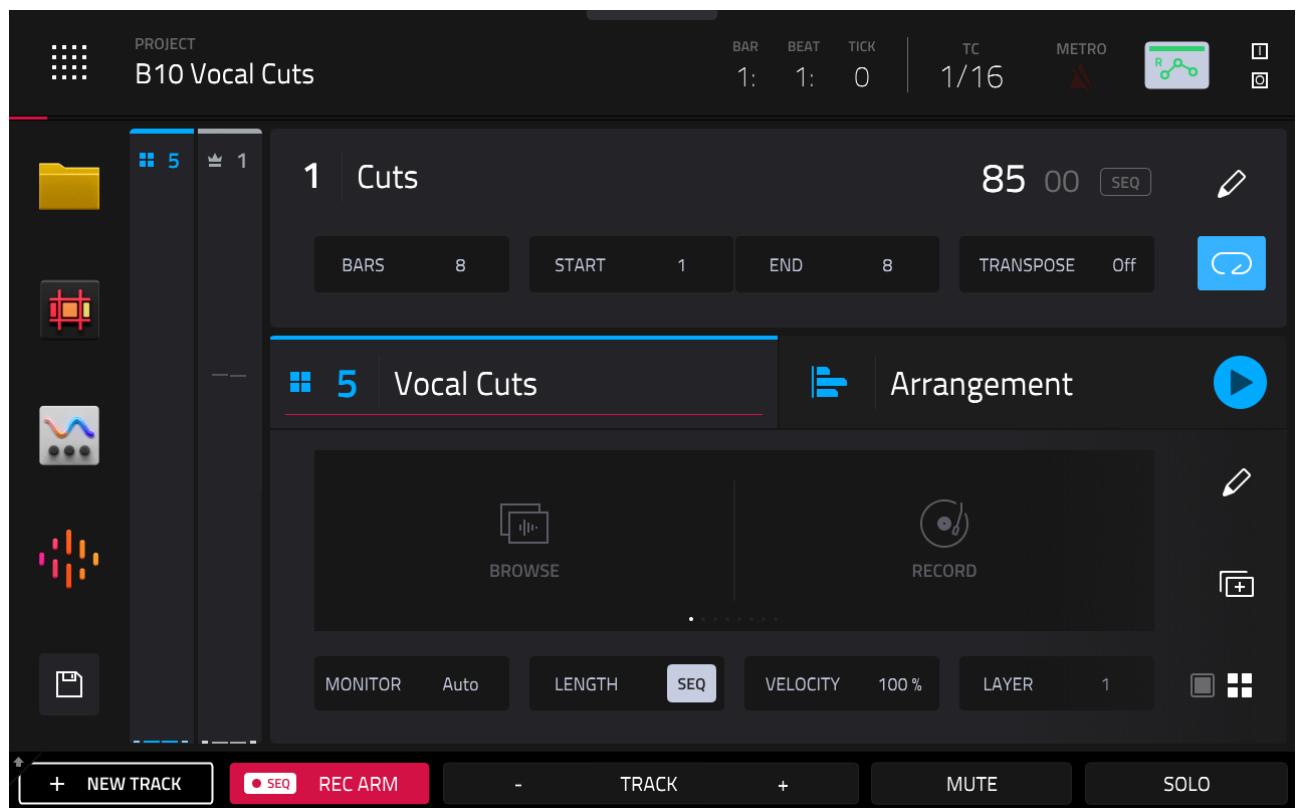
Using the XL Channel strips you can easily keep switching back and forth until you have the delay settings you need. You will of course continue to tweak as the song develops!

Load up my version so far; **B10 Send FX Added.xpj**

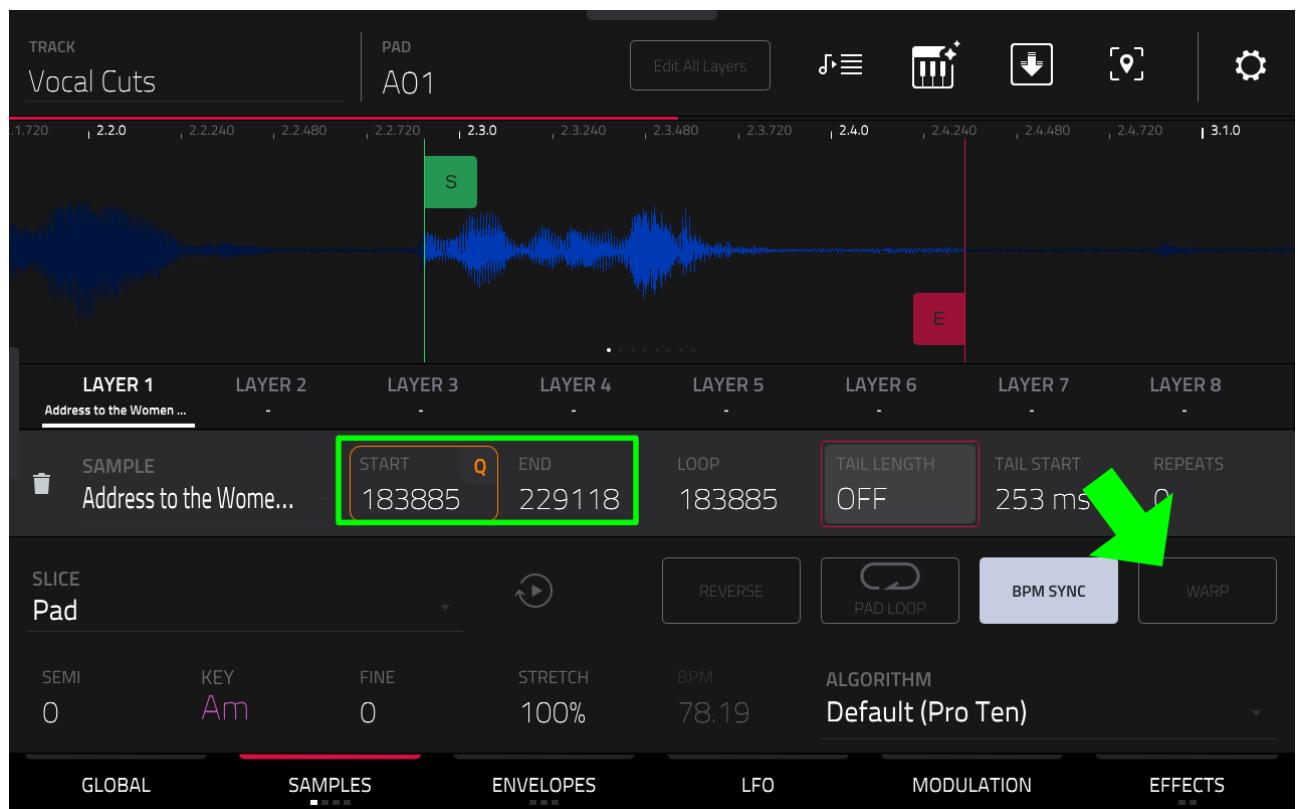
ADDING VOCAL CUTS

Currently there's a section of dead space in the vocal but we can get a bit more creative here and fill it with some additional vocal cuts and a healthy smattering of FX and automation.

With our Speech audio track selected, hit **+ NEW TRACK** and create a new **DRUM** track. Tap and hold down on the default track name and rename our track **Vocal Cuts**.

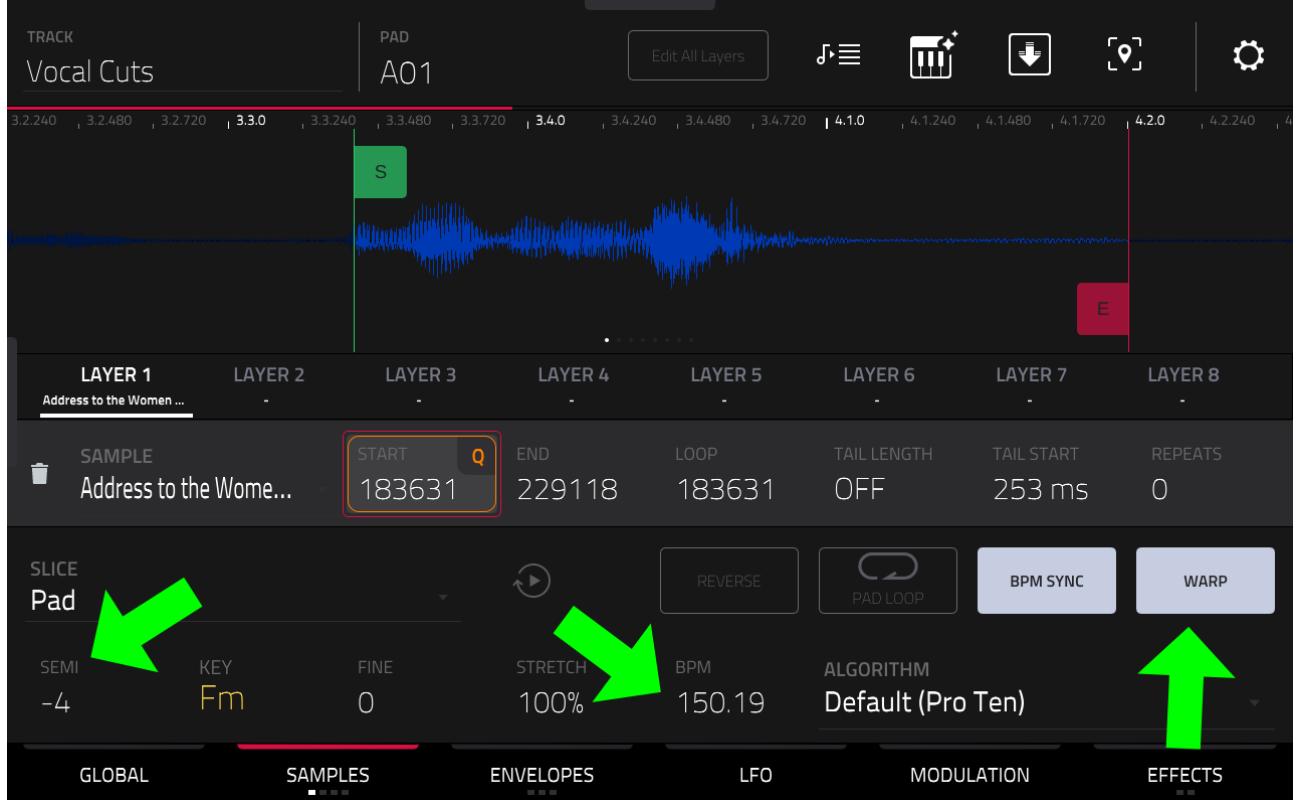


Go to **TRACK EDIT > SAMPLES**, hit pad **[A01]** and assign the existing **Address to the Women of America** sample to **LAYER 1**. Adjust the START and END points to isolate the words "a revolution", with a **START: 183885** and an **END: 229118**:



Let's start filling that gap with this sample. Now, remember how our audio track was 'warped' so we could independently manipulate the speed and pitch of our audio? Well we can do this in TRACK EDIT as well – hit the **WARP** button and increase the BPM parameter to slow down our vocal cut – try a **BPM of 150.19**.

Now let's turn our female vocal into a male vocal; set **SEMI** to **-4** to drop the pitch to a deeper, more male-like voice. And as WARP is enabled, the length of the sample remains the same:



Let's add some delay to this male voice. Head back to [MAIN] and expand the **XL Channel Strip** for our **Vocal Cuts** track. Select the **SEND** tab and start to increase the **SEND 2** value. Remember, this will 'send' our dry audio to RETURN 2 where it will be drenched in delay and sent back to the track.

Previously we set this to around -14dB for some reasonably subtle delay, but this time I want to add even more delay to this vocal cut. This is going to help put this cut further back in the mix. Set **SEND 2** to **-2.96dB** and hit pad **[A01]** to preview it.

INSERTING THE FIRST VOCAL CUT EVENT

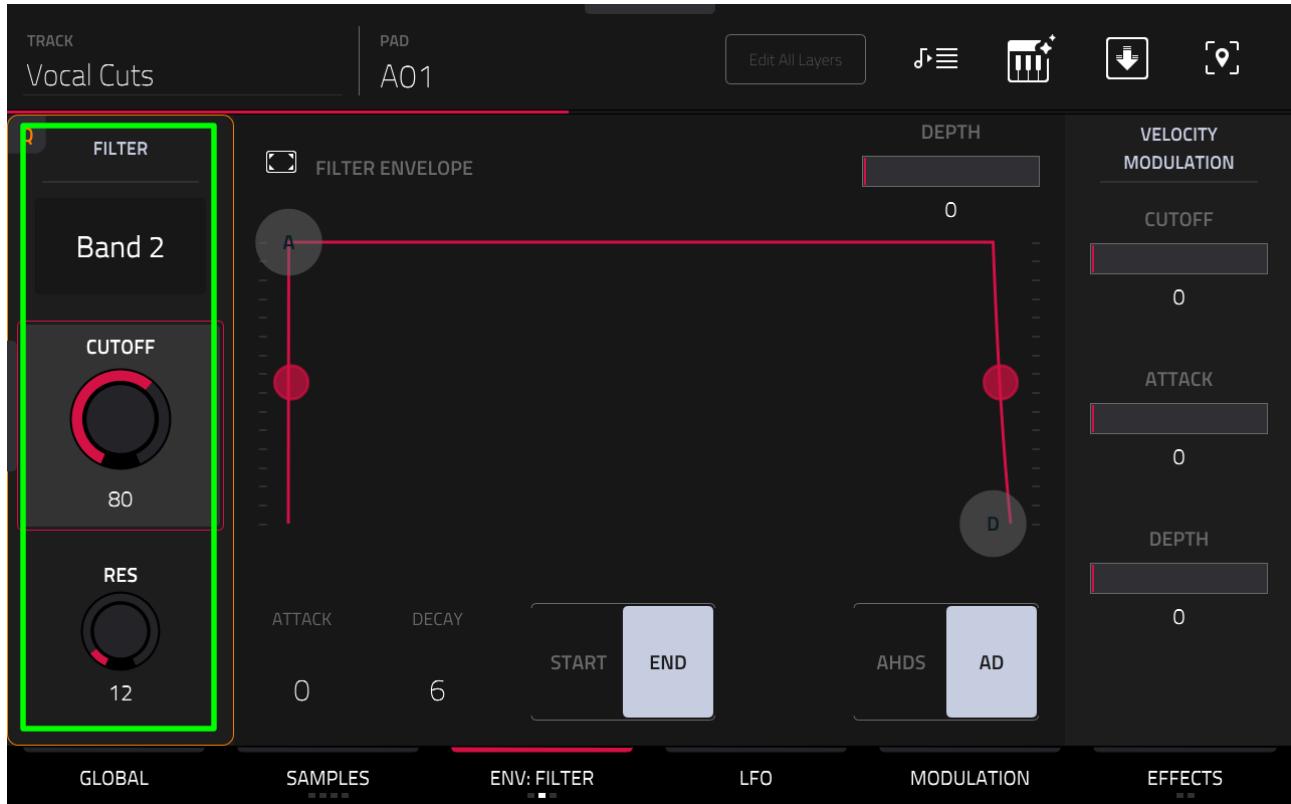
Before we tweak further, let's put this vocal cut into our sequence. I want it to come just after the female 'a revolution', and naturally also to be 'in time' with the sequence.

It can be a little tricky getting these types of vocal cuts to play from the perfect position, so generally speaking I like to record these kind of events in real time and then, if required, use either GRID VIEW or LIST EDIT to 'nudge' it until it plays back from the perfect position using the 'NUDGE' function we've already met in previous chapters.

Using whichever method you prefer, place the [A01] vocal cut at **003:02:245**. Hit **[PLAY START]** to hear the vocal cut in action.

USING THE FILTER TO CREATE A RADIO EFFECT

To give this vocal cut a more interesting 'distant' sound we can use a band pass filter to remove both high and low frequencies. With pad **[A01]** selected, hit the **ENVELOPES** button twice to enter the **ENV: FILTER** screen. Select a **Band 2** type filter:



Try a **CUTOFF** of **80** to strip out a fair portion of the lower frequencies while maintaining some of the high-to-mid frequencies. A **RES** of **12** attenuates the sound at the cutoff frequency to produce a more intense, 'shrill' effect.

Hit pad [**A01**] to hear the filter in action, and [**PLAY START**] to hear it alongside all the elements in sequence.

Hold down [**SHIFT**] and hit **ENV:FILTER** to go back to the **ENV:AMP** page and tweak the pad volume so the vocal cut sits nicely in the mix at around **-4.36 dB**. Use the pad **PAN** dial to set the vocal cut fairly strongly on the left side of the stereo field, try a setting of **-32**.

CREATING A CUT WITH MIDI DELAY

Make a copy of pad [A01] to [A02] using the physical [COPY] button method described previously in the course. In **TRACK EDIT > SAMPLES** set the **SEMI** for this second version of the cut to **-2**, giving up a slightly different pitched vocal.

Now change the start point of this layer so we lose the 'a', so the cut now only says 'revolution'. Try a **START** of **186797**:



Go to **GLOBAL** and set the panning for pad [A02] to **+42**; now the two 'male' vocal cuts have opposing panning:



Rather than just adding a single event for this cut, let's create a 'MIDI delay' which is simply a delay effect using the sequencer. First in **TRACK EDIT > GLOBAL**, set pad **POLY** to **Poly**, this way our MIDI delay events will not cancel each other out monophonically.

Now head over to **LIST EDIT** and insert three **[A02]** event into the sequencer at **004: 02: 480, 004: 03:240** and **004:04:000**

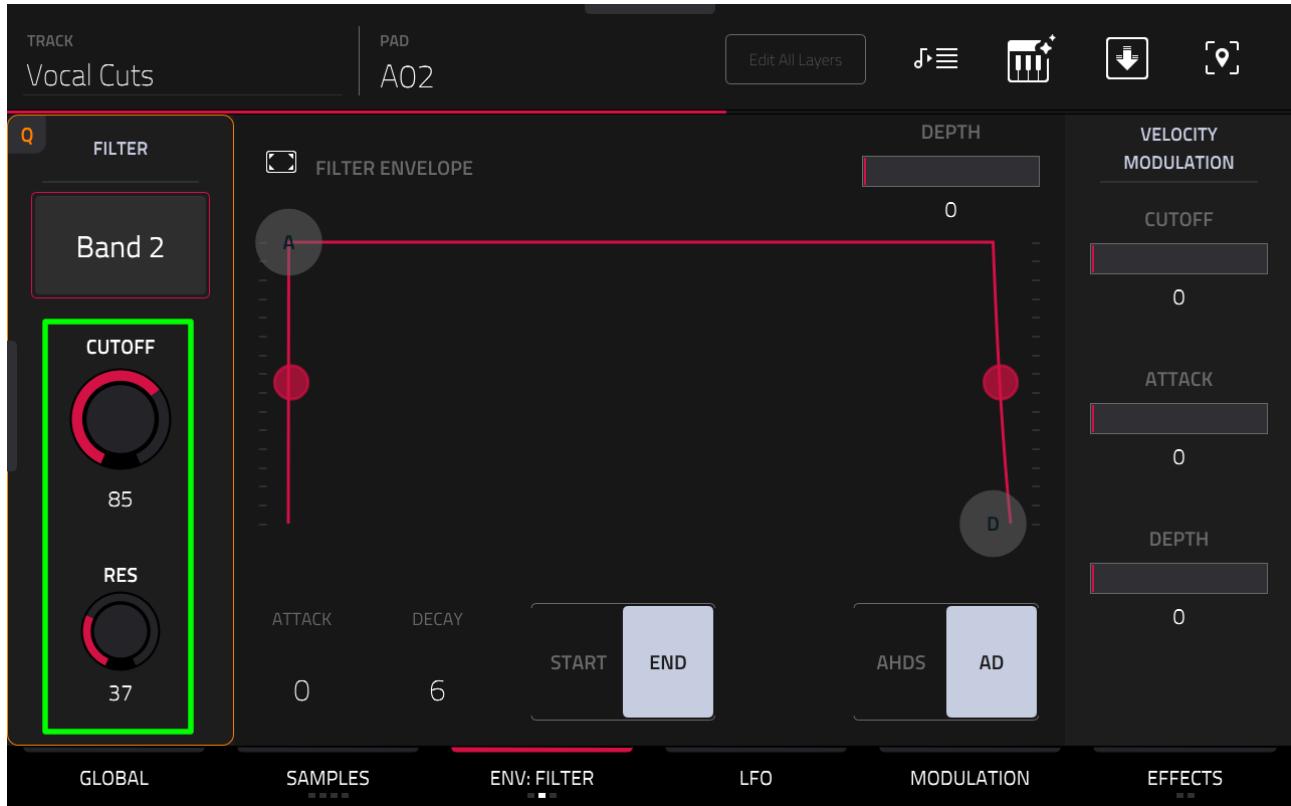
#	TIME	PAD/NOTE	LENGTH	VELOCITY	MOD TYPE	VALUE	PROB	RAT
1	003:02:245	A01 (36)	83	127	Tuning (coarse)	-	100%	-
2	004:02:480	A02 (37)	59	127	Tuning (coarse)	-	100%	-
3	004:03:240	A02 (37)	59	90	Tuning (coarse)	-	100%	-
4	004:04:000	A02 (37)	79	65	Tuning (coarse)	-	100%	-

(end of events)

EVENTS TEMPO INSERT DELETE ► NUDGE

When emulating a delay we need to gradually decrease the velocity of each event, so set the velocities to **127, 90, 65**, as shown above. The MIDI delay enhances the existing delay already present on the DRUM track via SEND 2. There's no magical equation to this, just try different decreasing values and see what works best.

After re-listening to the sequence I think this second cut needs to be slightly more differentiated compared to the [A01] cut, so head back to **TRACK EDIT > ENV: FILTER** and increase both the **CUTOFF** and **RES** of the filter to make it sound even more distant and shrill:

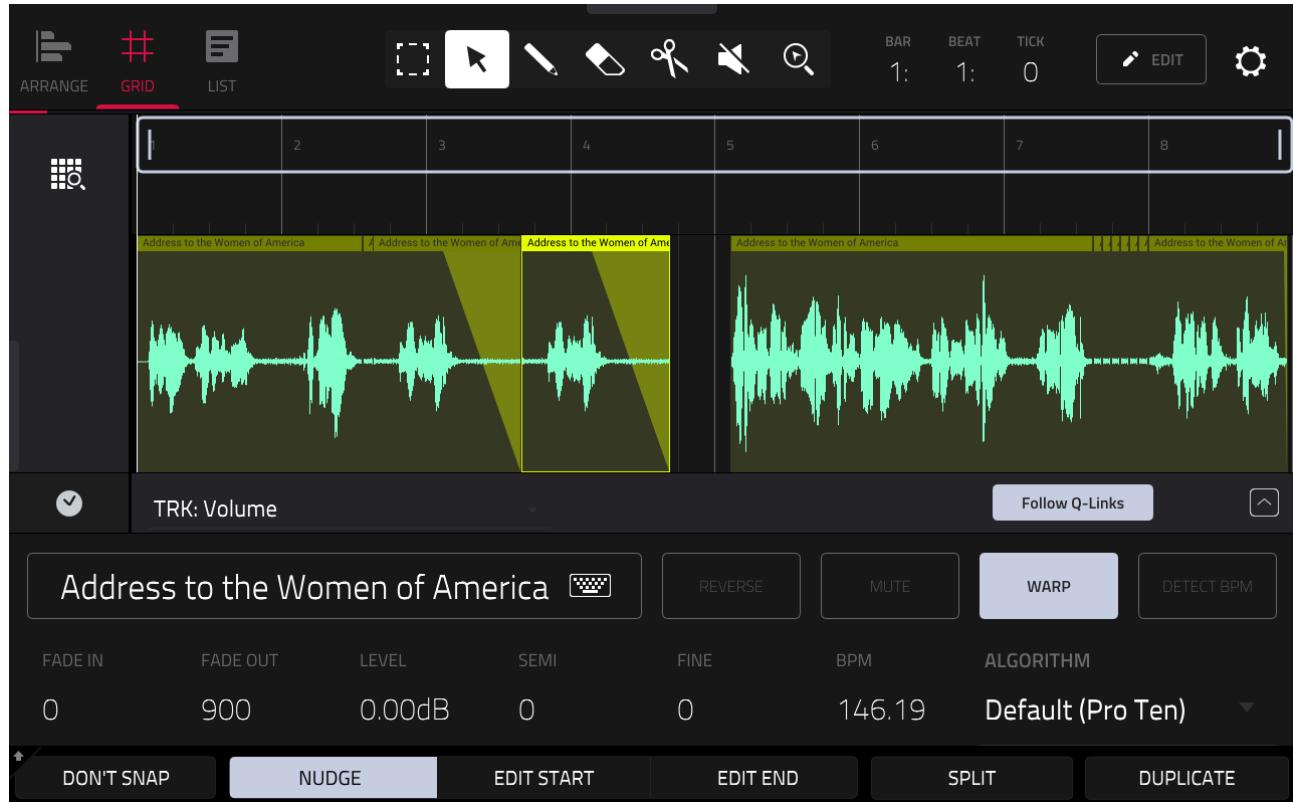


This has increased the loudness of this pad, so hit [**SHIFT**] & **ENV:FILTER** and adjust the pad level to compensate.

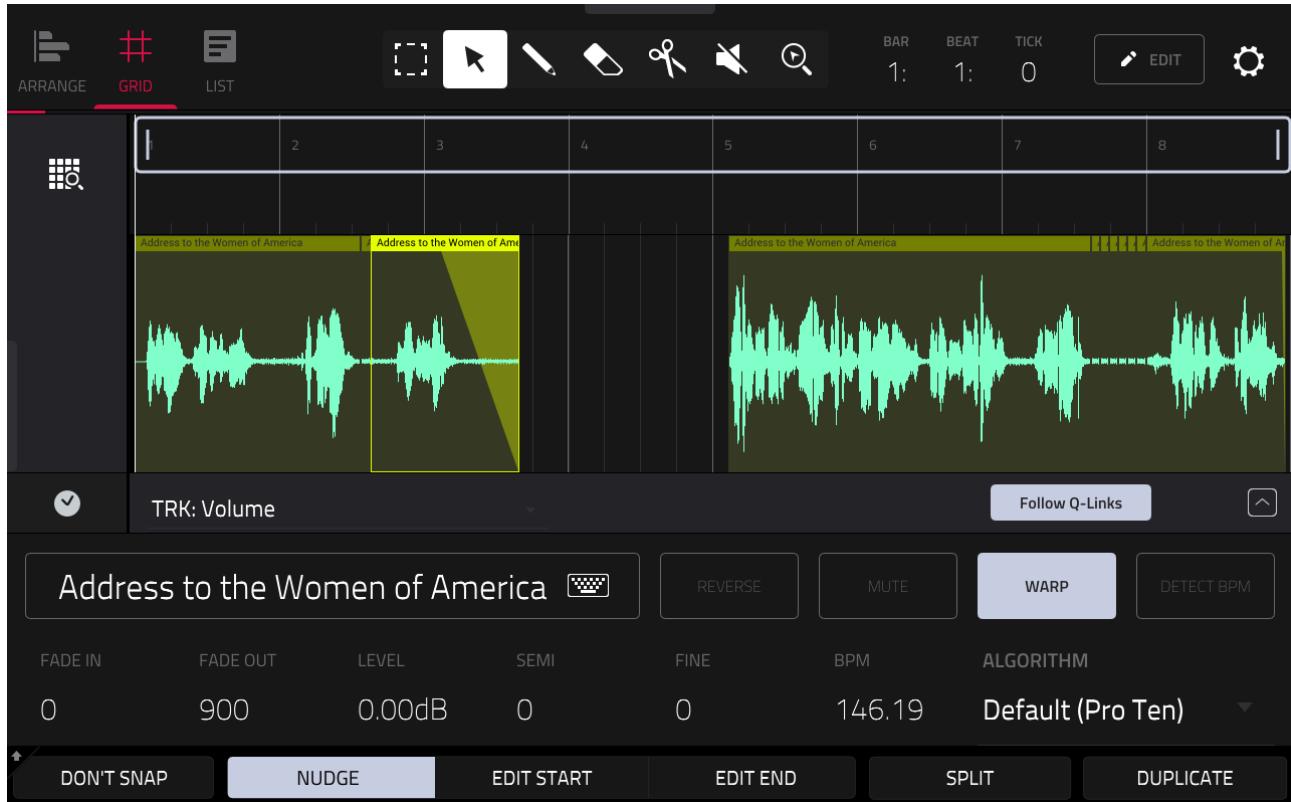
Hit [**PLAY START**]. Load up the project file **B10 Vocal Cuts.xpj** from the **B10** folder to hear my version of everything so far.

USING AUTOMATED FX

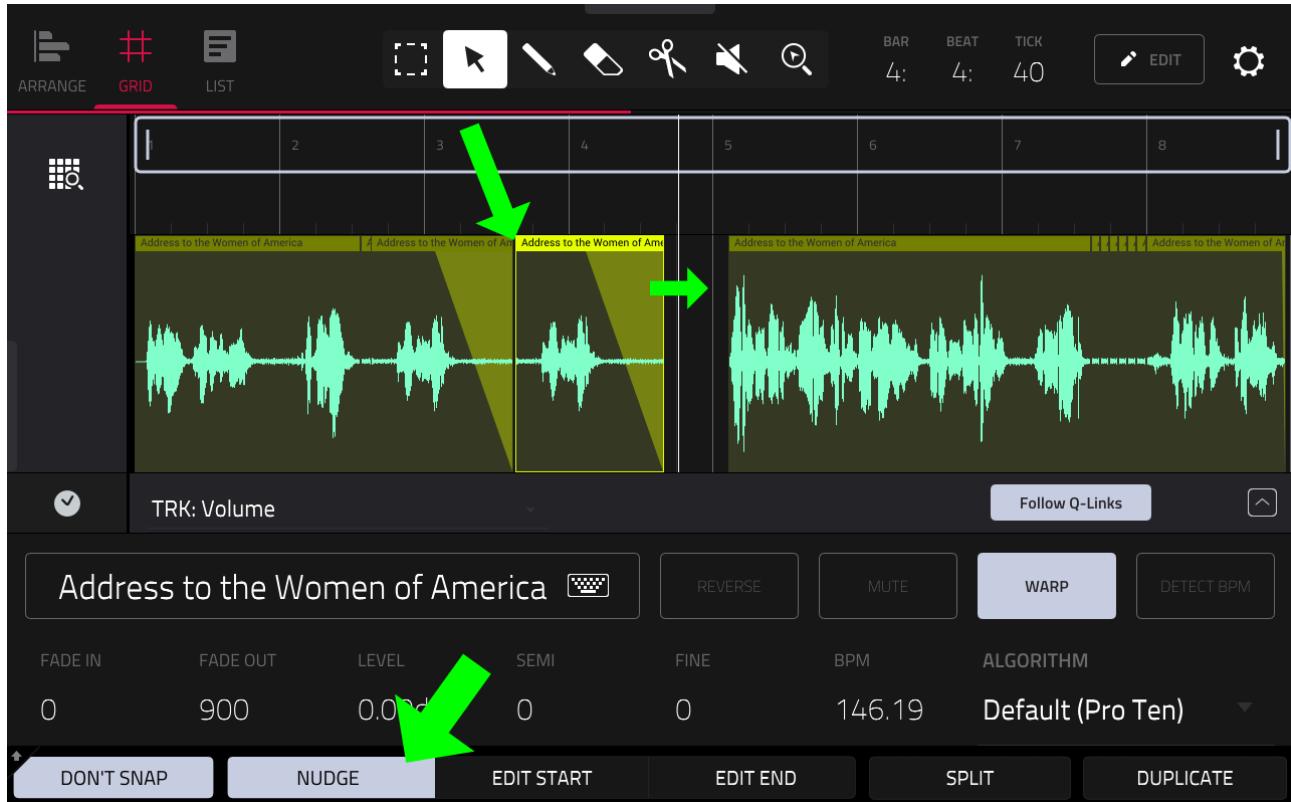
Select the audio **track 5, Speech**. Let's create a new 'cut' directly within the audio track itself. From [**MAIN**], double tap the waveform to take you to the **EDIT AUDIO** screen. Use the **SELECT tool** to select the second audio region:



Now hit **DUPLICATE** to place a copy of region 2 immediately after region 2:



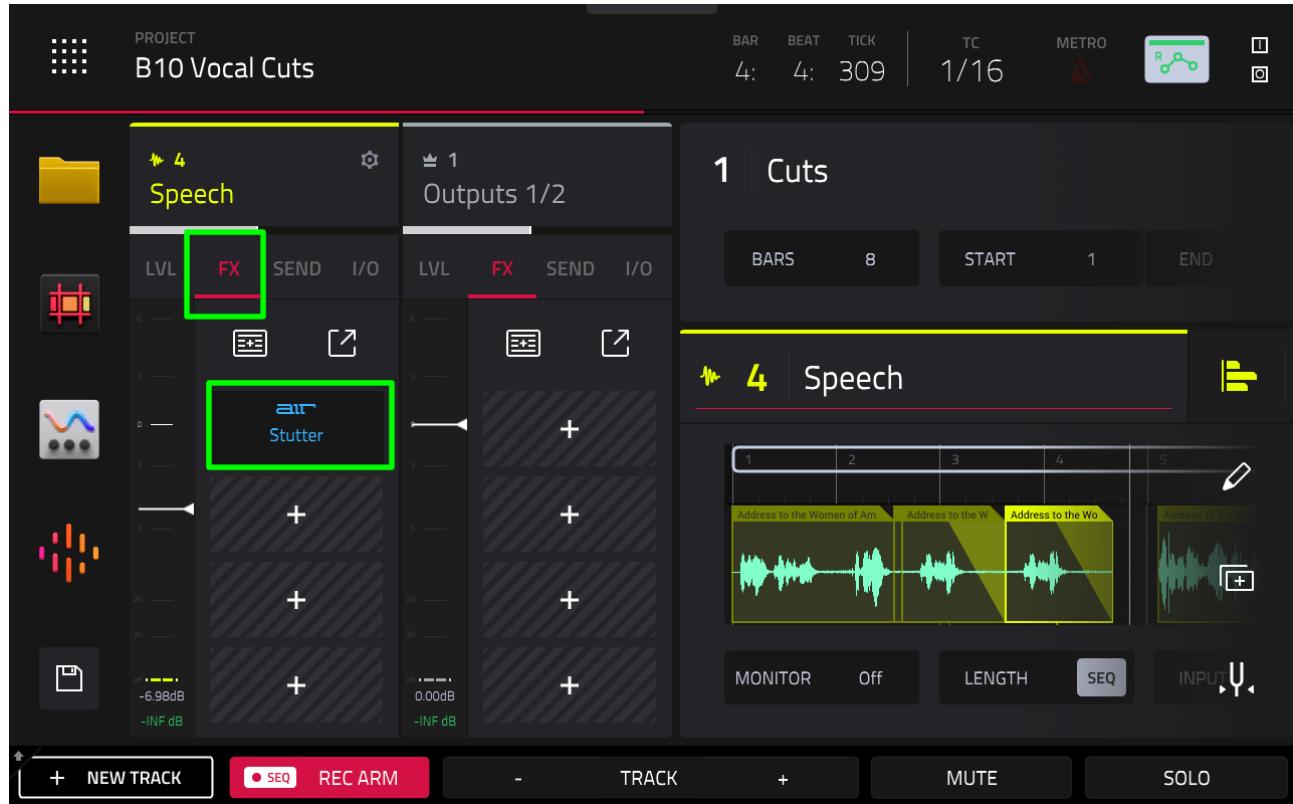
We now need to move this duplicate region so it is in time with the sequence; it should need too much moving, so tap on **DONT SNAP**, then hit **NUDGE** and turn the (DATA WHEEL). The exact position will depend on the exact 'slice' point you set when creating this region in the previous chapter, so it will likely be a little different to my version:



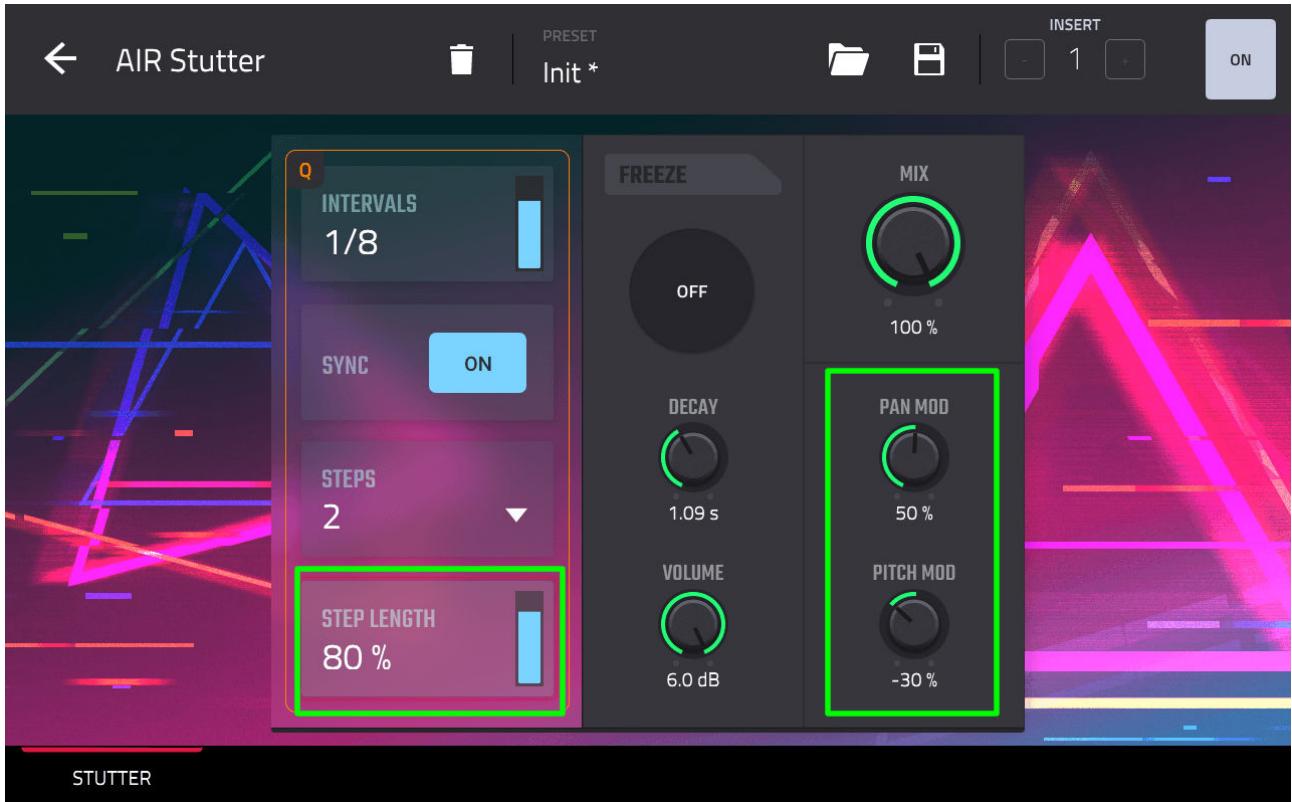
Hit [PLAY START]. It's starting to fill the gap nicely, but let's make this female vocal cut a little more interesting.

ADDING A STUTTER EFFECT AS A TRACK INSERT

Go to [MAIN], expand the **XL Channel Strips** and select the **FX** tab for the Speech audio track. The FX plugins you add here will be applied across the entire track, and are often referred to as 'Track Insert FX'. Hit the top **+** button and select an instance of **Modulation > AIR Stutter**.



Single tap the **AIR Stutter** icon to bring up the FX settings:



AIR Stutter literally lives up to its name and creates a 'stuttering' effect on your audio. Press **[PLAY START]** to hear the default stuttering effect – now start messing with the parameters to see how it affects the audio.

With **SYNC** turned on the stutters will be in time with the tempo of your sequence. The **INTERVALS** setting controls the timing of the stutters. The **STEPS** setting controls how many stutters will occur within each step; the higher the setting, the more 'metallic' the effect, almost like the time stretch on an old school sampler.

STEP LENGTH controls how long the audio in each stutter lasts for. To create a short 'choppy' effect, set this quite low.

The **PAN MOD** control lets us ping pong the stutter between the left and right channels of the stereo field, the higher this is set, the more extreme the panning. The **PITCH MOD** allows us to increase or decrease the pitch of the additional stutters.

I'm going to keep it fairly close to the **INIT** preset, but with a good amount of **PAN MOD**, a **80% STEP LENGTH**, and a very slight negative **PITCH MOD**.

Now I have no interest in this effect being applied to the entire audio track, instead I just want it applied specifically to the '*revolution*' vocal cut we just created. We can achieve this using **automation**.

WHAT IS AUTOMATION?

We're familiar with the concept of recording MIDI note events into the MPC sequencer, but it's also possible to record other types of events beyond 'standard' MIDI information.

Automation is a way of recording **real time** changes to a range of project parameters; for example, automation can record real time changes in mixer settings such as a gradual drop in track volume over time, or a slow change of panning from left to right of the stereo field. It can record changes to settings within an FX plugin (e.g. a gradual filter sweep in the AIR Filter plugin), or changes to the parameters in 'TRACK EDIT' (e.g. real time changes to sample layer tuning).

A very simple example of automation would be the recording of an effect plugin being turned 'on' and 'off', so let's use automation to only turn on the AIR Stutter effect when the '*revolution*' vocal cut plays – this way the rest of the speech remains 'un-effected' by AIR Stutter.

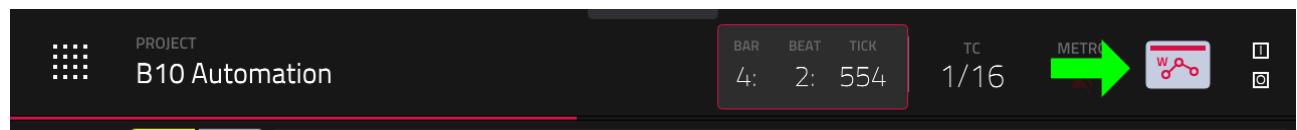
Now, so far I've used the phrase 'recording automation' but strictly speaking we do not actually 'record' automation events, we **write** them to our sequencer. So the first thing we need to do is activate automation 'writing'.

By default, an MPC project is set to only 'read' automation events. If the MPC detects pre-recorded automation events in a sequence it will apply the recorded automation to the relevant project parameters. Some MPC models have a dedicated [**AUTOMATION**] button that can be used to switch between 'READ' and 'WRITE' modes. Alternatively, it's possible to turn on automation writing from within the software itself.

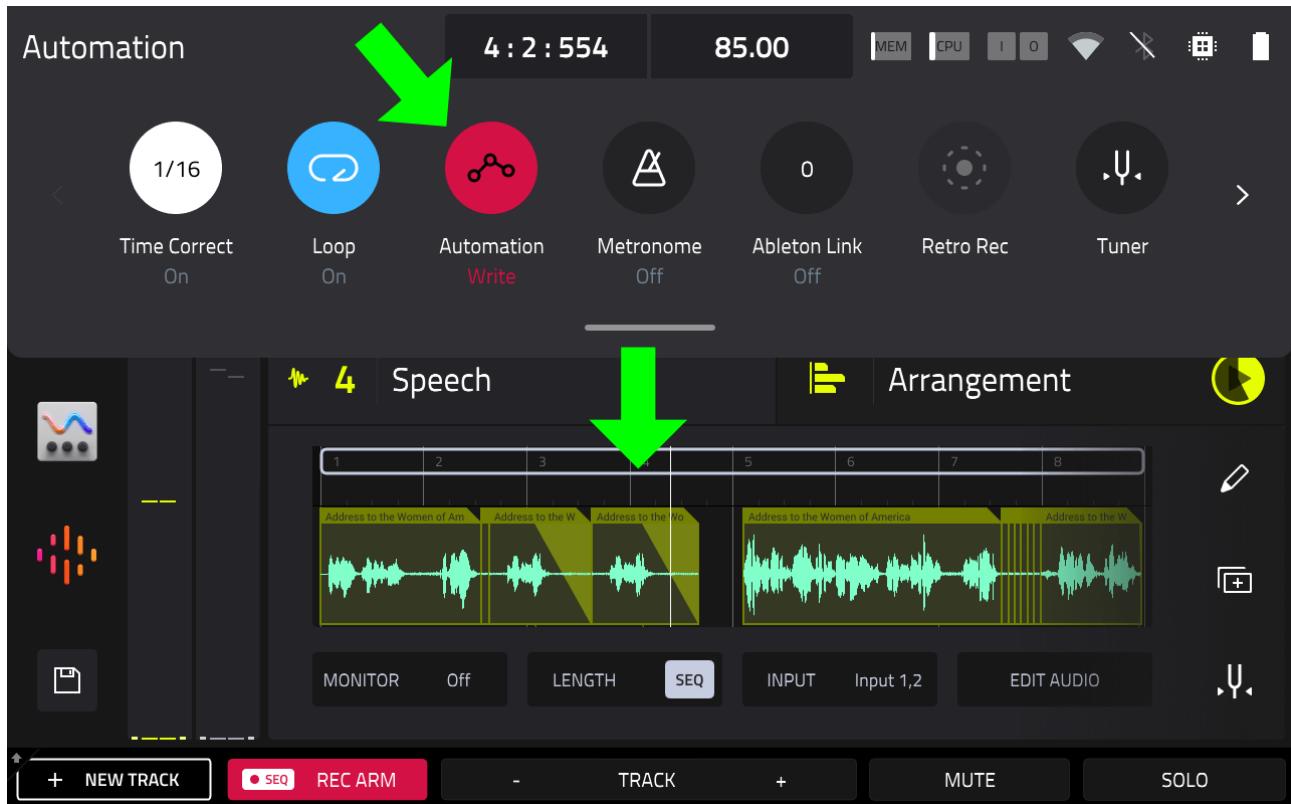
One way is using the **AUTOMATION** icon in the top right of the screen in **[MAIN]**:



Tap this so it turns from a green 'R' to a red 'W':

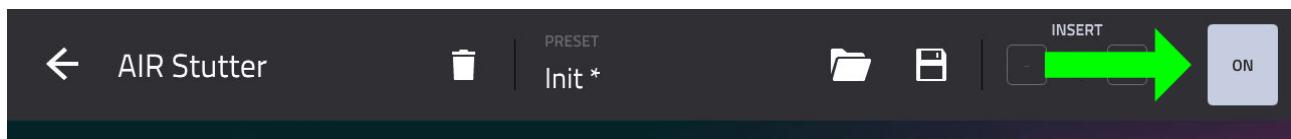


Alternatively, you can use the '**pull down**' menu from nearly all screens in the MPC:



To turn on automation writing, press this so it reads **Automation: Write**. With automation writing enabled we are now ready write some automation.

From the **XL Channel Strips**, tap on the **AIR Stutter** icon in the audio track channel strip so the AIR Stutter effect settings are on screen:



As you can see from the '**INSERT ENABLE**' button in the top right, this effect is, by default, set to **ON**. We want to start our sequence with the effect 'OFF' (or

at the very least, the effect should be 'OFF' when the vocals actually begin being audible (at around 1:1:360).

Unlike standard MIDI events, there is no need to use [OVERDUB] or [RECORD] to write automation, your sequence just needs to be playing and 'WRITE' enabled for all your parameter changes to be 'written' to the sequence.

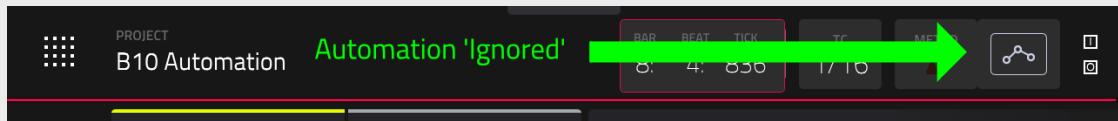
So, press [**PLAY START**] and immediately tap on the '**INSERT ENABLE**' button so it turns to '**OFF**' and the Stutter effect is therefore disabled. Let the sequence play and just before our '*Revolution*' vocal cut is about to play, tap on '**INSERT ENABLE**' so the effect is set to '**ON**' again. After the '*Revolution*' cut has finished playing, immediately tap on the **INSERT ENABLE** button again to disable the stutter effect.

Now, it's important to get into the habit of setting the MPC back into automation '**read mode**' whenever you have finished writing automation, otherwise you run the risk of inadvertently writing additional automation to the sequence should you ever tweak any other project parameters during playback. So tap on the **automation write button**, either from the pull down menu or from the top right icon in MAIN.

After setting automation back to 'read mode', hit [**PLAY START**] to hear our automated stutter effect. Load up the project file **B10 FX Automation.xpj** from the chapter **B10** folder to hear my version so far.

MUTING AUTOMATION

You can temporarily mute (ignore) any existing automation within your sequences by holding down **[SHIFT]** and tapping the automation button so it turns black with a white outline:

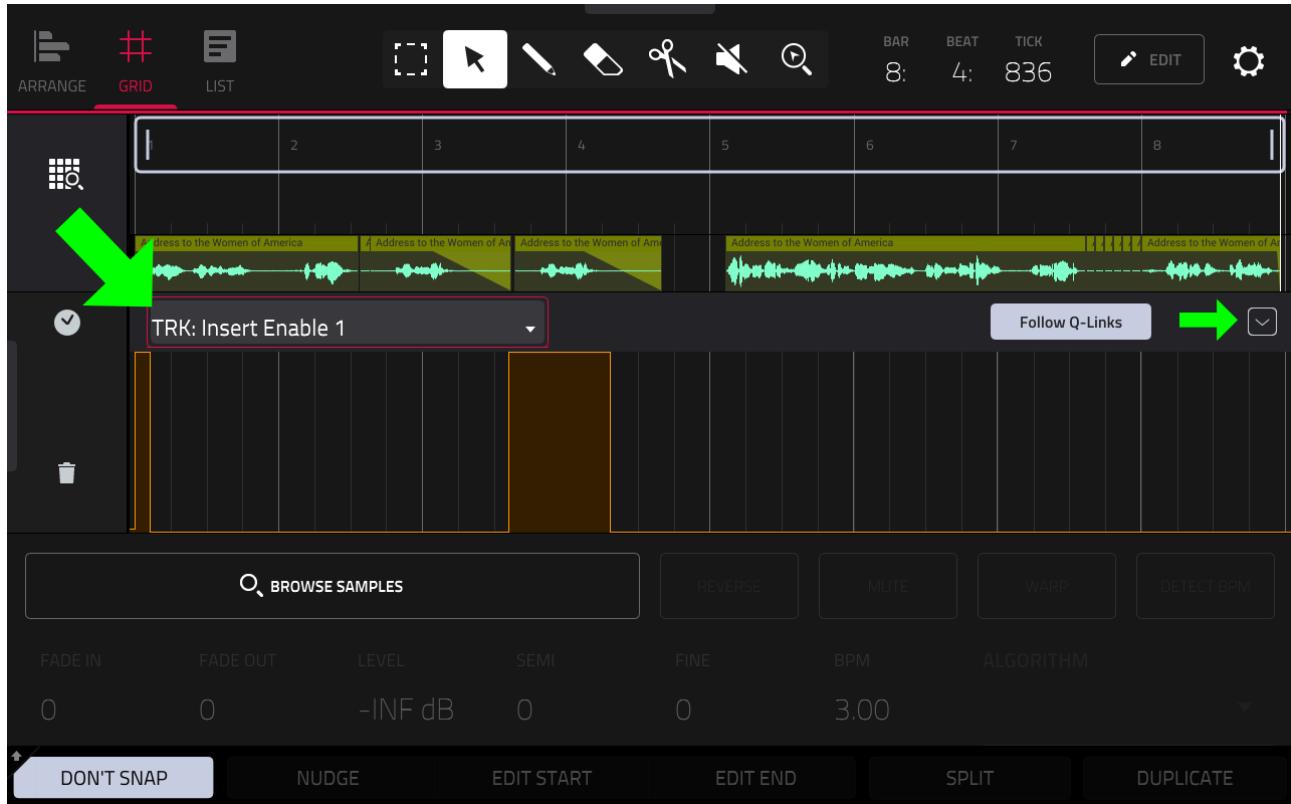


Repeat this procedure to re-enable automation playback.

VIEWING & EDITING AUDIO TRACK AUTOMATION

We'll later discover that automation data written to MIDI type tracks (DRUM, KEYGROUP, PLUGIN, MIDI) can be viewed in LIST EDIT mode. Unfortunately it's not currently possible to view audio track automation in this numerical way, but we are able to view (and edit) audio track automation in a more visual way.

Go to **GRID VIEW**, which as we've seen previously becomes '**EDIT AUDIO**' mode for audio tracks. Tap on the **upward arrow icon** to reveal the **velocity/automation lane** and change **TRK: Volume** to the **Insert Enable 1** lane:

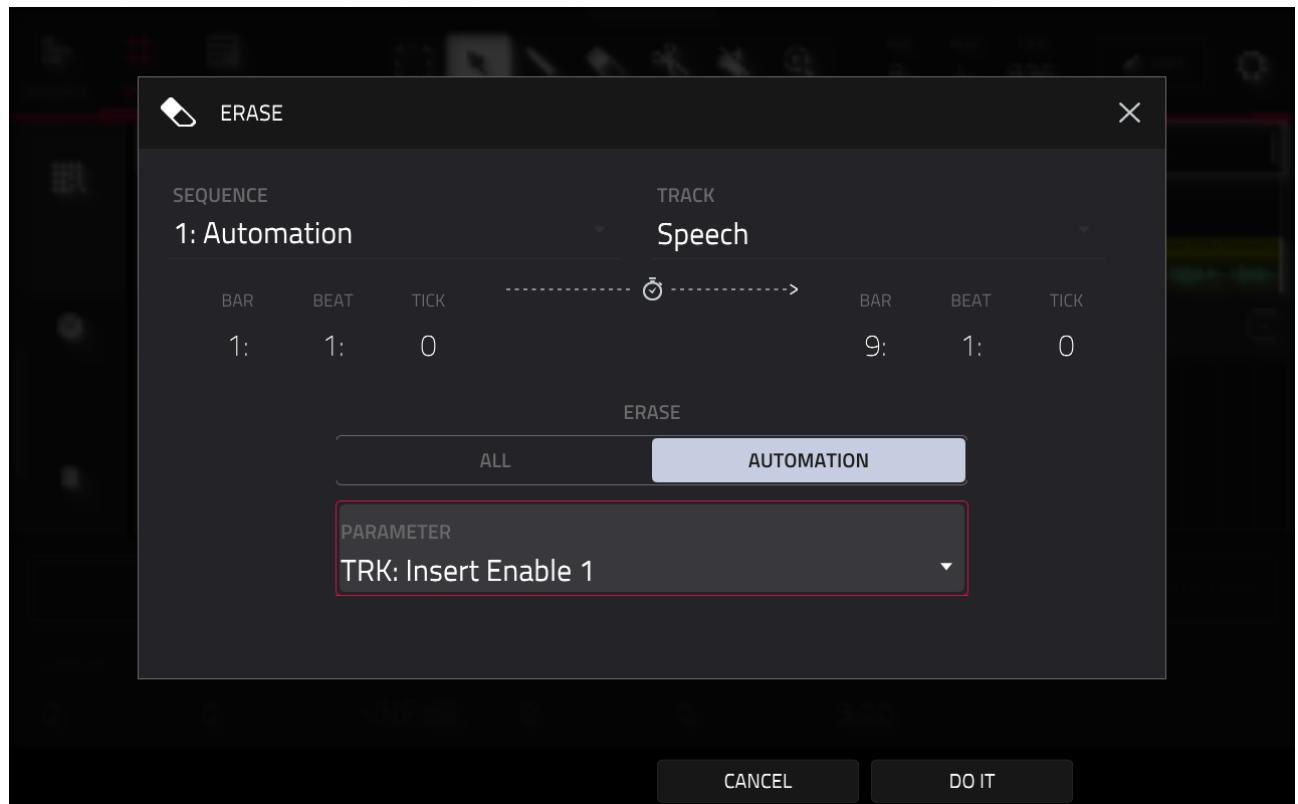


Here you can see the 'on/off' automation messages represented by the lines on the lane. It's a binary option (on or off), so if the line is at the bottom the plugin is 'off', if the line is at the top then the plugin is 'on'.

If you wish to change the position of any on/off setting, you can use the PENCIL tool to draw the automation to the lane and use the **ERASE tool** to erase automation data. I'm not going to lie, it's very fiddly to get right and UNDO is not particularly reliable.

If all else fails, select the ERASE tool, then hold and drag from far right to far left to erase all automation events (for this particular parameter only) and start again.

Another option is to press the physical [ERASE] button and select the **AUTOMATION** tab:



Under **PARAMETER**, select **Insert Enable 1**. Or if you want to erase all automation, just select **All**.

WHAT EXACTLY ARE WE WRITING?

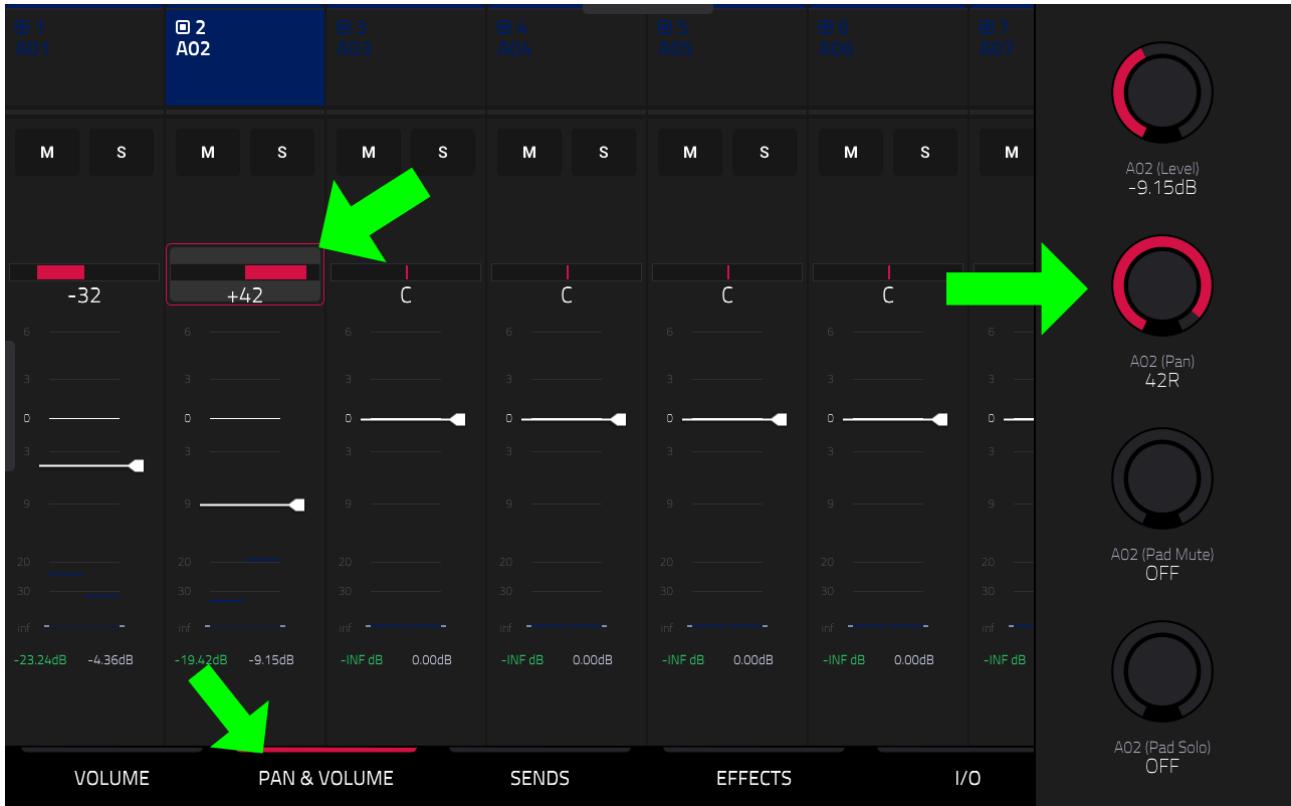
It's worth remembering that the only automation parameter that is written to the sequence is the *status* of INSERT ENABLE 1. The sequencer doesn't actually care which effect plugin is actually assigned to insert 1, it just knows that, whatever that effect may be (at

any given moment in time), it needs to be turned on or off at the relevant time locations in the sequence. So there's no problem changing the effect plugin at any point; the next plugin will be turned on and off by the automation events at exact the same times.

Equally it doesn't matter if we subsequently change any of the effect parameters we've configured in the Stutter plugin, so you are still free to tweak the Stutter effect parameters at any point (or select a completely different preset) and re-save the project; those will be the parameters that are now used in your beat. The only parameter that is currently 'dynamically' changed by the sequencer is the on/off status of the effect in insert slot 1 on this audio track.

ADDING PANNING AUTOMATION

Pad **[A02]** in our **Vocal Cuts** track was previously panned to the right using the pad mixer settings (via TRACK EDIT > GLOBAL). We can use automation to dynamically change the panning of this cut in real time. Go to **[MENU] > PAD MIXER > PAN & VOLUME** and tap on pad **[A02]** to select it:



In this screen, (Q-LINK 9) controls the pan for the currently selected pad.

From the top pull down menu, set **AUTOMATION: Write**. Press [**PLAY START**] and when the [**A02**] vocal cut begins to play, turn (Q-LINK 9) anticlockwise so the panning goes from **+42** to **-50**. When you are done, remember to turn **AUTOMATION** back to **READ**.

Press [**PLAY START**] – our 'speech' is now sounding more sculpted and more like a 'performance'. Load up my version from the chapter B10 folder; **B10 Automation Final.xpj**.

VIEWING TRACK AUTOMATION IN LIST EDIT

Unlike audio tracks, it is possible to view and edit automation data written to DRUM tracks within the list editor. Go to **LIST EDIT** and choose **VIEW:**

Track Automation:

#	TIME	PAD/NOTE	LENGTH	VELOCITY	MOD TYPE	VALUE	PROB	RAT
1	001:01:000	■+ A02 (37)			Pan	42R		
2	004:02:539	■+ A02 (37)			Pan	41R		
3	004:02:579	■+ A02 (37)			Pan	40R		
4	004:02:606	■+ A02 (37)			Pan	40R		
5	004:02:618	■+ A02 (37)			Pan	39R		
6	004:02:634	■+ A02 (37)			Pan	38R		
7	004:02:661	■+ A02 (37)			Pan	37R		
8	004:02:673	■+ A02 (37)			Pan	37R		
9	004:02:689	■+ A02 (37)			Pan	36R		
10	004:02:701	■+ A02 (37)			Pan	35R		

The type of automation event is shown via the **MOD TYPE** column ('PAN'), followed by its **VALUE**. As you can see, at **001:01:00** we have the initial automation event which sets a 'default' pan value of **42R**. This particular event would have been automatically generated by the MPC to ensure this track always begins with the originally set panning value as per the pad mixer.

After this first event you can see there are many events from 04:02:539 onwards, each with a incremental change in panning. If you wish, you can tap on any of these values and amend or delete them to 'fine tune' any automation.

BTI: SONG BUILDING WITH THE ARRANGER

So far in the source we've limited ourselves to building short sequences, which I often refer to as 'hooks' or 'themes'. The next step is to look at how we can expand these short themes into complete 'songs'.

TOPICS COVERED IN THIS CHAPTER

- ✓ Linear song building workflow
- ✓ Song arrangement techniques
- ✓ Using the Arranger
- ✓ Sequence editing
- ✓ Using track mutes to build arrangement ideas
- ✓ Subtractive arrangement with 'erase'
- ✓ **Workshop:** Subtractive arrangement with track mutes

WHAT IS A 'SONG'?

When I refer to a 'song' what I ultimately mean is a complete and structured 'composition', typically containing different parts (e.g. chorus, bridge, verse etc), or perhaps a musical piece that gradually builds with

ever increasing layers. It could be a pop song, an instrumental, a hip hop beat, a techno track or whatever you personally consider to be a full song . It is likely to be at least 2 or 3 minutes long and will probably consist of at least 64 bars, but often hundreds of bars.

There are many ways to build a song in an MPC, but generally speaking the two most popular workflows are:

- **The linear workflow** – here we often start with a short 'theme' and begin 'building it out' in a linear style, gradually adding more bars of content until a full composition is eventually created.
- **The song mode workflow** – here we again start with a short theme, but we then use this as a template to create a collection of short sequences that later chained together using 'song mode'.

Both these workflows have the same end result; a single long multi-track sequence representing a complete composition, but each one uses a different process to get there. Some producers religiously follow the same workflow every time they make a song as they find it more efficient, others like to vary the workflow to keep things fresh. Other producers may prefer a hybrid 'linear-song mode' approach, or may even develop their own unique custom workflow.

Ultimately it's important to realise that there is no right or wrong method to building a song in an MPC, just do whatever works for you (which may be different on any given day!).



Remember, the two song building workflows I discuss in this course are the most common but they are not the only methods available to you. The MPC is a very flexible machine, so once you are comfortable with the common song building techniques, be open to adapting them to suit your own particular style of working.

THE 'LINEAR' SONG BUILDING WORKFLOW

Linear song building is probably the most popular way of building compositions in computer DAWs such as Ableton Live or Logic Pro, so it comes as no surprise that as many DAW users flock to try the MPC's almost mythical 'standalone' workflow there is a natural attraction towards adopting a similar linear-style song building workflow within the MPC.

The concept of linear song building is simple:

1. Start with a short sequence (the 'hook' or 'theme')
2. Duplicate and extend this short sequence using a variety of techniques.
3. Add variety, more instrumentation and interesting changes to create a complete and full composition.

Within this very basic framework there is plenty of scope for different 'micro-workflows' within it and I will show you examples of these as we move through the rest of Section B.

WHAT IS ARRANGEMENT?

You'll see the term 'arrangement' used with much excitement and gusto in the MPC community these days but it's probably a good idea to define what the 'arrangement' actually means!

Fundamentally most people consider arrangement to be the structuring of a song into its various parts or sections, such as the 'intro', 'chorus', 'verse', 'bridge' and so on. In the case of an instrumental track less formal names are more likely to be used, such as 'hook', 'main section', 'breakdown' or whatever terms work best for you to help define the distinct parts of your composition.

This organising of your song into its core sections is often called **structural arrangement** and also covers how your sections transition into each other to create the flow and build tension and release in the composition.

Another part of arrangement process is **instrumental arrangement**. Here you look at introducing variation, fills and more layers to add complexity and interest.

Spatial arrangement is about using mixing techniques to enhance the depth and distance within the song, be it experimenting with FX, panning, EQ or levels.

This might sound like a lot to take on board, but most of this comes quite naturally as you build a song so let's use a few of the MPC's core functions to start working on that arrangement - and where better to start than 'the arranger'?

INTRODUCTION TO THE ARRANGER

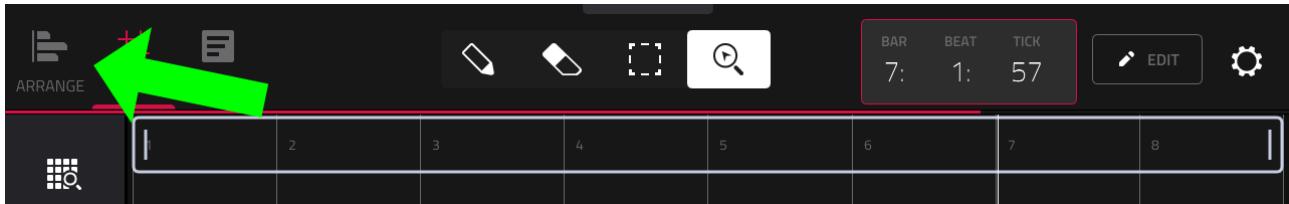
So far we've centred all the initial compositional stages of our song around 'MAIN'. And in all fairness we can continue to build our song in a linear fashion entirely within MAIN if we so desire.

MAIN is called 'main' for a reason, it's always been the central 'workhorse' of the MPC, especially when used in conjunction with all the editing screens (GRID, LIST, TRACK EDIT etc). It was this way in MPC2 and it remains so in MPC3.

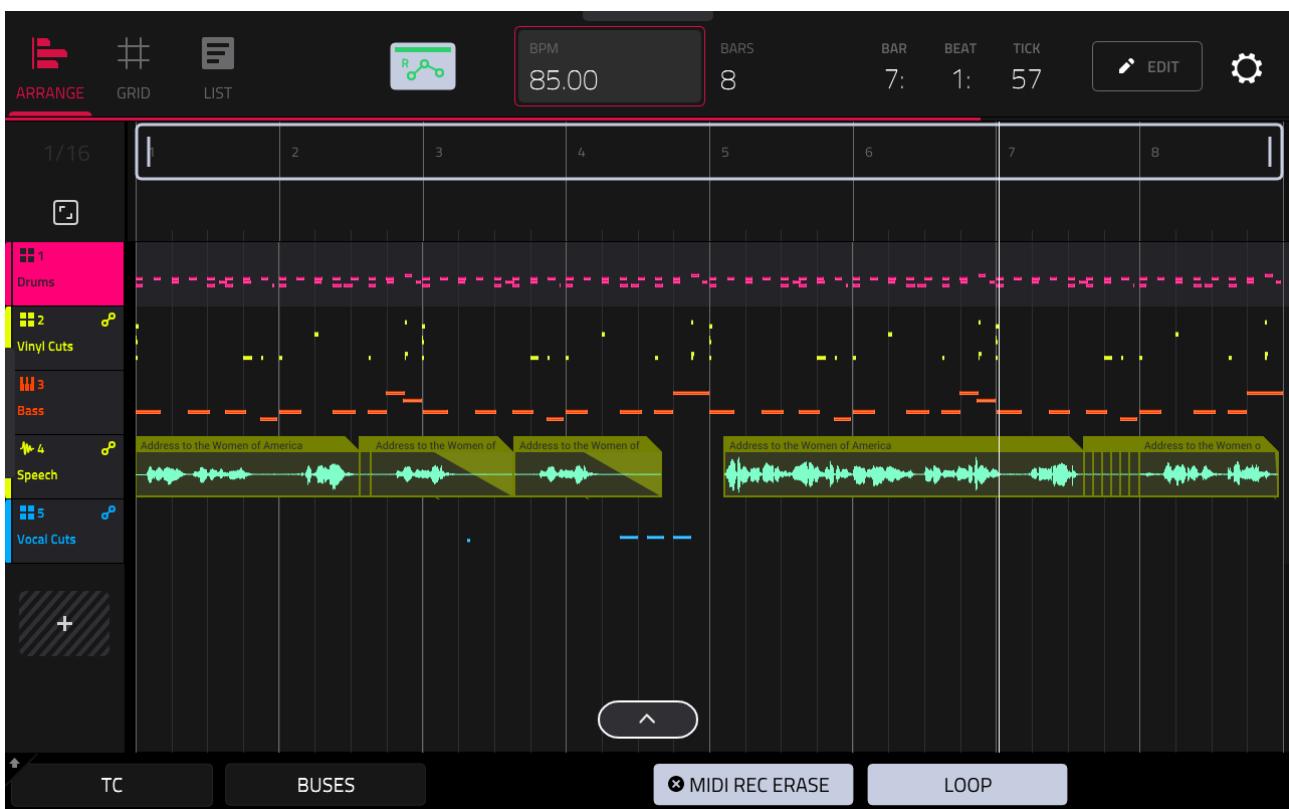
However, MPC3 introduced another way of interacting with your sequences - 'the arranger'. It's currently still a work in progress but when it comes to the initial structural arrangement it's certainly a great way to help 'visualise' your song structure.

Go to the **B11 folder** and load the project file, **B11 Arranger.xpj**. In **MAIN** make sure **sequence 1** is selected; this is simply the 'theme' we've been working on throughout Section B.

We can access arrange mode via **[MENU] > Arrange**. Alternatively you can select the **Arrangement tab** in **MAIN** and **double tap the grid display**. This will take you to GRID VIEW of that track, but at the top of this screen is an icon to take you to **ARRANGE**:



The arranger offers a 'visual' multi-track overview of our current sequence. Each track contains a graphical representation of all the MIDI events or audio waveforms within that track:



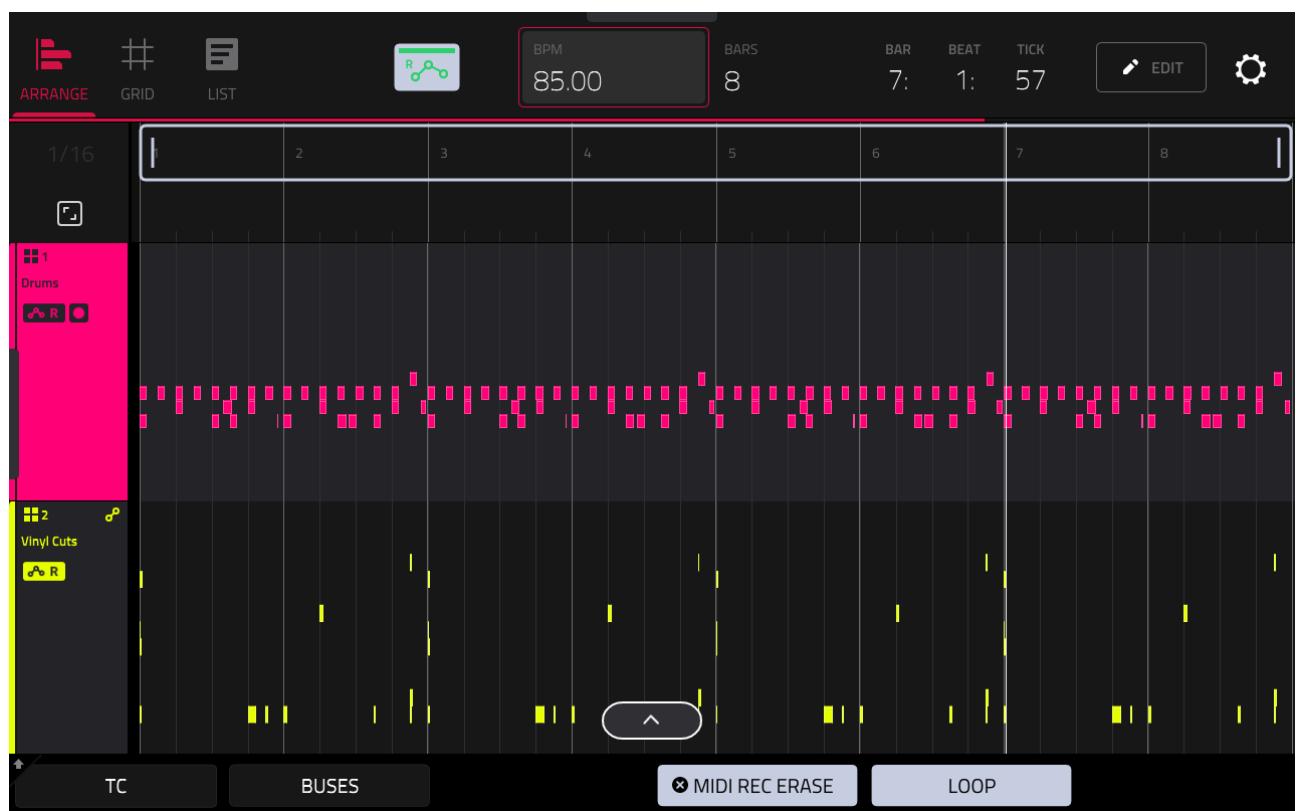
While it is also possible to view the graphical representation of track data in MAIN (via the **Arrangement tab**), the key difference here is that MAIN only ever allows viewing of one track at a time. In the arranger, we see multiple tracks simultaneously, across the entire length of the currently

selected sequence. This allows us to get a better sense of how each track sits within the structure of the current composition.

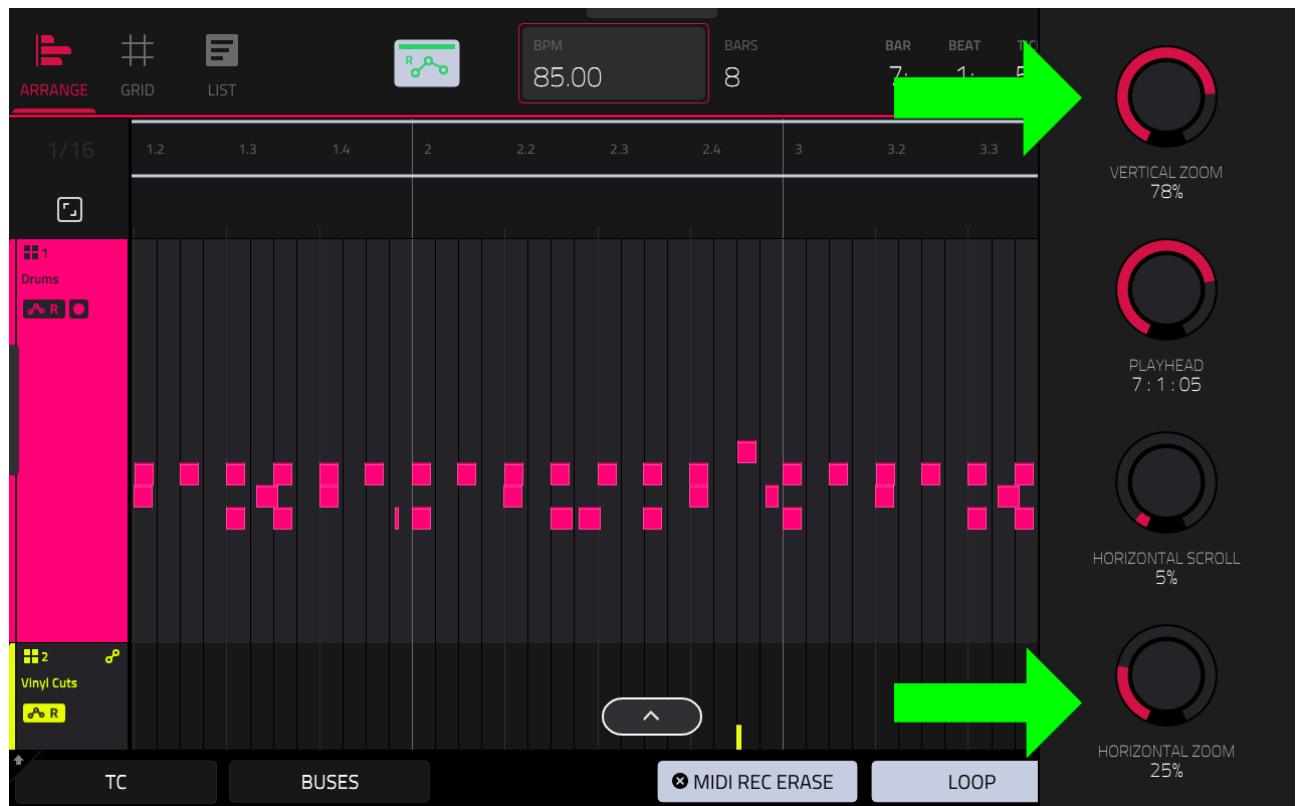
ARRANGER OVERVIEW

We'll look at each component of the Arranger in more detail as we work through this tutorial, but in the first instance let's just have a quick look at the core features.

As we've already discussed, the Arranger is centred around a graphical display of all tracks in your sequence. Tap anywhere on track 1 (Drums) to select it; this turns the background a slightly lighter grey. You can pinch and zoom vertically to magnify the track:

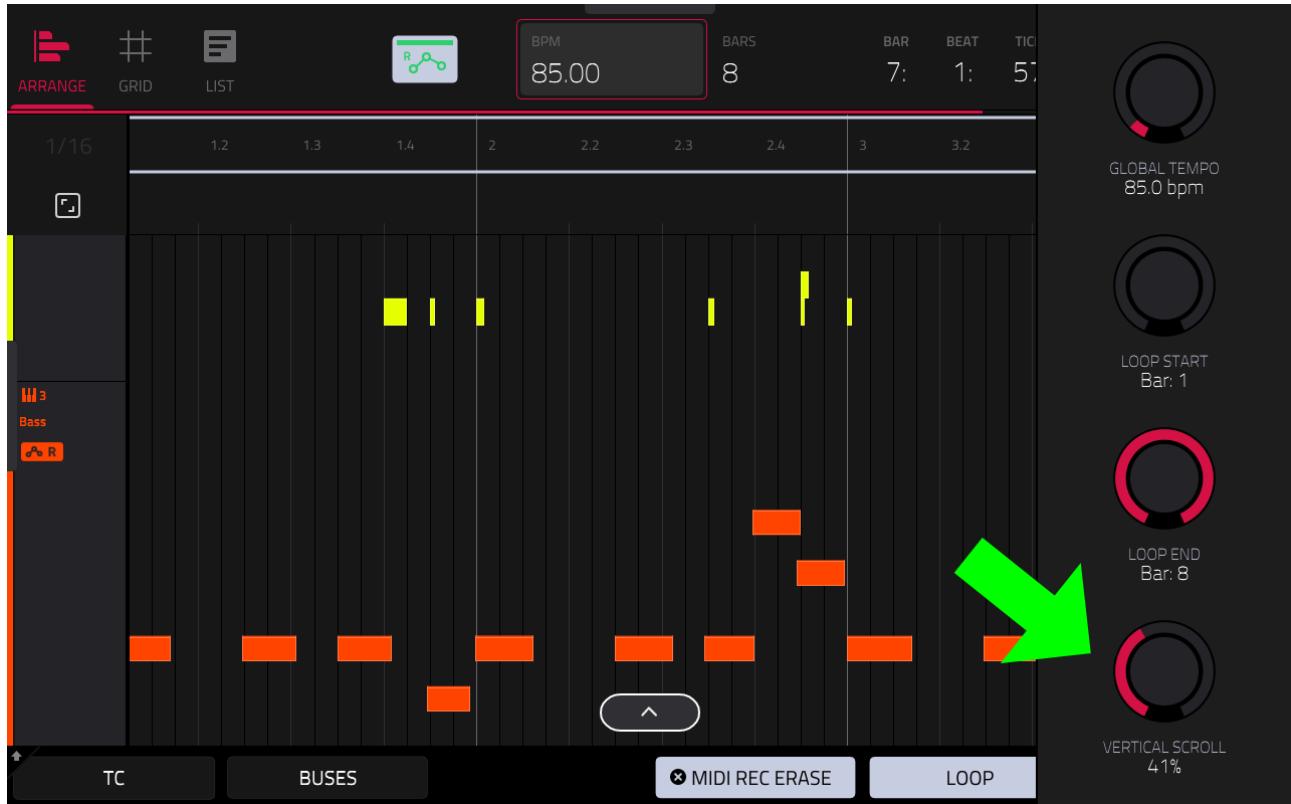


You can also pinch & zoom from left and right to magnify horizontally. The Arranger also has zooming options in **[Q-LINK BANK 2]**:

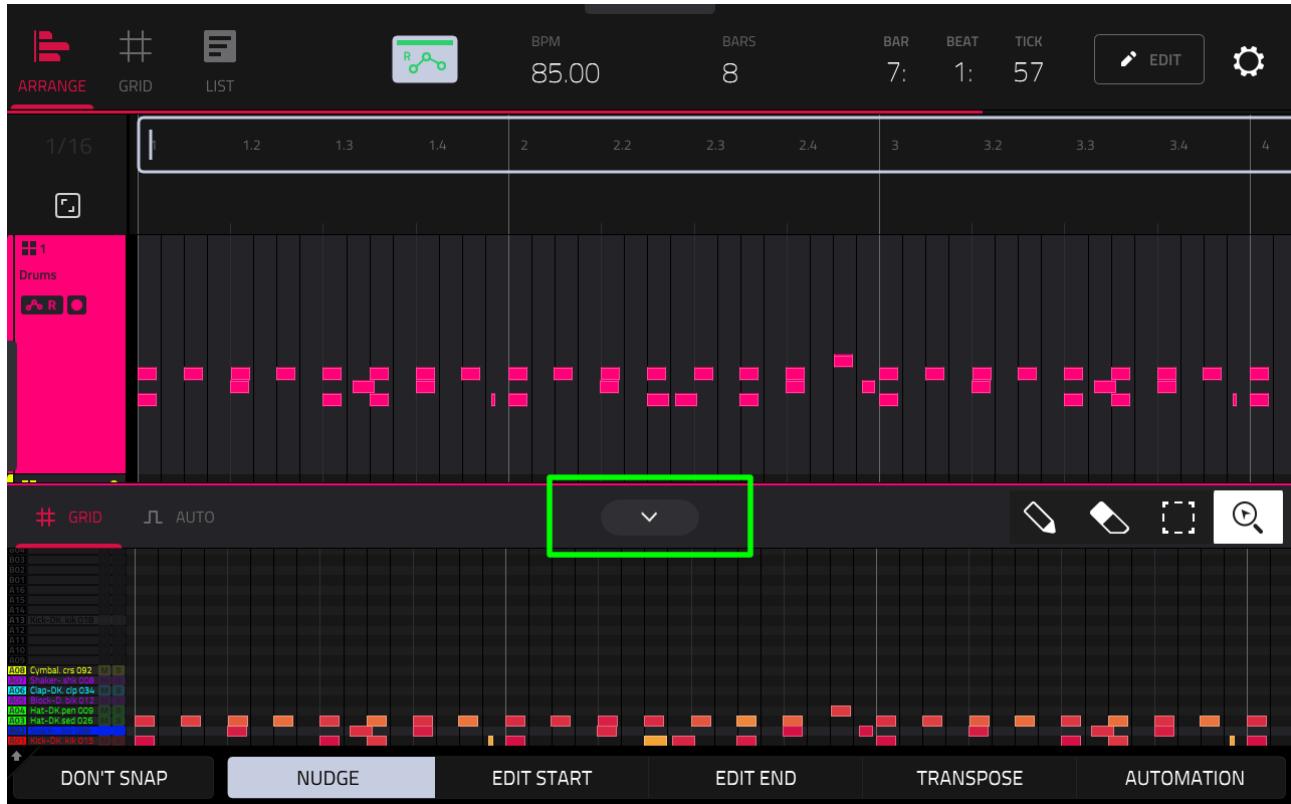


You can hold and drag on the graphical events areas of the screen to move the currently zoomed area in any direction to reposition the display as required - or use (Q-LINK 1) and (Q-LINK 6).

B11: SONG BUILDING WITH THE ARRANGER



The events that you see on a track display are for *visual purposes only*, they cannot be edited directly. However, you can double tap the track events to open a split screen version of GRID VIEW where you can edit events:



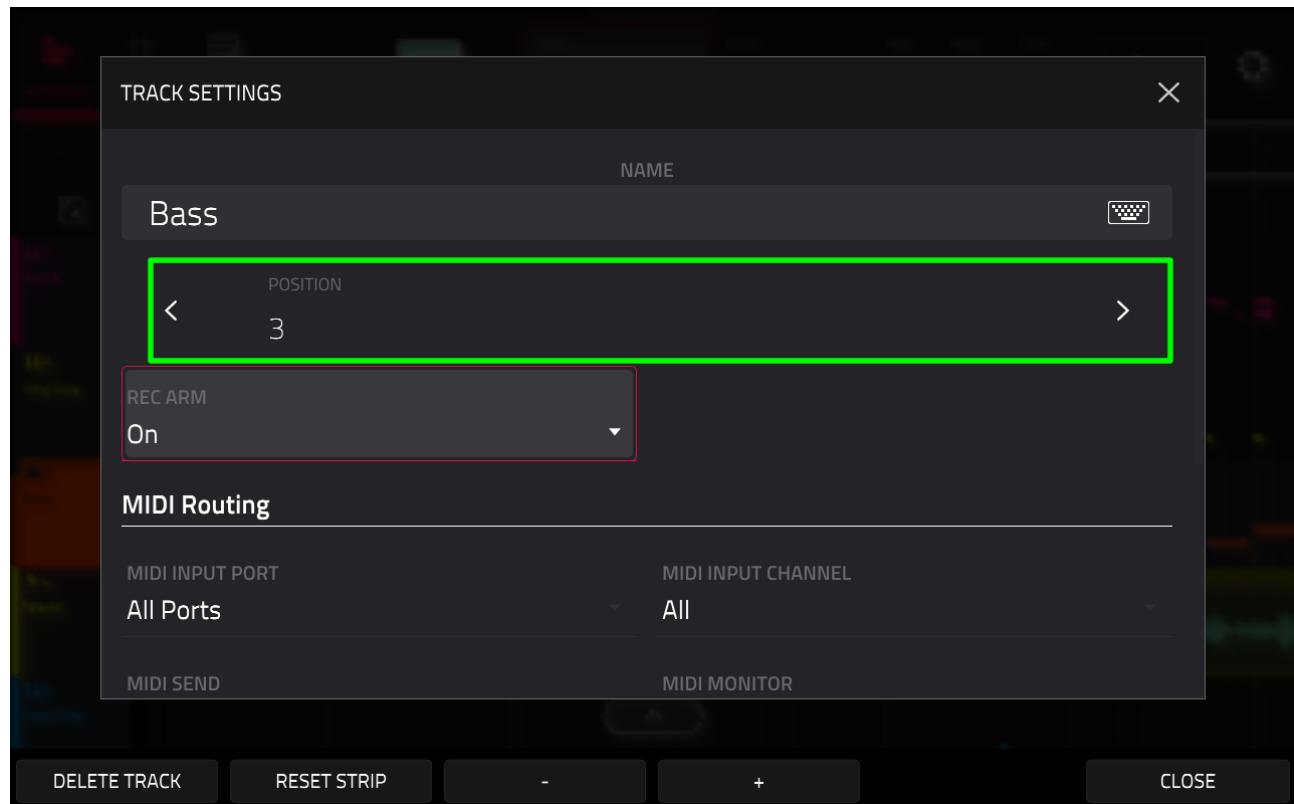
We'll use this later; for the moment tap on the 'down' arrow to close the split screen (highlighted in the green box above).

TRACK MANAGEMENT IN THE ARRANGER

Now that you can finally 'see' your tracks together it's a good opportunity to perhaps perform some additional 'track management', such as taking the opportunity to re-organise the tracks into a more logical order or configuring more complimentary colours for related tracks.

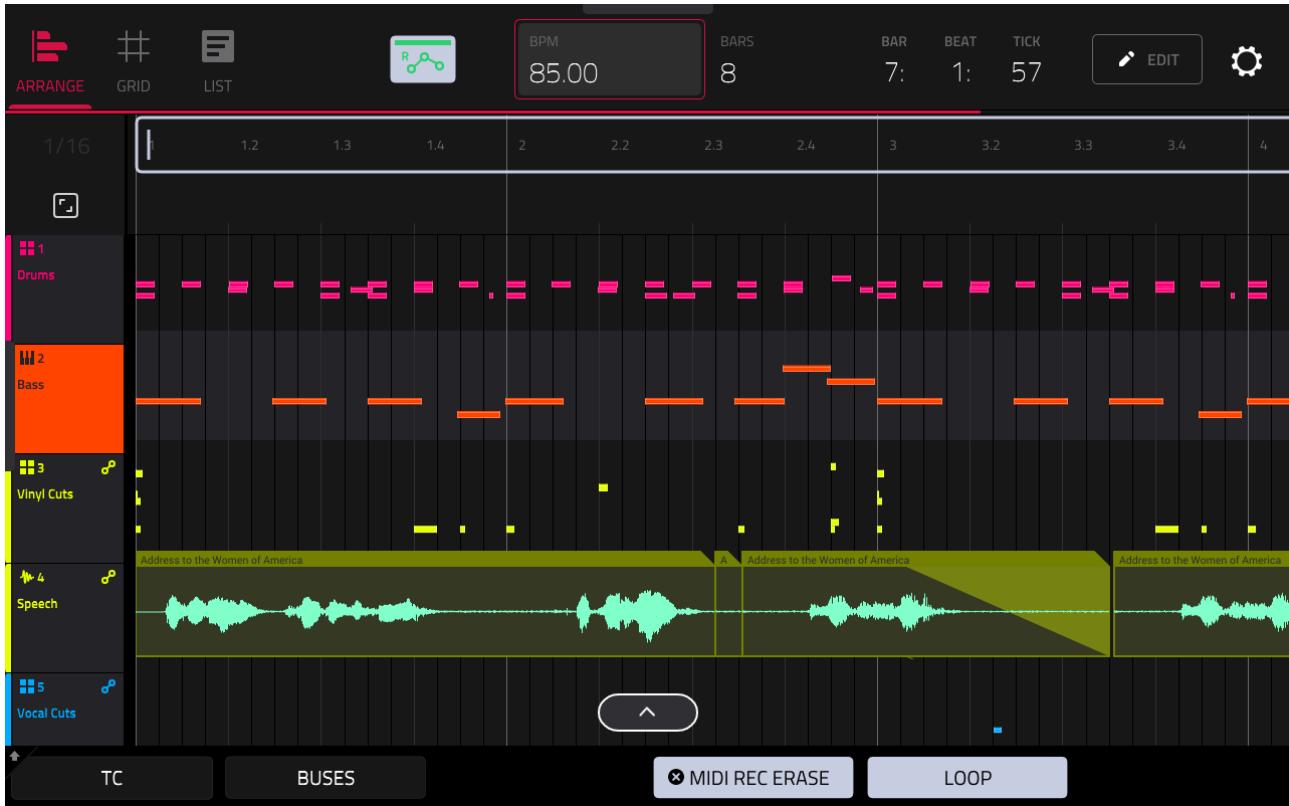
For example, I generally like to have my drums on track 1 and bass on track 2. On the far left of each track is the 'track header' block – double tap

the track header block for the **Bass track** (track 3) to bring up the **Track Settings** dialog.

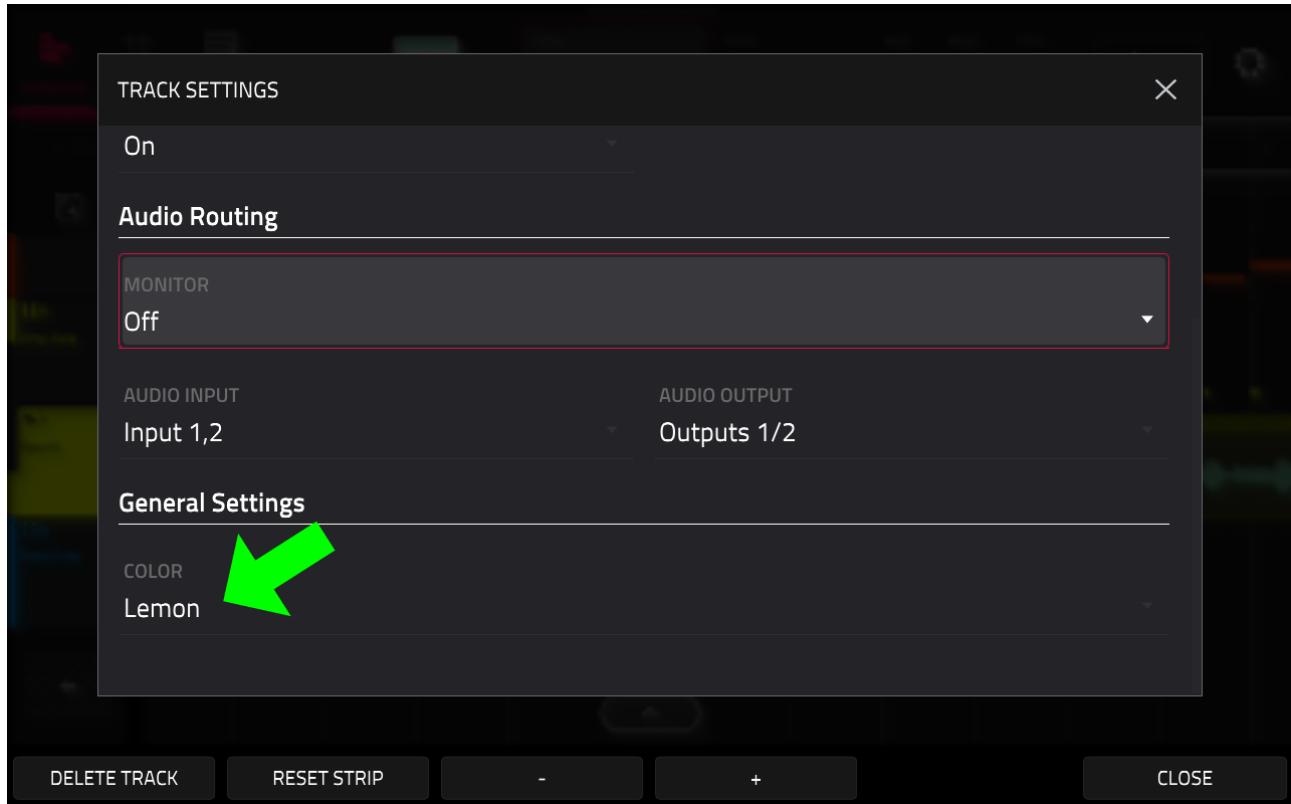


Under **POSITION**, tap the left arrow to change the **POSITION** to **2** and hit **CLOSE**:

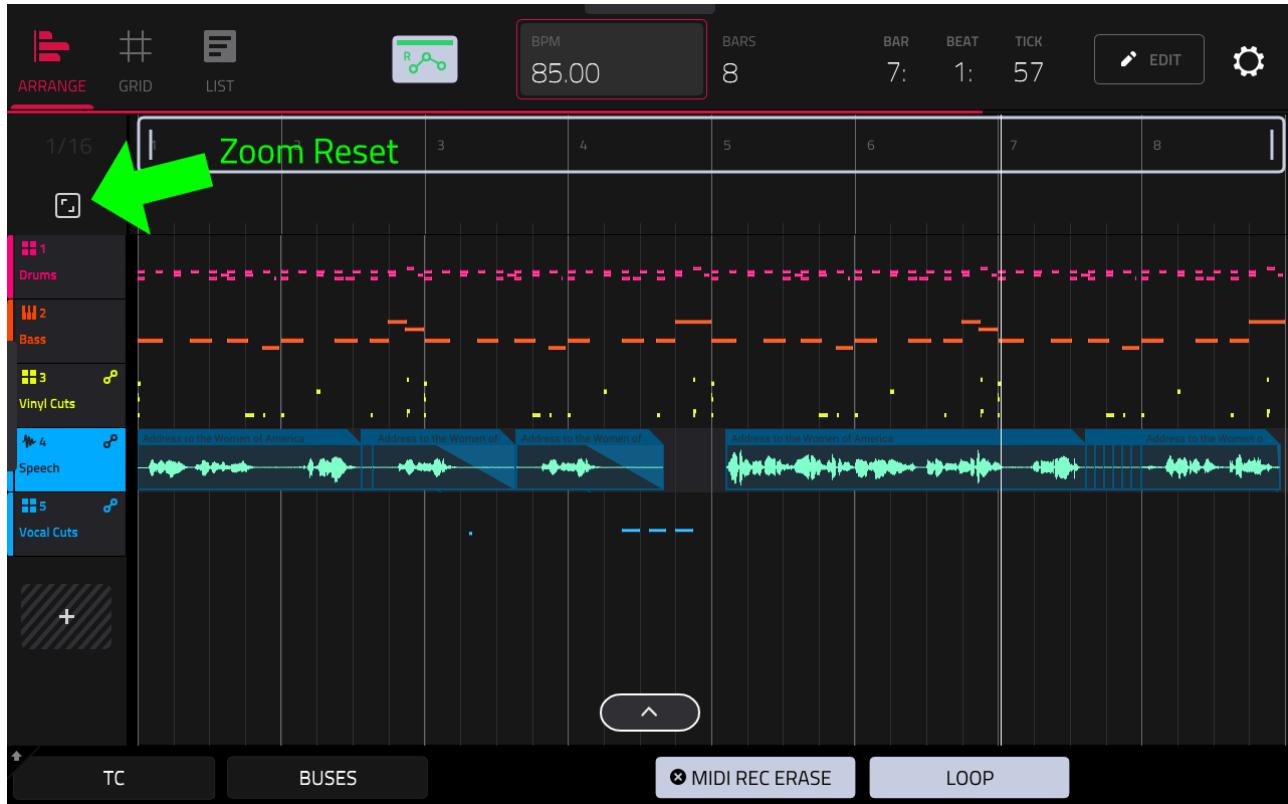
B11: SONG BUILDING WITH THE ARRANGER



Now drag the UI until the **Speech** and **Vocal Cuts** tracks are in view. As these are both related tracks let's give them the same colour; double tap the header for '**Speech**' and drag the **TRACK SETTINGS** screen upwards to reveal the **COLOR** parameter:



Give this track the same colour as the Vocal Cuts track ('**Sky**'). Take this opportunity to change the colour of any other track to help you with the visualisation of your song. Hit the **zoom reset button** to set magnification to the minimum setting (the arranger UI will show a maximum of 8 tracks simultaneously):



Remember the '**Track Settings**' screen is also available in **MAIN** (long press on track name) as well as in the Channel Mixer (we'll meet this soon).

With some initial track management performed, the next step is to begin the first stage of our structural arrangement process.

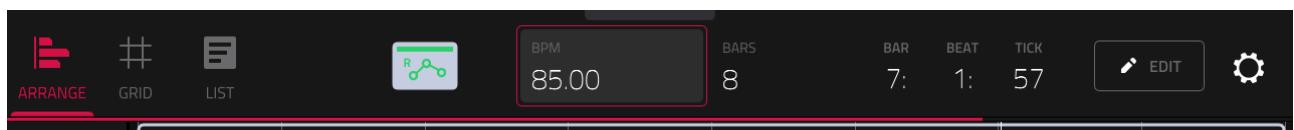
CREATING THE BASIC SONG FRAMEWORK WITH SEQUENCE EDIT

A very simple and effective structural arrangement technique involves removing (or 'muting') instruments or track within a section, such as temporarily dropping the bass for a few bars during the intro, or removing the snare and kick from the drum track during the bridge; this technique is often referred to as '**subtractive arrangement**'.

The most common way to start the subtractive arrangement process is to duplicate our main 8 bar theme many times until we have a song length sequence. To keep things simple, I'm just going to create a 32 bar sequence which we will then arrange into several song sections initially using nothing but subtractive arrangement techniques.

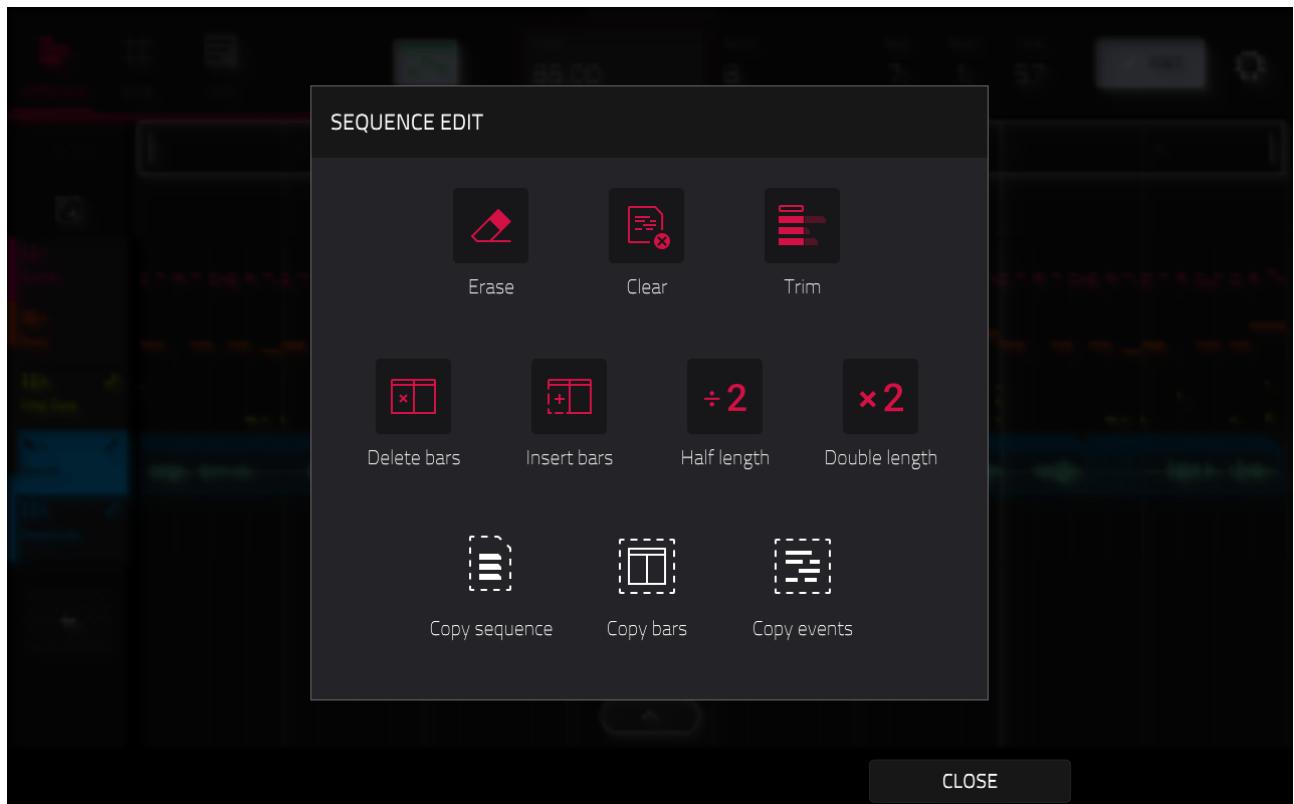
SEQUENCE PARAMETERS IN ARRANGE

There's plenty of sequence parameters here in the arranger that should now be familiar to you as they are also available in MAIN. Take a look at the top toolbar:



Here you can see and adjust the current **sequence tempo**, **number of bars**, **sequence time** and the **automation** read/write status. And to the left of the toolbar are shortcuts to the familiar GRID and LIST EDIT screens.

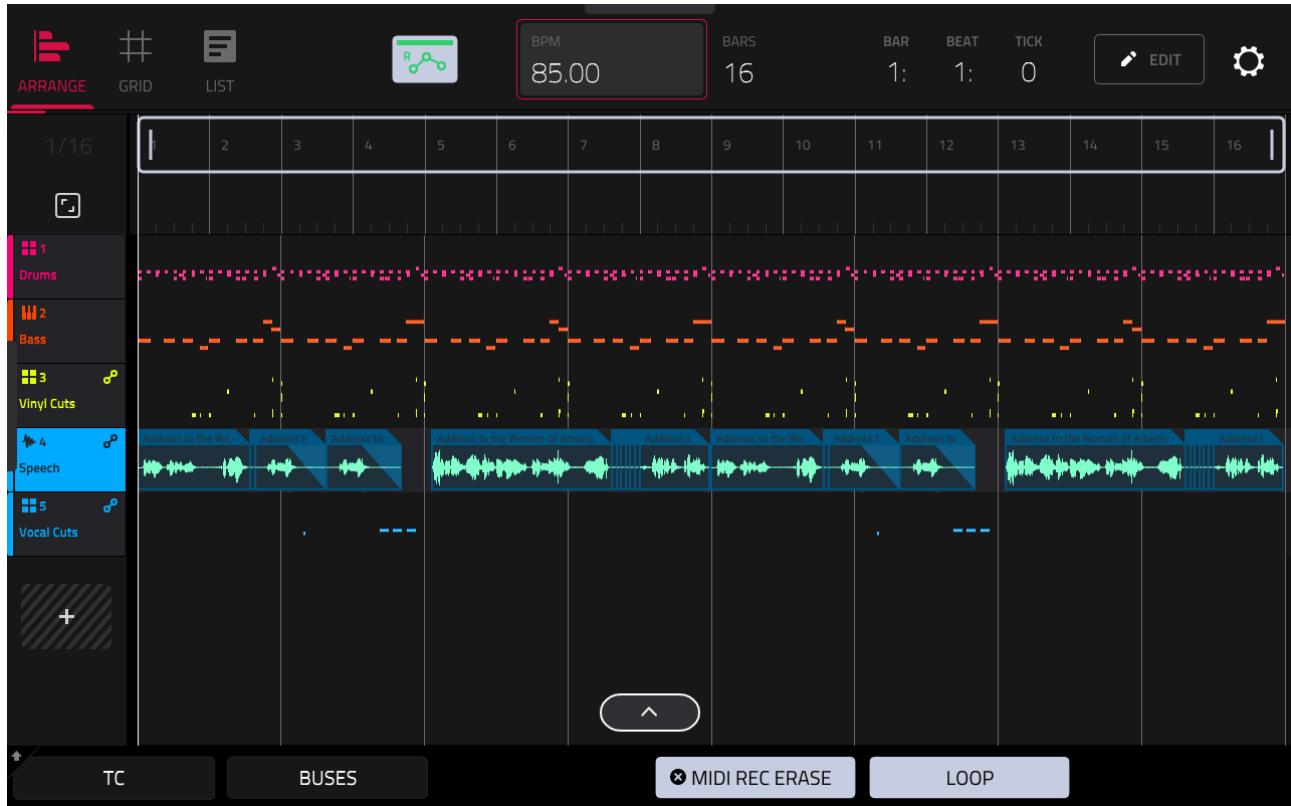
Hit the **EDIT** button to the right of the toolbar:



This brings up the familiar **SEQUENCE EDIT** dialog that we met earlier. It's the exact same list of functions that you can access from the pencil icon in MAIN.

Hit the **Double Length** icon and you'll be taken back to the main Arrange screen – hit the **zoom reset** button:

B11: SONG BUILDING WITH THE ARRANGER



As you can see, our original 8 bar theme has been duplicated to create 16 bars. Repeat this **Double Length** one more time:



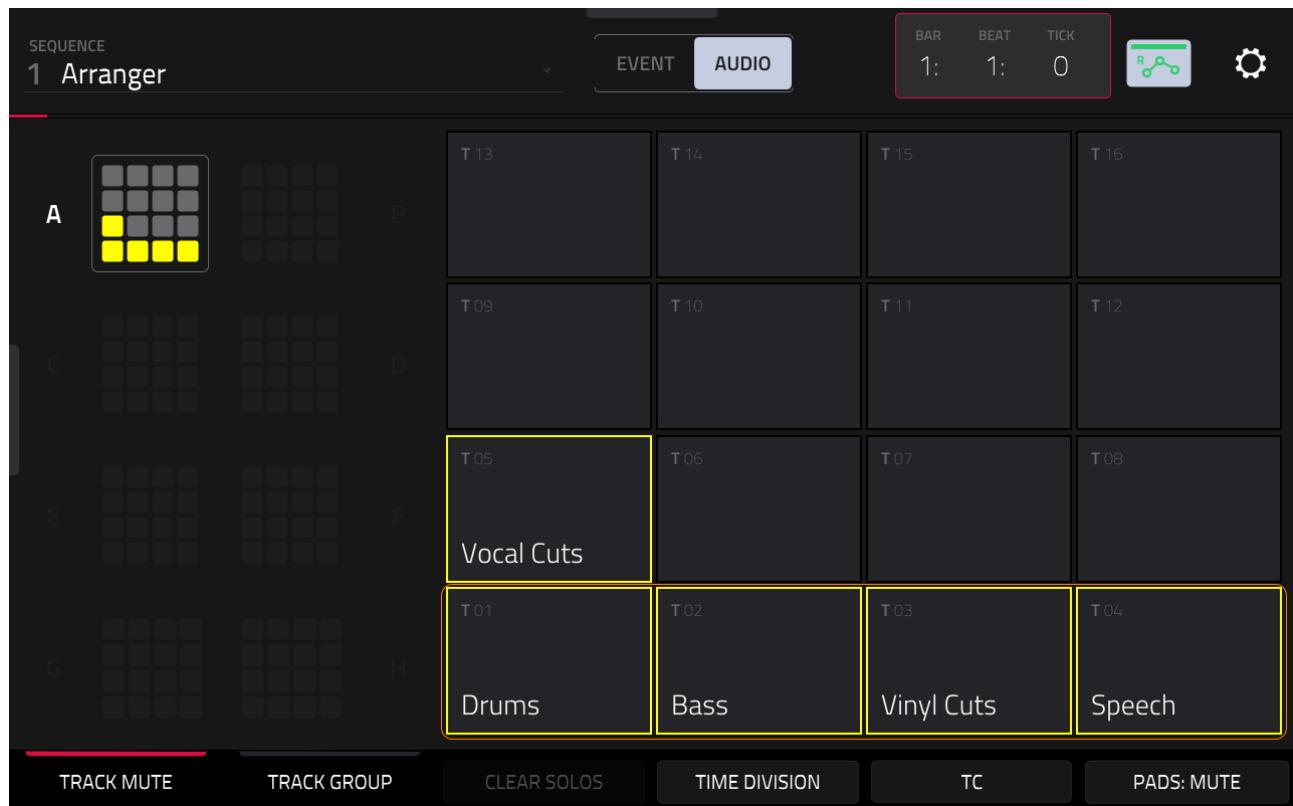
This has now created a 32 bar sequence but you could of course continue doubling until you reach a desired sequence length (e.g. 64 bars at 85BPM would produce an approximately 3 minute long sequence). However, in the next chapter we'll be using other techniques to further extend our 32 bar sequence.

The next step is to look at how we can start *subtracting* certain elements of this long sequence to help begin defining the different song sections.

EXPERIMENTING WITH TRACK MUTES

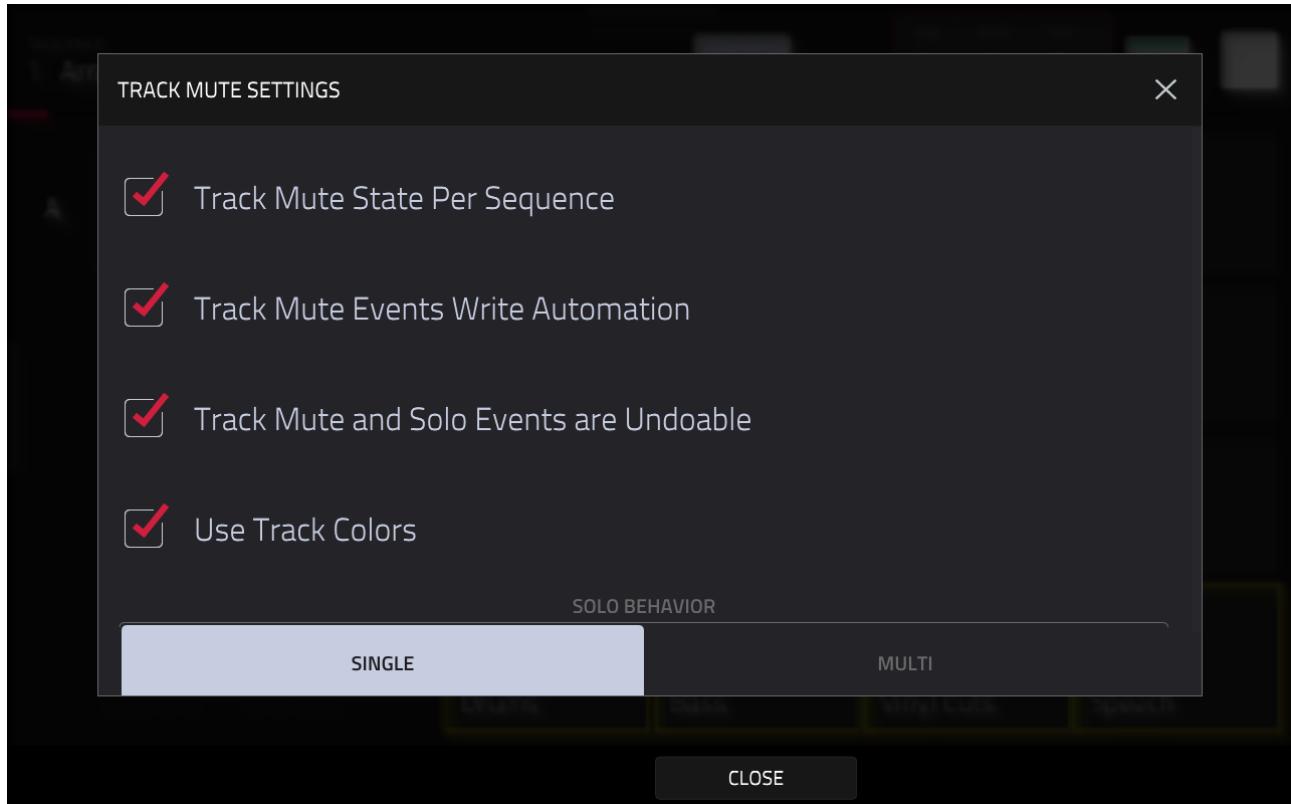
At this stage it's likely you'll just want to spend a little time experimenting with your extended sequence to discover exactly what's possible with

subtractive arrangement. The easiest way to do this is to use the TRACK MUTE screen – go to [MENU] > **TRACK MUTE** (or if you have one, use the physical **[TRACK MUTE]** button on your MPC):

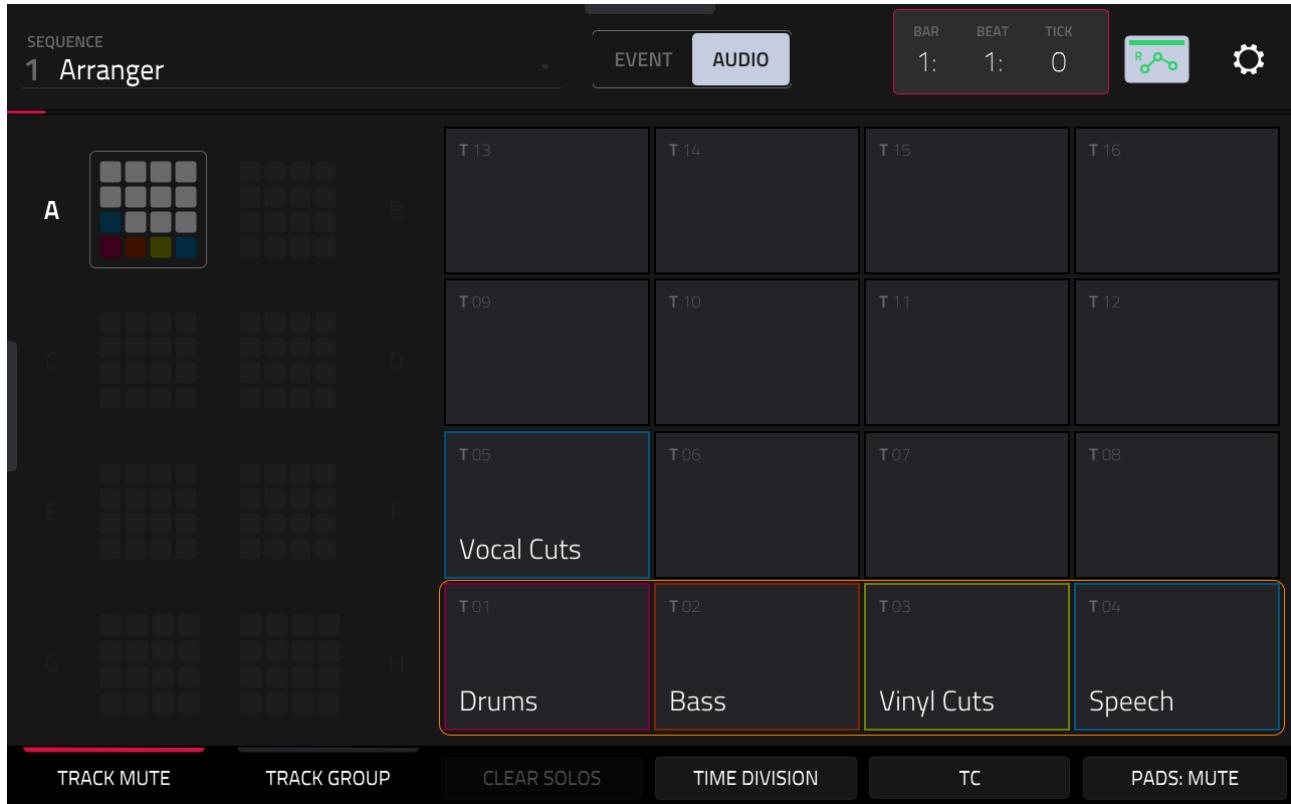


In the track mute screen, each track in your currently selected sequence is assigned to a pad. If your sequence has more than 16 tracks then you can simply change to pad bank B to access the next 16 tracks (you can use the [BANK] buttons or tap on the virtual pad banks on the left side screen).

First click on the **settings gear icon** in the top right of the screen:



For the moment, simply check all the options here, I'll explain the first three in more detail later. Notice that once you check '**Use Track Colors**' the pads change colour to reflect the actual colours of your tracks.



Hit [**PLAY START**] to begin playback of your extended sequence.

AUDIO MUTES VS EVENT MUTES

There are two types of track mute in MPC3; **AUDIO mutes** and **EVENT mutes** (also called 'MIDI mutes'). You can select which type of mute you will be making using the buttons in the top toolbar:



Make sure '**AUDIO**' is selected and hit pad [**A01**] to instantly mute the '**Drums**' track (**track 1**). Hit pad [**A01**] again to instantly 'unmute' the drums. Alternatively you can tap the on-screen versions of the pads to mute tracks.

Keep on tapping pad [**A01**] to turn muting on and off. An '**AUDIO**' mute is just like hitting the mute button on your TV remote, it immediately silences any audio output from that track. And when you 'unmute', audio immediately continues playing.

Try audio muting on **track 3 (Vinyl Cuts)**. Notice how muting instantly cuts the tails off long samples such as the opening chords at the start of each bar, and immediately re-introduces them when muting is disabled.

Now select **EVENT** mutes and continue experimenting with mutes on track 3. This time notice how 'event' muting acts very differently to 'audio' muting; when an **event** mute is applied, any existing audio that was already triggered continues to play; an event mute cannot suddenly silence already playing audio.

However, while the event mute is active, no subsequent MIDI events will be triggered. When you eventually turn off event muting on a track, audio will begin to be heard as soon as the next MIDI event is reached.

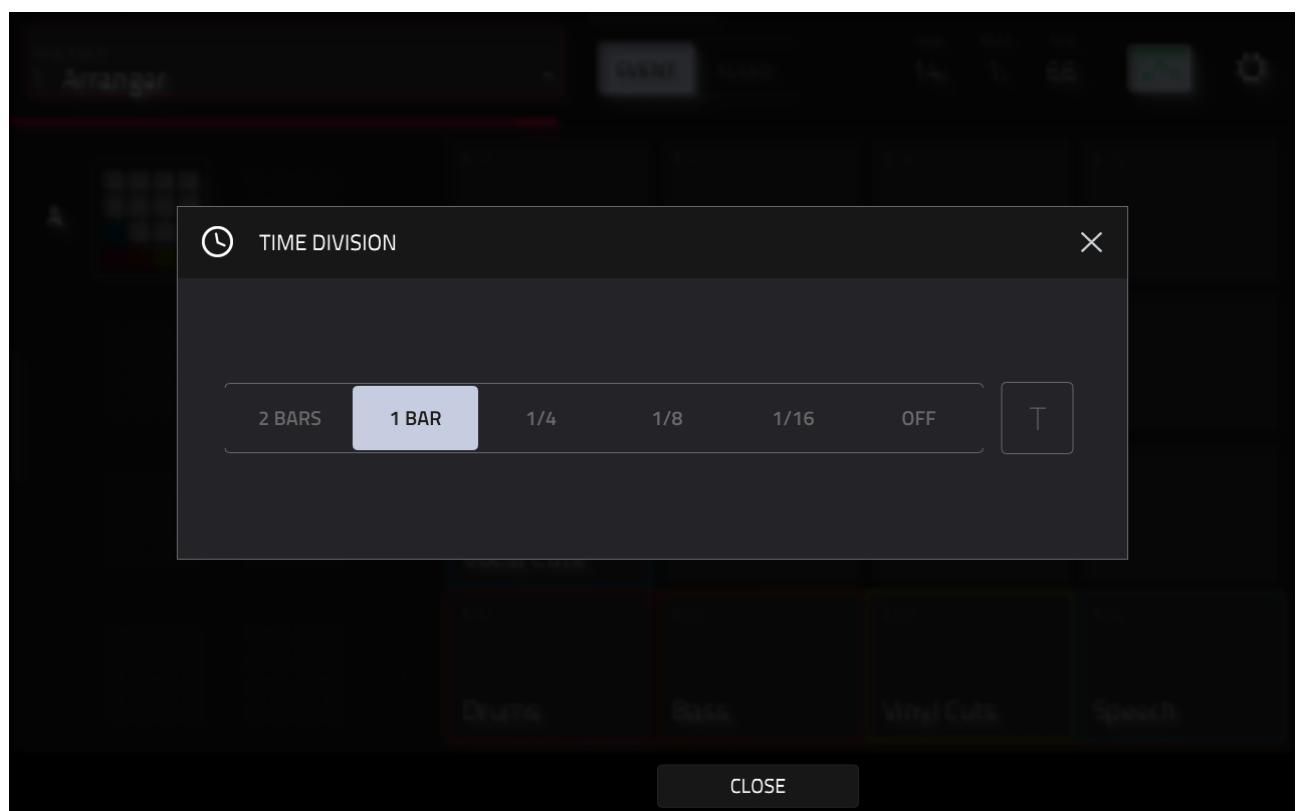
Whether you use the track mute screen for live performance or as a sketchpad for arrangement ideas, you'll generally find that **event** mutes will be the most useful type of track mute. For arrangement use they will give you an accurate reflection of what your track will sound like with the events within specific regions disabled or erased.

Audio muting generally gives an unnatural type of mute – for example, it's rare that you would want to suddenly 'silence' the tail of a crash or snare, although it can be used as a special effect.

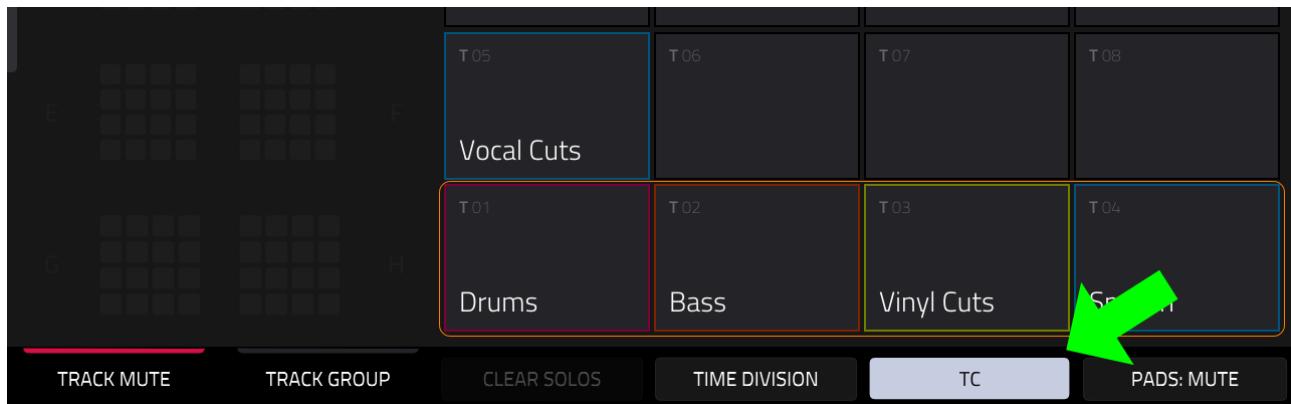
'LAUNCH QUANTIZING' MUTES

By default, when you mute a track the 'mute' is applied instantly (although an event mute will only have an audible impact on your track when the next MIDI event is encountered).

You can however 'line up' a mute and effectively 'quantise' the point at which it is applied. Tap on the **TIME DIVISION** button at the bottom of the screen:



Set **TIME DIVISION** to **1 BAR**, hit **CLOSE** and now enable the **TC** button:

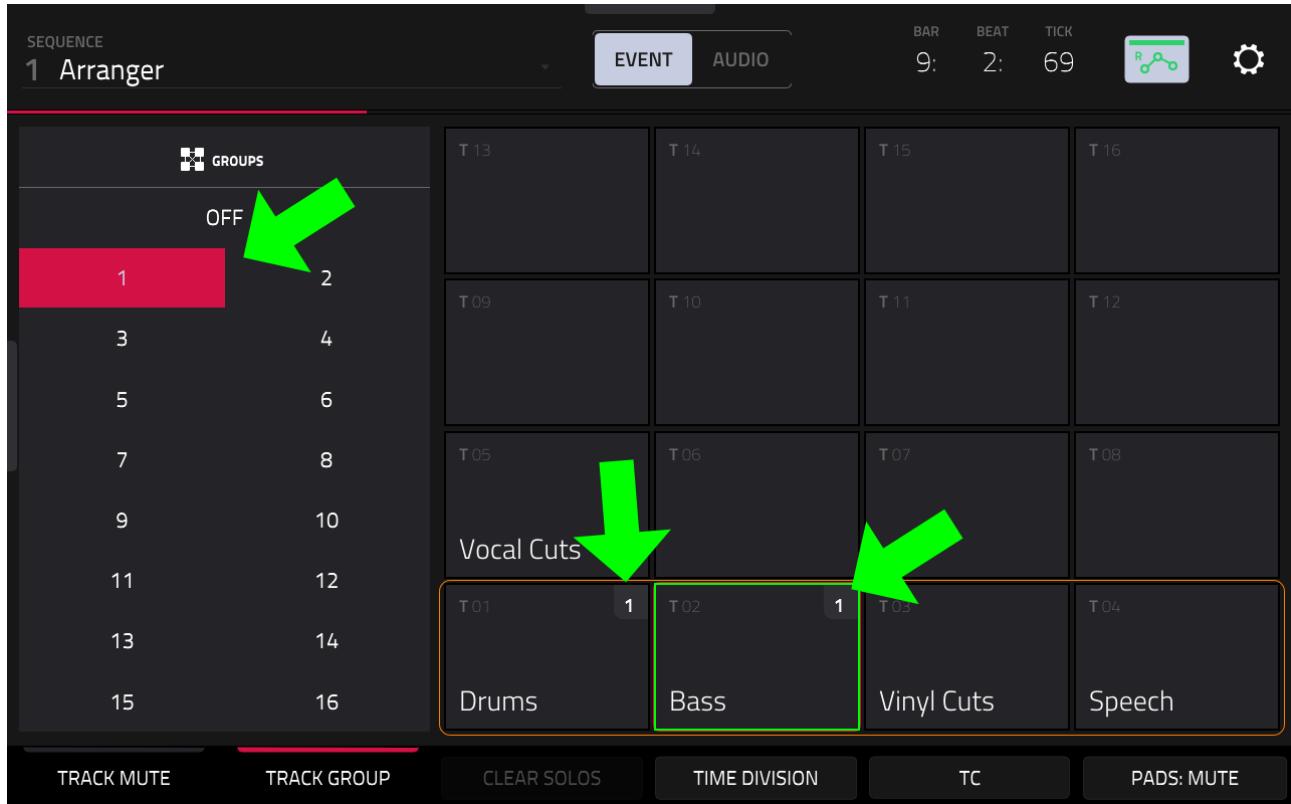


Hit [**PLAY START**] and now when you press a pad, the associated track mute will not be applied until the sequence reaches the start of the next bar. Adjust the TIME DIVISION as required, or hit TC to turn off this feature.

GROUPING TRACKS

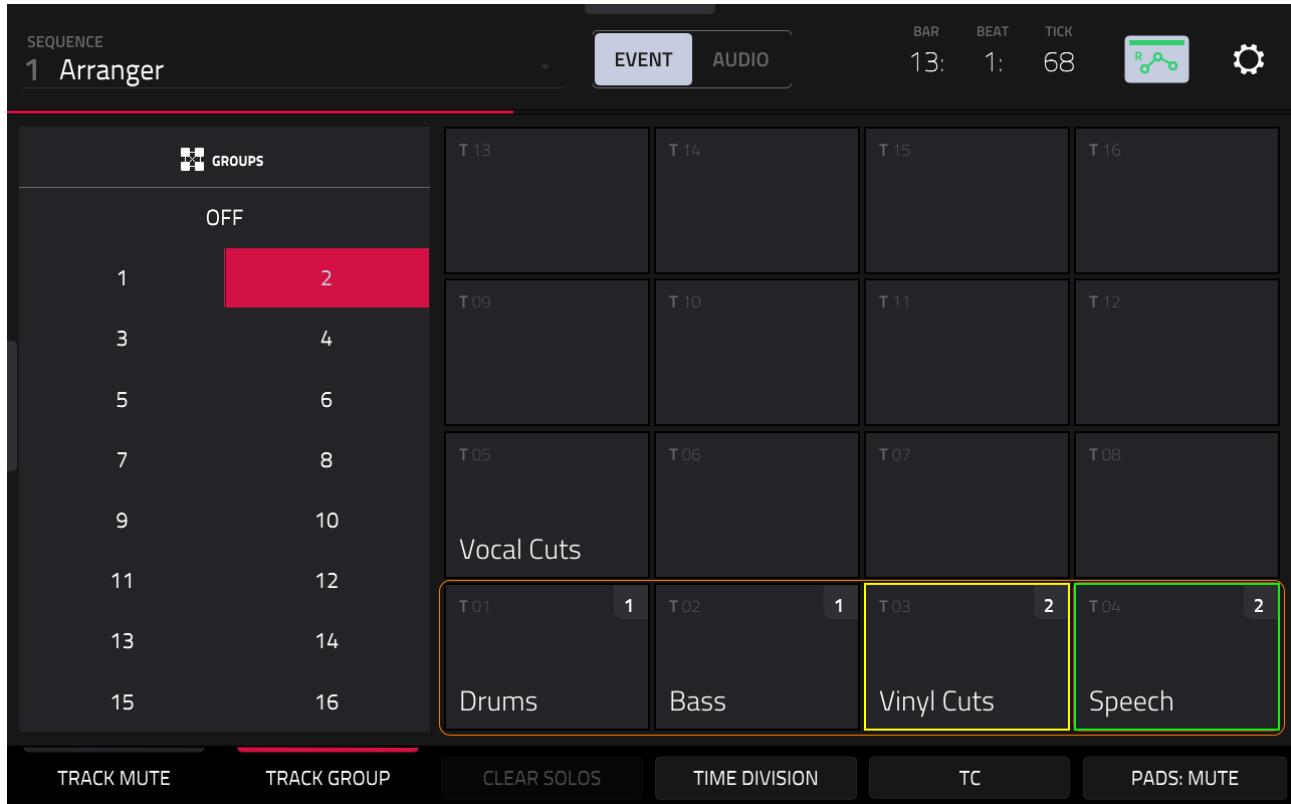
It's easy to simultaneously mute multiple tracks simply by hitting all the pads together, but this could prove tricky in more complex multi-track sequences. You can however group tracks so muting one will automatically mute all the other tracks in the same group. Hit the **TRACK GROUP** button; hit pad **[A01]**:

B11: SONG BUILDING WITH THE ARRANGER

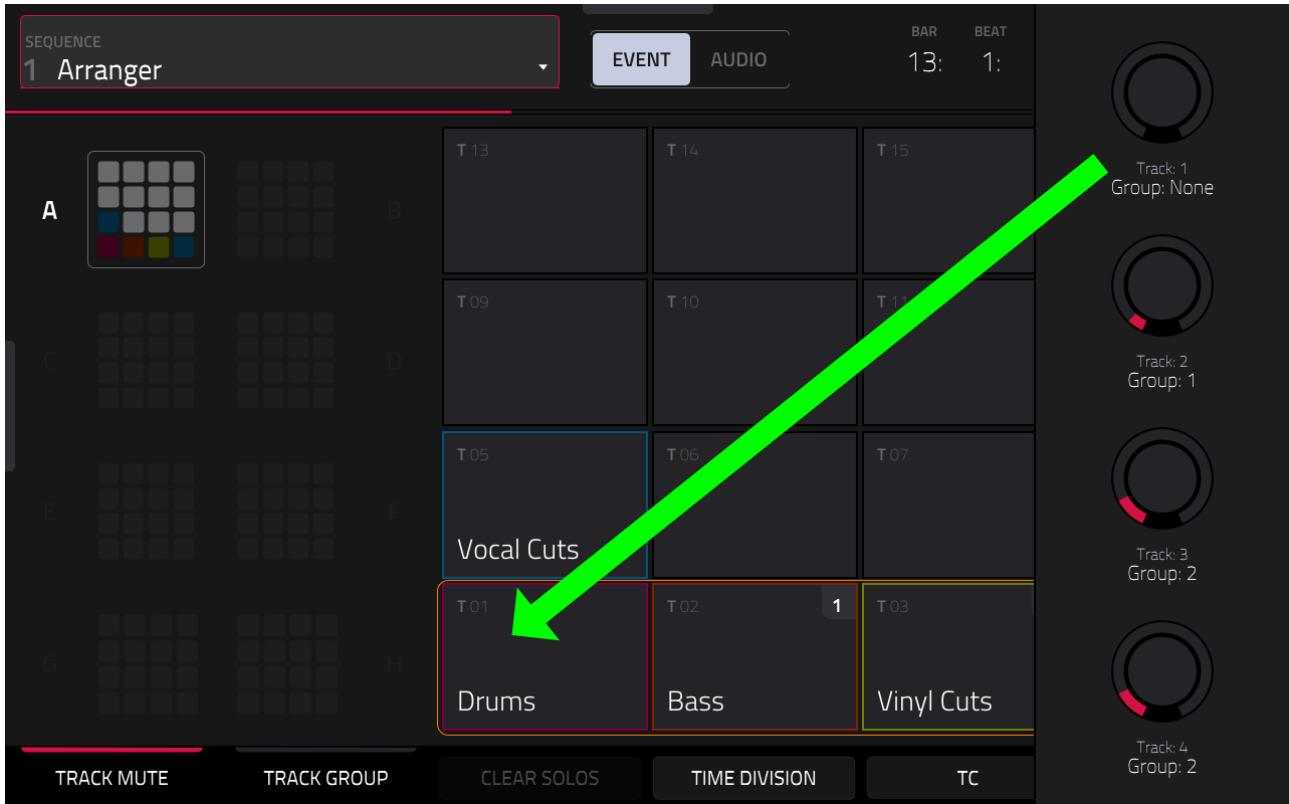


To select the **Drums** track and set the **GROUP** to **1** and then hit pad [**A02**] and set this to the same group. Repeat for tracks 3 and 4, but this time assign them to **GROUP 2**:

B11: SONG BUILDING WITH THE ARRANGER



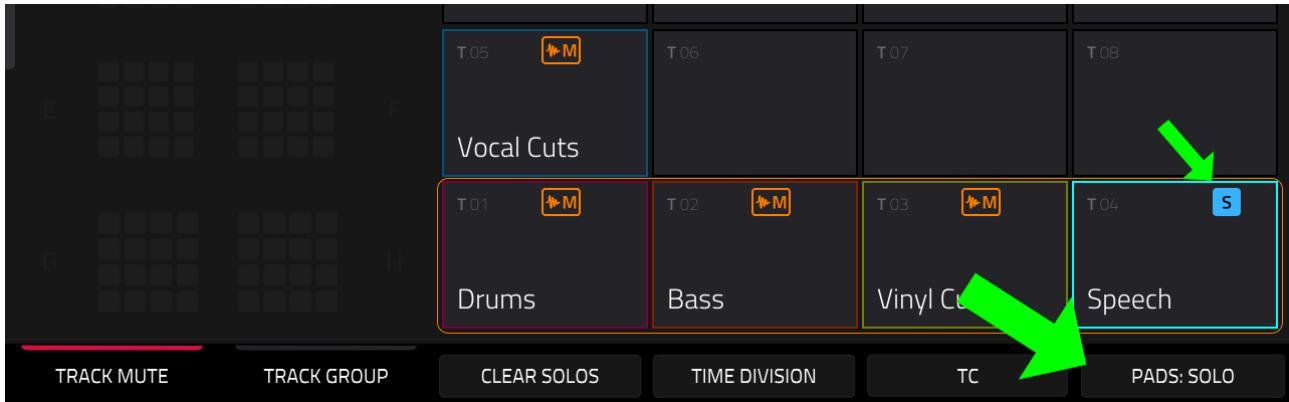
You can return to the main **TRACK MUTE** screen and now hit either pad [A01] or [A02] to mute tracks 1 and 2 simultaneously. While here you can also use the Q-LINKS to dynamically change the group assigned to a specific pad.



Here I used a quick twist of (Q-LINK 13) to remove the Drum track from group 1, leaving only the bass in that group.

Soloing Tracks

The opposite of a track mute is a track solo and this is also easy to achieve in the TRACK MUTE screen. Simply hit the **PADS: MUTE** button in the bottom menu bar so it changes to **PADS: SOLO** and now hit a pad and all other tracks will be muted, leaving only the selected pad playing.



By default, only one track can be soloed at a time, but this can be changed; tap the **gear settings icon** and set **SOLO BEHAVIOUR: MULTI**.

PAD NOT UNMUTING?

It's possible to apply event and audio mutes simultaneously to the same pad. So if a pad refused to 'un-mute', make sure you didn't previously mute it using a different type of mute. The active mute types are shown on the pad itself:



SUBTRACTIVE ARRANGEMENT IDEAS

Just to quickly recap, our theme sequence currently consists of the following tracks:

1. Drums
2. Bass
3. Vinyl Cuts
4. Speech Audio
5. Vocal Cuts

With your sequence playing, simply hit different pads in the TRACK MUTE screen to hear how different the sequence sounds when an entire track is removed. It's clear that we can create very different sounding sections simply by muting any number of these tracks for any length of time we wish.



Remember that this stage we are just trying to listen to how differently the sequence can sound simply by muting entire portions of tracks, it's a very basic but highly effective way of beginning to build a composition. Later we'll look at more granular arrangement methods as well as how we can add more instrumentation, overdubs and variety to make a more interesting composition.

We can use track mutes to define some distinct sections for our song, for example:

Bars 1-8: Intro

Bars 9-16: Main theme

Bars 17-24: Bridge (for a build up)

Bars: 25-32: Solo (for an instrumental)

The full structure is not set in stone, but this framework is definitely something we can work with, so let's head back to the arranger to start implementing this subtractive arrangement into our initial 32 bar sequence.

DEFINING SONG SECTIONS WITH LOCATE POINTS

Go to [**MENU**] > **ARRANGE**. Before we begin creating different sections within our song we can first configure **LOCATE points** to define where these different sections will begin.

Referring back to the previous section of this chapter, we said the first section would be an 8 bar 'intro', so let's place a locator point at the start of this intro at time **1:1:0**.

If required, press [**SHIFT**] and [**STOP**] together to reset the time counter to **1:1:0**. Now hold down [**SHIFT**] to reveal the **LOCATOR** sub menu at the bottom of the screen:

B11: SONG BUILDING WITH THE ARRANGER



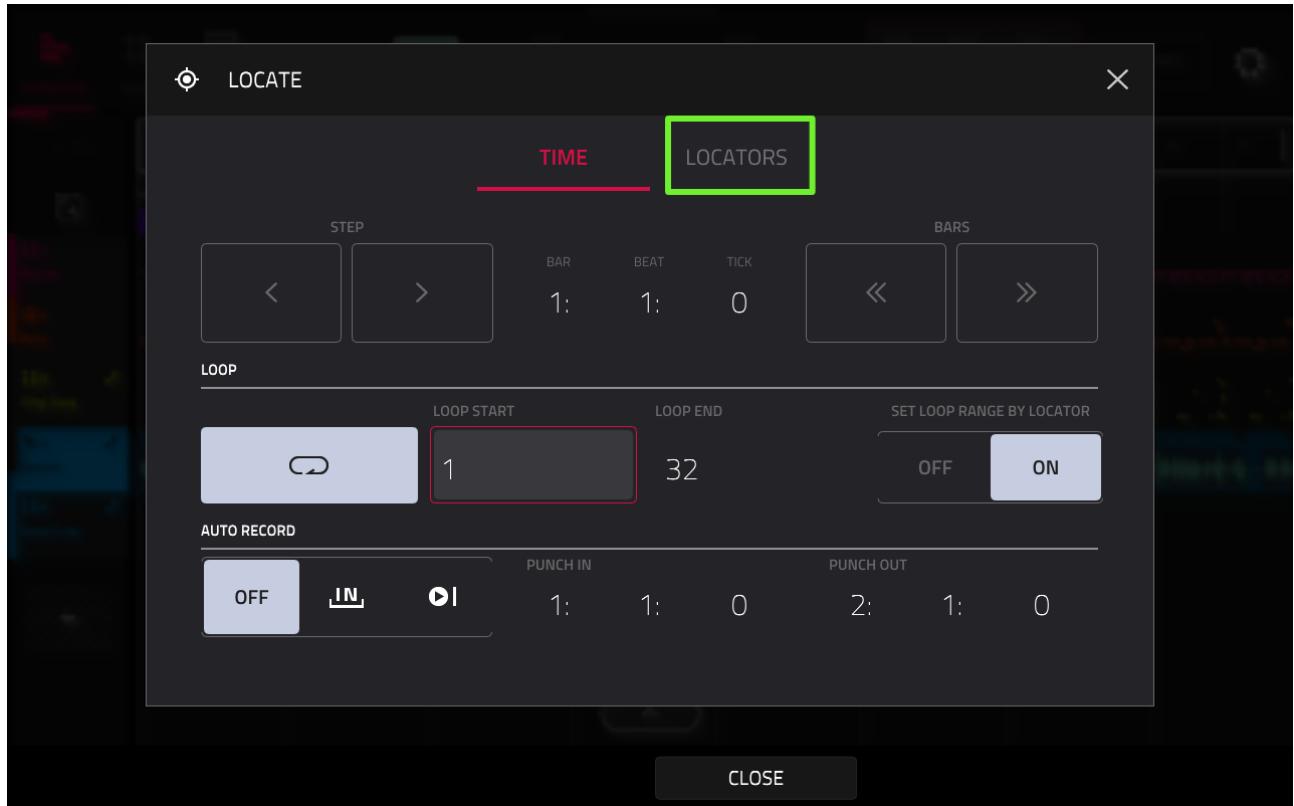
With [SHIFT] still held down, tap on the first **SET** button and its name will change to **LOCATOR 1**; you'll also see a small coloured flag appear just below the bar timeline:

B11: SONG BUILDING WITH THE ARRANGER

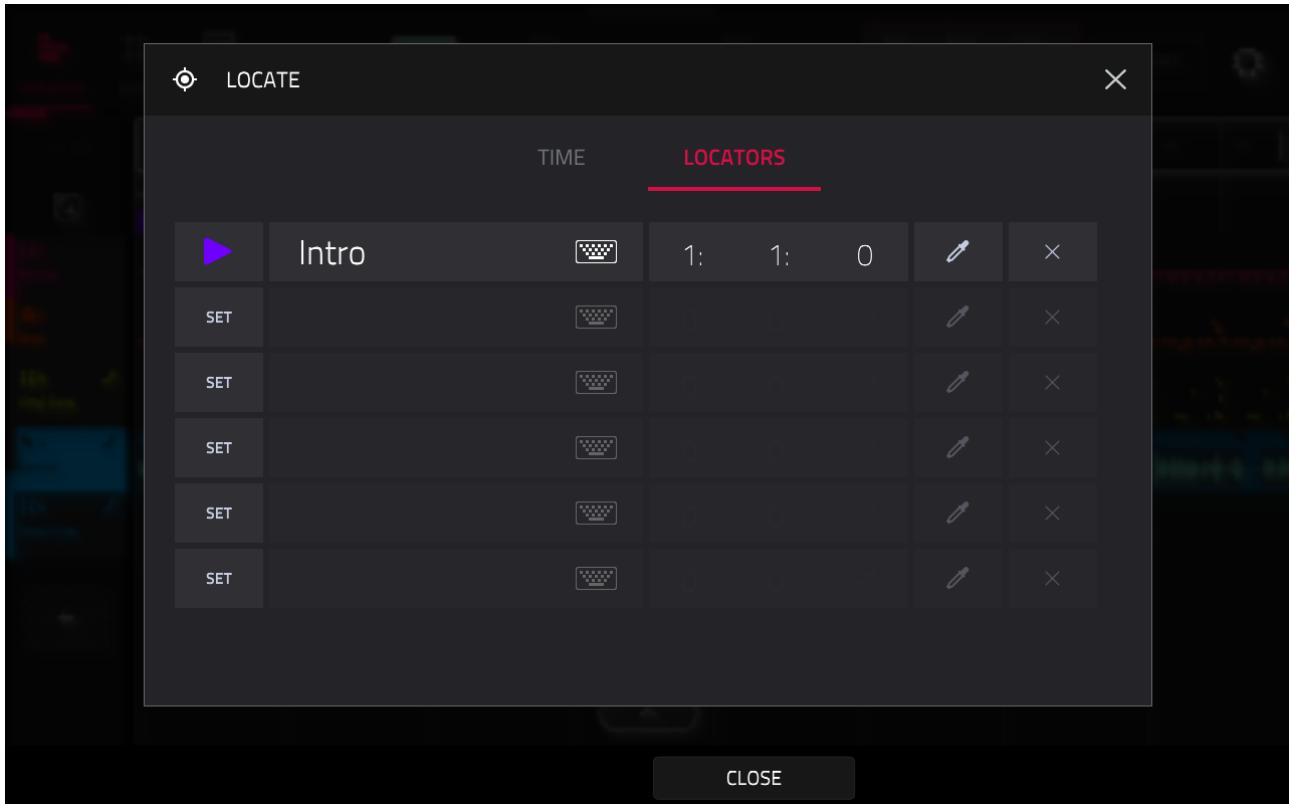


Let's give this locator point a name. Double tap the time counter in the top menu bar to bring up the **LOCATE** dialog and tap on the **LOCATORS** tab:

B11: SONG BUILDING WITH THE ARRANGER



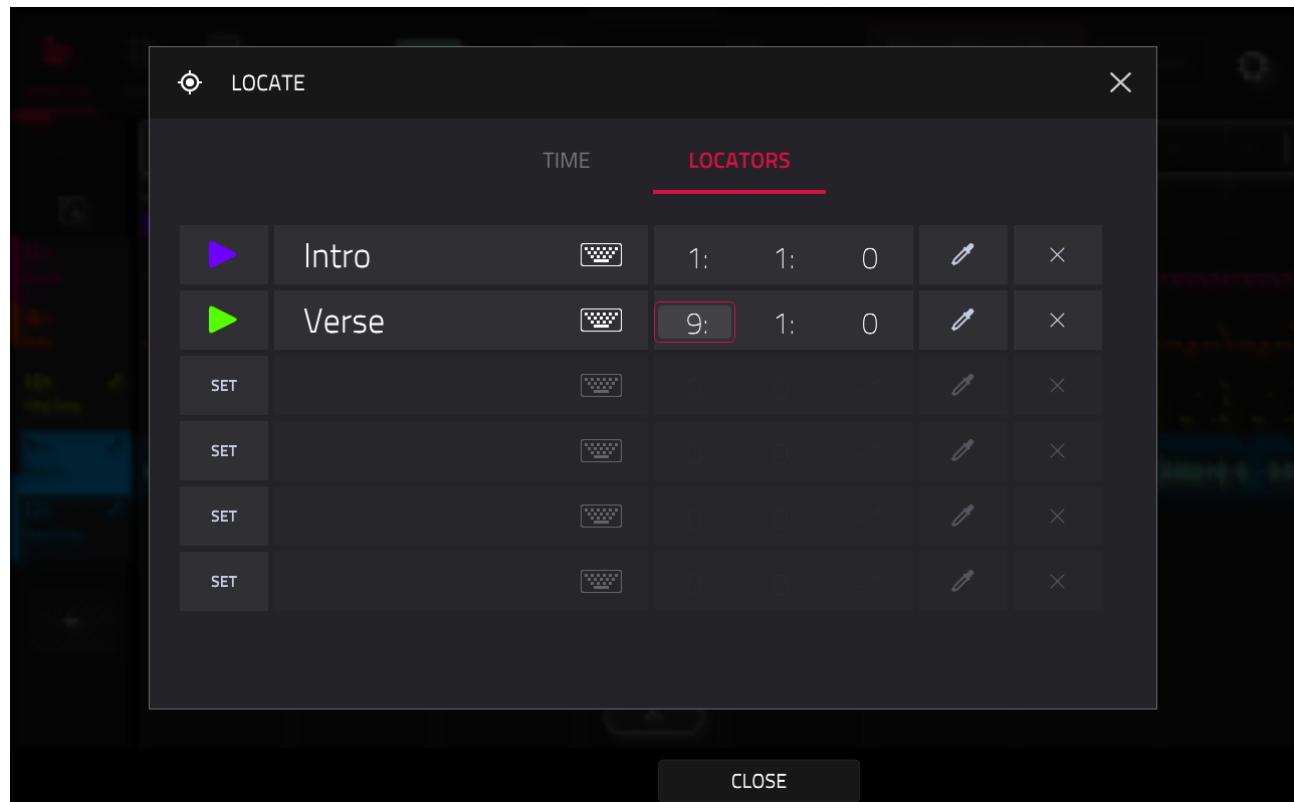
Tap on the name or keyboard icon for **Locator 1** and give it the name **Intro**.



Here in the LOCATORS tab, hit the pencil icon next to any locator point to select a different colour for its flag. Hit the 'X' to delete a locator.

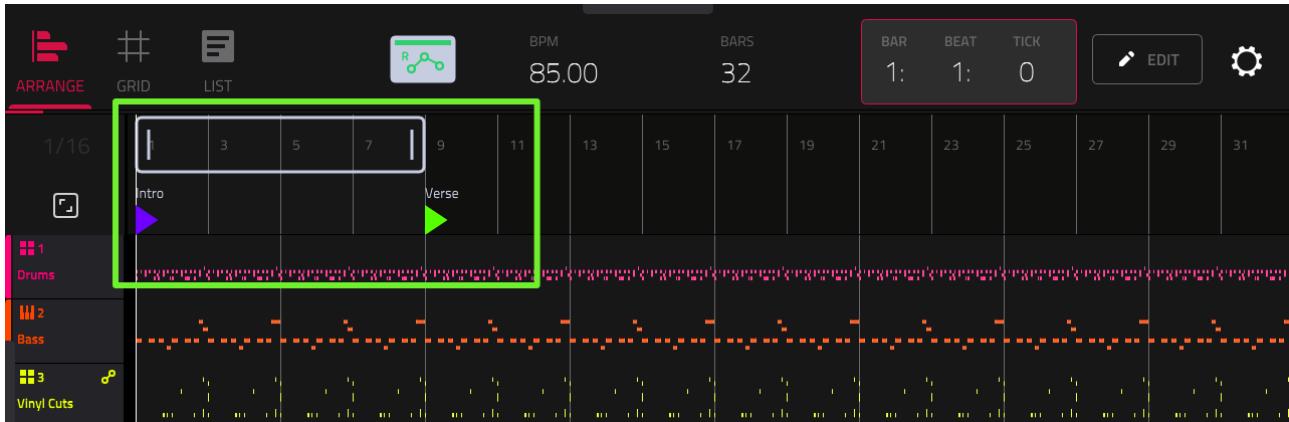
The next section, '**Verse**' starts at **bar 9**. In addition to the 'SET' buttons at the bottom of the ARRANGER screen we can also use the currently open LOCATE dialog to add locators. Hit the **SET** button underneath the Intro flag:

Rename to '**Verse**' and then tap on the '**BAR**' value of it's time locator and change this to **9:1:0**

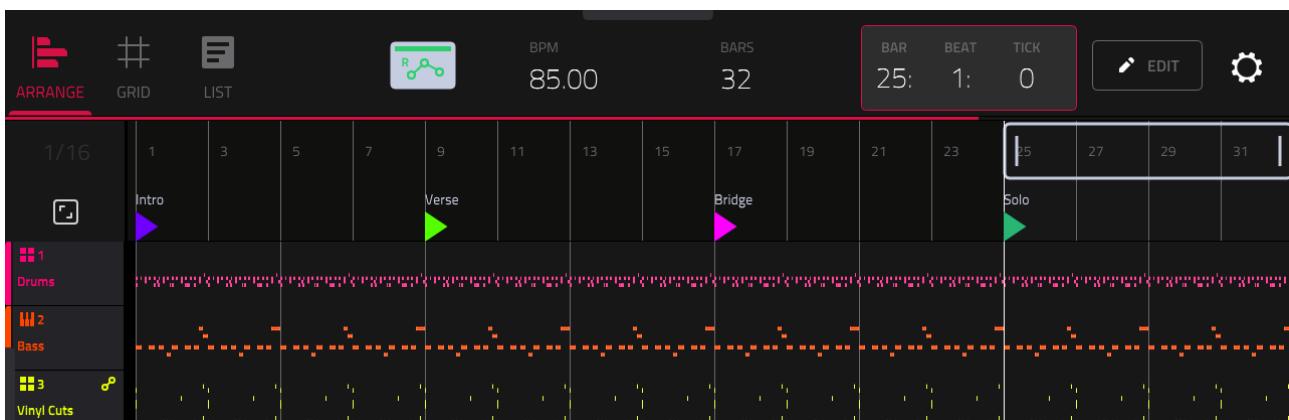


Hit **CLOSE** to return to the **ARRANGE** screen where you can now see both locator points on your timeline:

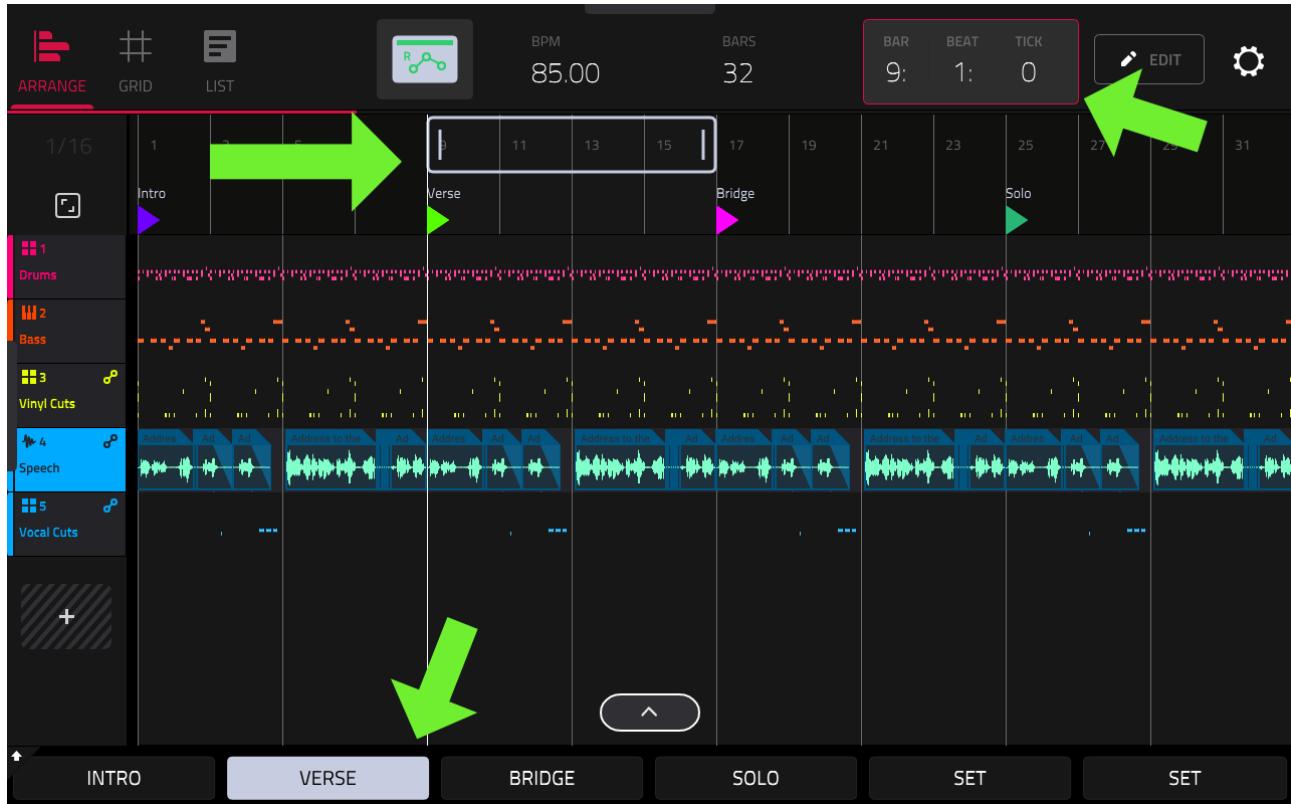
B11: SONG BUILDING WITH THE ARRANGER



Now tap on the time counter and move to bar 17 (**17: 1: 0**). Hold down **[SHIFT]** and hit the **third 'SET' button** to add **Locator 3**. Using the same technique as before, rename this to '**Bridge**'. Finally add a locator point for '**Solo**' at **bar 25** (**25: 1: 0**):



With locator points set, we can now quickly jump to different points in our sequence – for example, hold down **[SHIFT]** and hit **VERSE** to jump to the start of the **Verse** section:



SUBTRACTIVE ARRANGEMENT WITH ERASE

When it comes to creating a subtractive arrangement, the MPC offers us two fundamental methods of 'removing' events from a track.

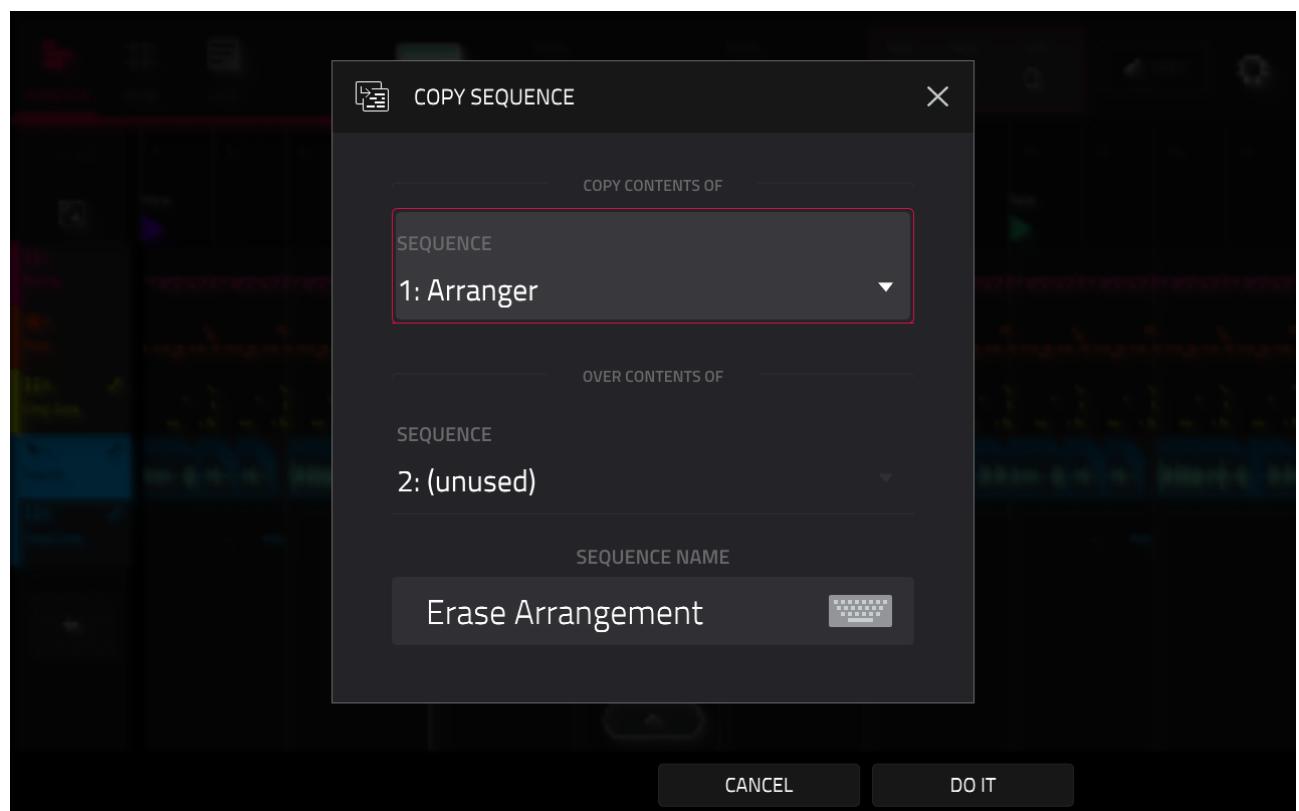
1. Permanently 'erasing' events so they no longer exist in a track
2. 'Muting' events so they remain in your track but are no longer triggered

Erasing is in my opinion the more straight forward option and less prone to confusion, but it is of course 'destructive', so we need to ensure we can always get those deleted notes back should we ever need them.



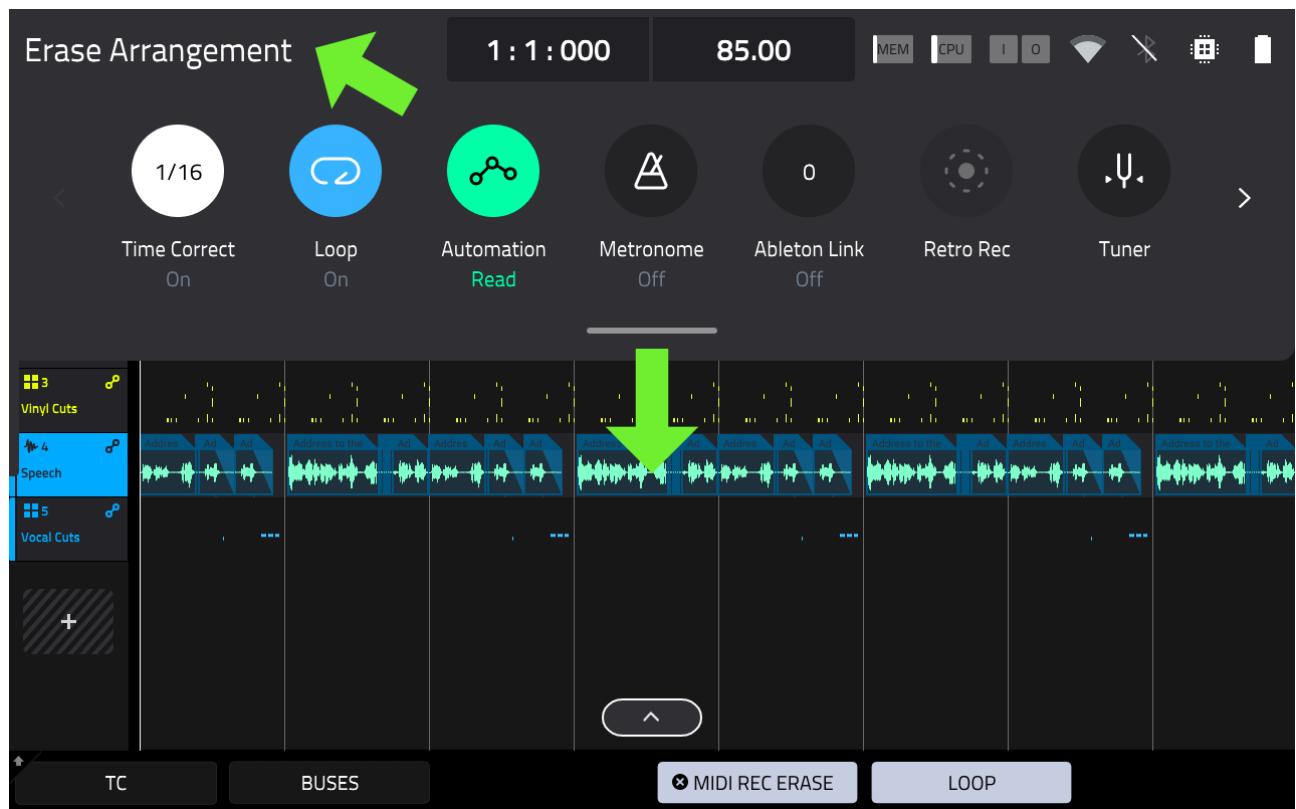
Check out the workshop at the end of this chapter where I create the same subtractive arrangement using nothing but track mutes. In this workshop I'll discuss some of the advantages and potential limitations and pitfalls of using mutes.

The first step before beginning any type of subtractive arrangement is to make a copy of your existing, unedited arrangement. This way we always have a copy of all our tracks before any events were deleted. Tap on the **EDIT** button in the top toolbar and select **COPY SEQUENCE**:



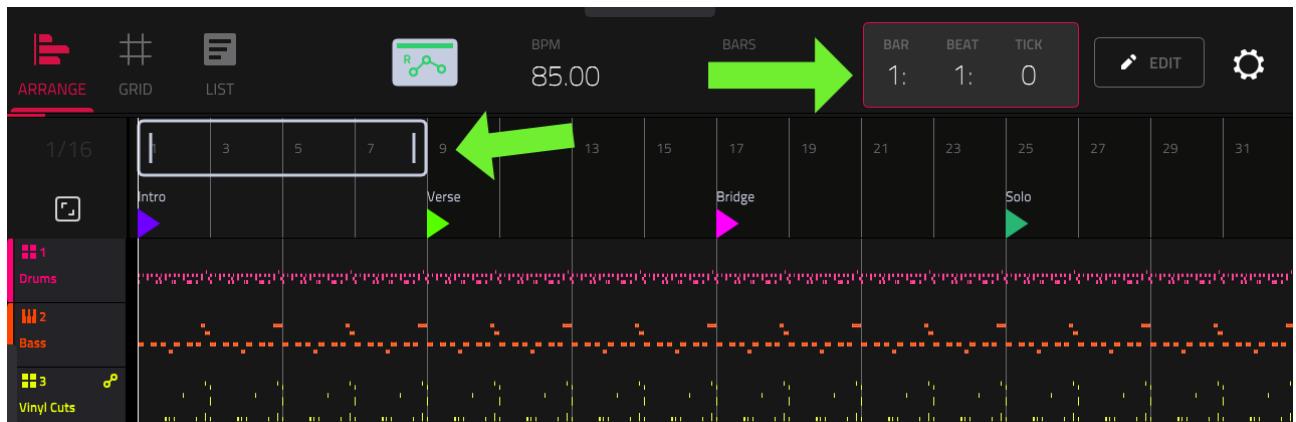
Configure this screen as above, so our current sequence is copied to the **unused sequence 2**, with a new name '**Erase Arrangement**'.

Hit **DO IT** and you'll be taken to this new, duplicate sequence – it's not immediately obvious which sequence is currently selected, so drag down the top pull down menu and you'll see the current sequence name at the top left:



*Consider renaming the unedited version of your sequence (sequence 1) to something like '**Main Theme**' or similar, just so you know it represents the original 'unedited' version.*

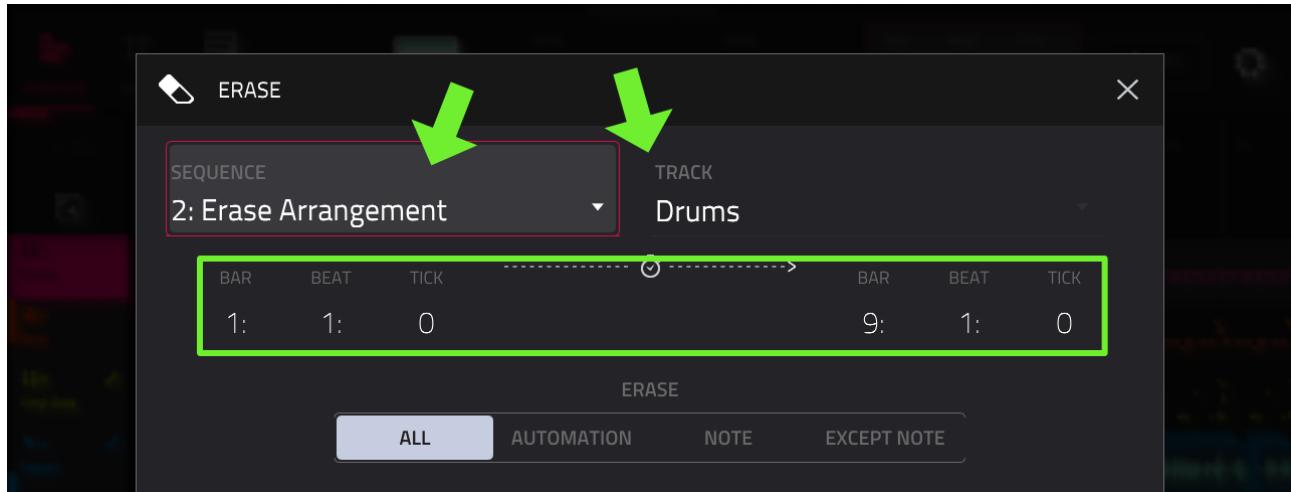
Hold down **[SHIFT]** and press the **INTRO** button:



Notice two things; firstly the time counter is taken back to 1: 1: 0, but also notice that the sequence **LOOP REGION** has been automatically set to cover the start and end of the current sequence region (bars 1-8).

If you hit **[PLAY START]** the sequence will now loop continuously between bars 1 and 8. This allows us to focus entirely on editing this 'Intro' section of the sequence.

Now, one element that defines our intro section is that there will be no drums. To achieve this, we simply erase all events in the **Drums track** (track 1). Make sure **Drums** track 1 is the currently selected track (just single tap anywhere on the track) and press the physical **[ERASE]** button to bring up the **ERASE** dialog:

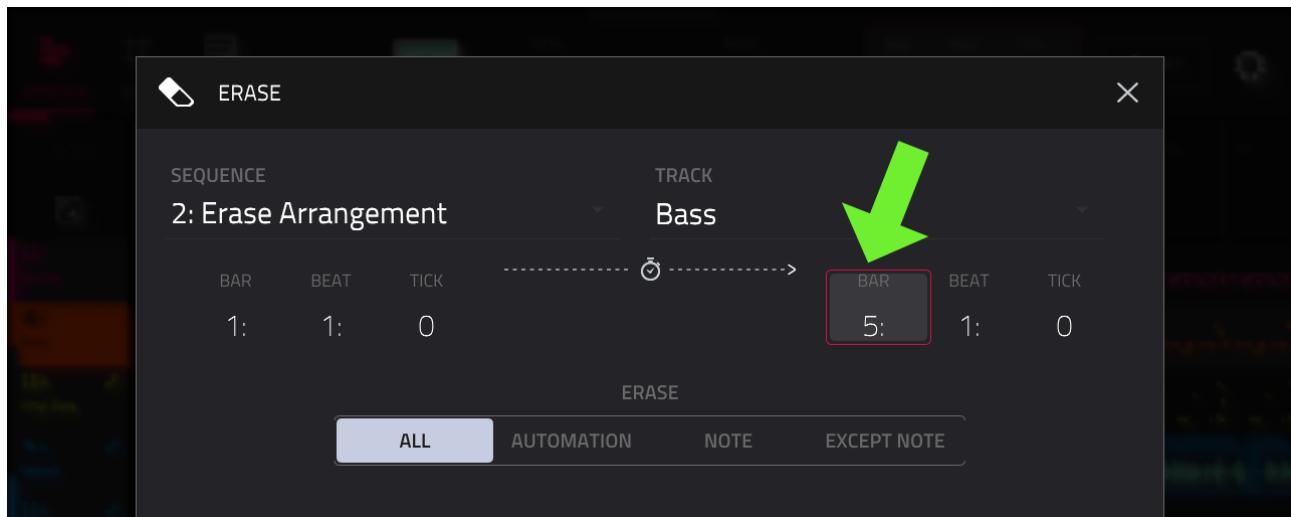


Here you can see many parameters are already configured for us; the ERASE screen will always default to erasing events from the current sequence ('Erase Arrangement') and from the currently selected track ('Drums'). Notice how the 'range' to be erased is automatically set to the current sequence loop points.

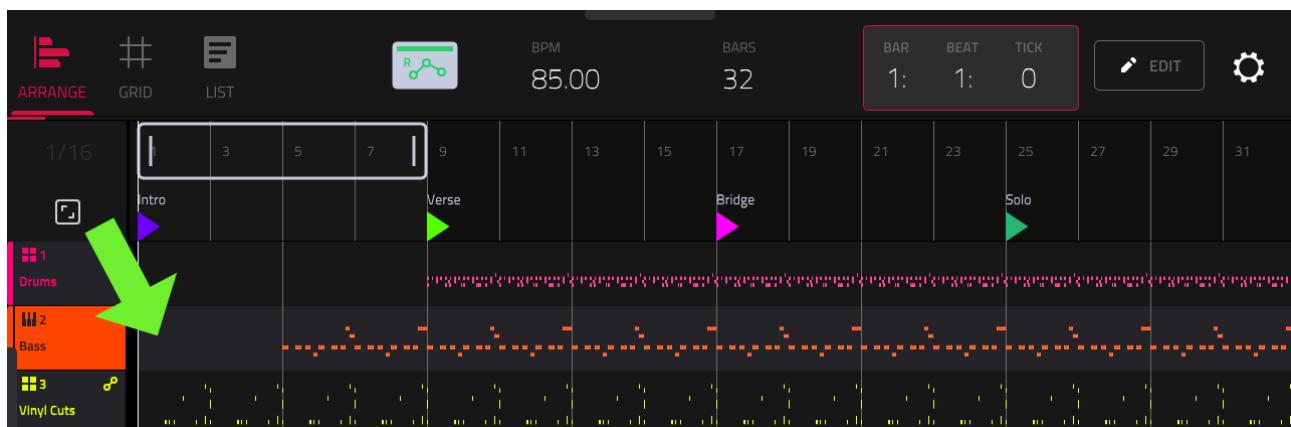
Finally the default is to erase 'ALL' events, which means everything is going to be deleted, all note events, all automation, everything. Hit **DO IT**:



Now we want to delete the first 4 bars of bass on track 2, so just hit [ERASE] but this time set 'to' to **5:1:0**:



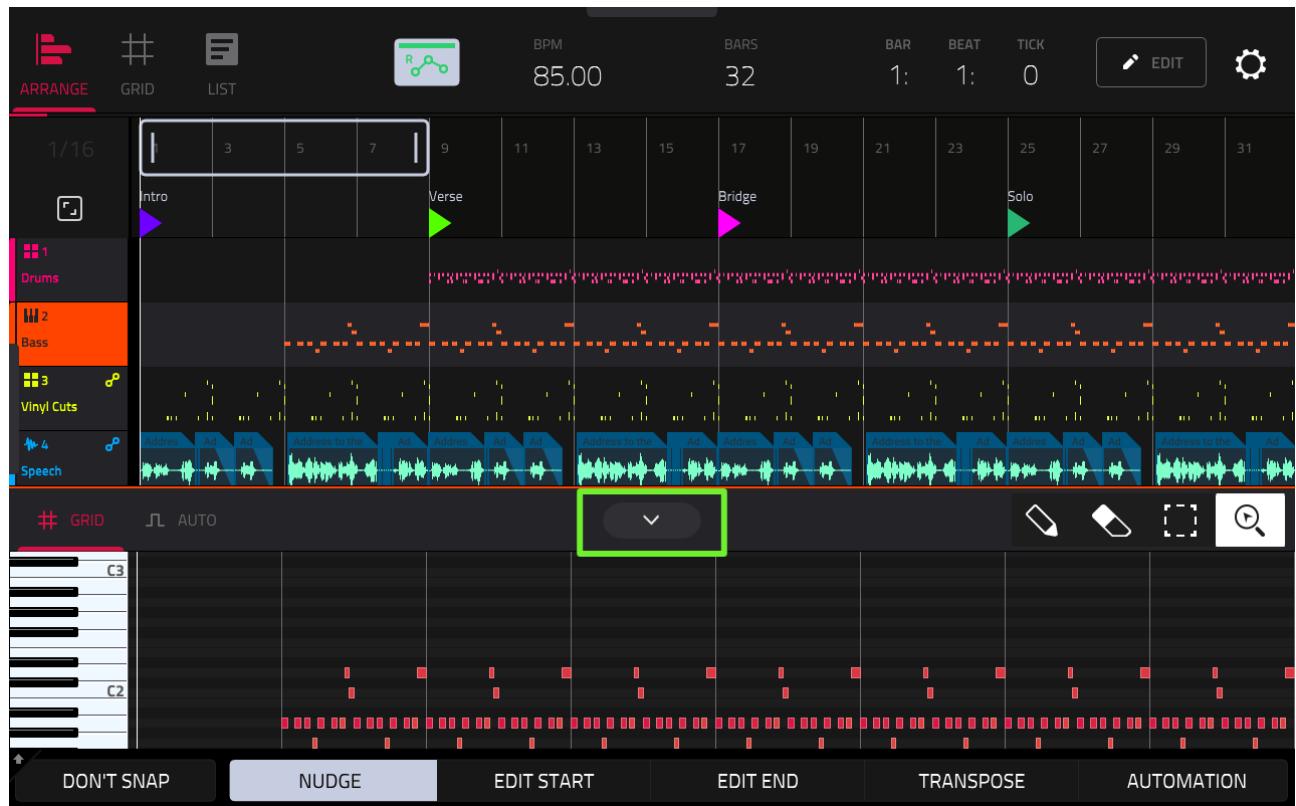
Hit **DO IT**:



Let's also drop the last few bass notes in bar 8, it gives quite a dramatic effect to effectively just leave the speech sample as the only audio playing.

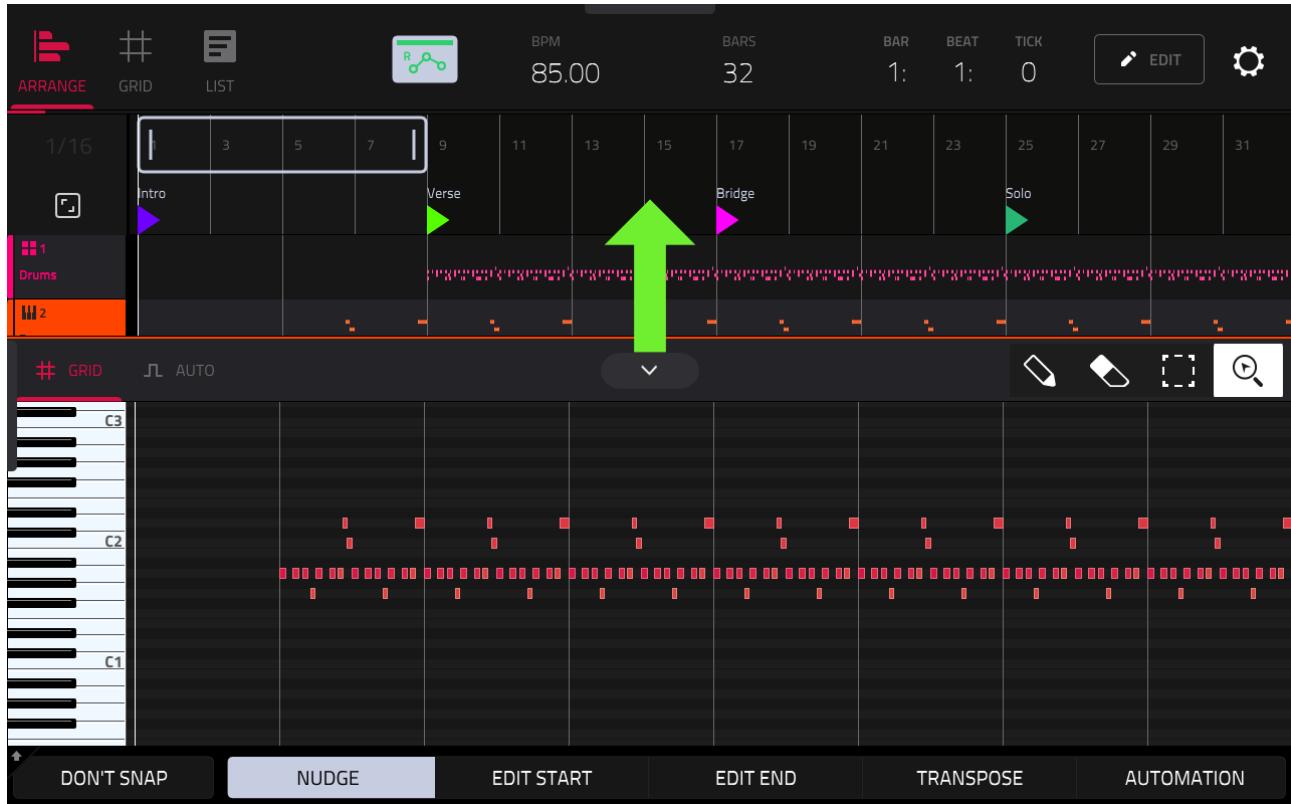
B11: SONG BUILDING WITH THE ARRANGER

We could use ERASE, but let's try a different method. Double tap any of the events on the 'Bass' track and you'll see the arranger screen splits:

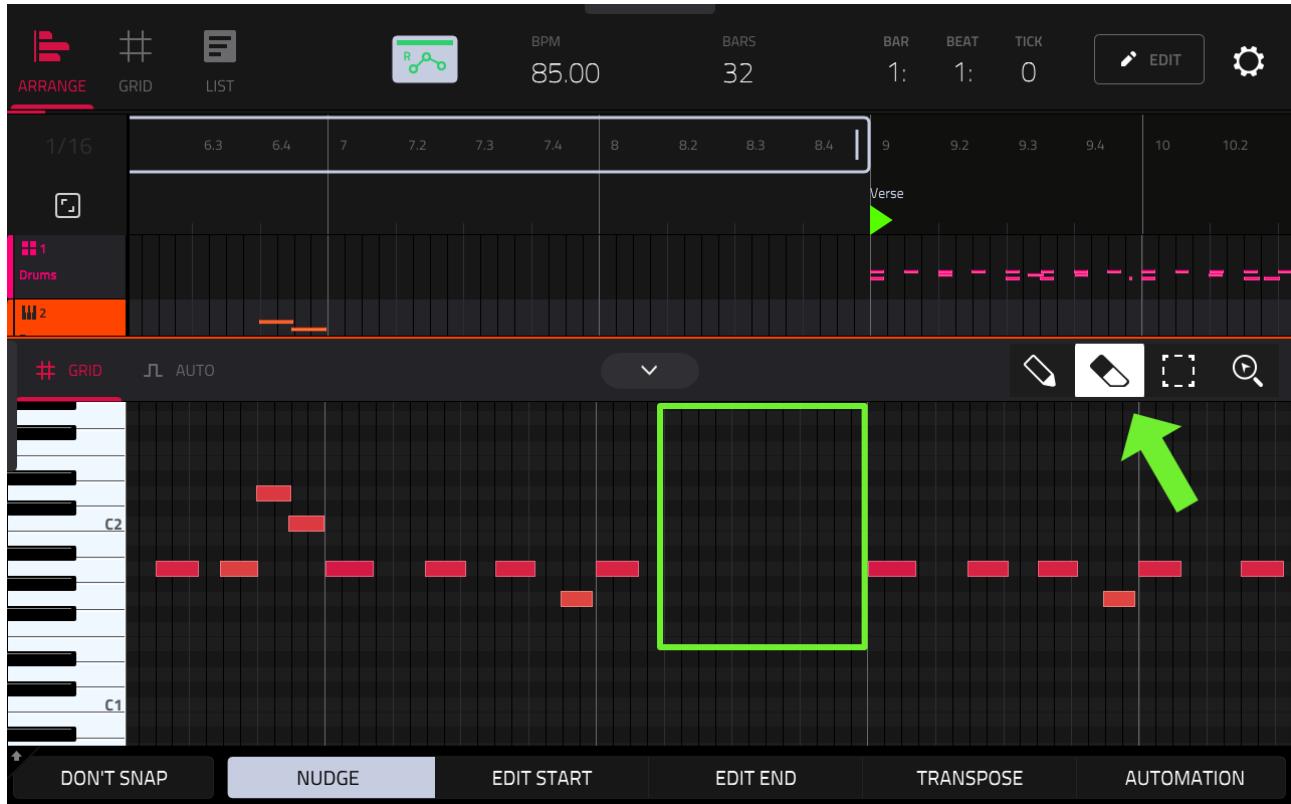


The bottom third of the screen is now showing a slightly modified GRID VIEW for the currently select track. This gives us an opportunity to directly edit the MIDI events on this track without having to leave the arranger. If you wish you can expand the size of the split frame by holding down on the top bar and dragging upwards:

B11: SONG BUILDING WITH THE ARRANGER



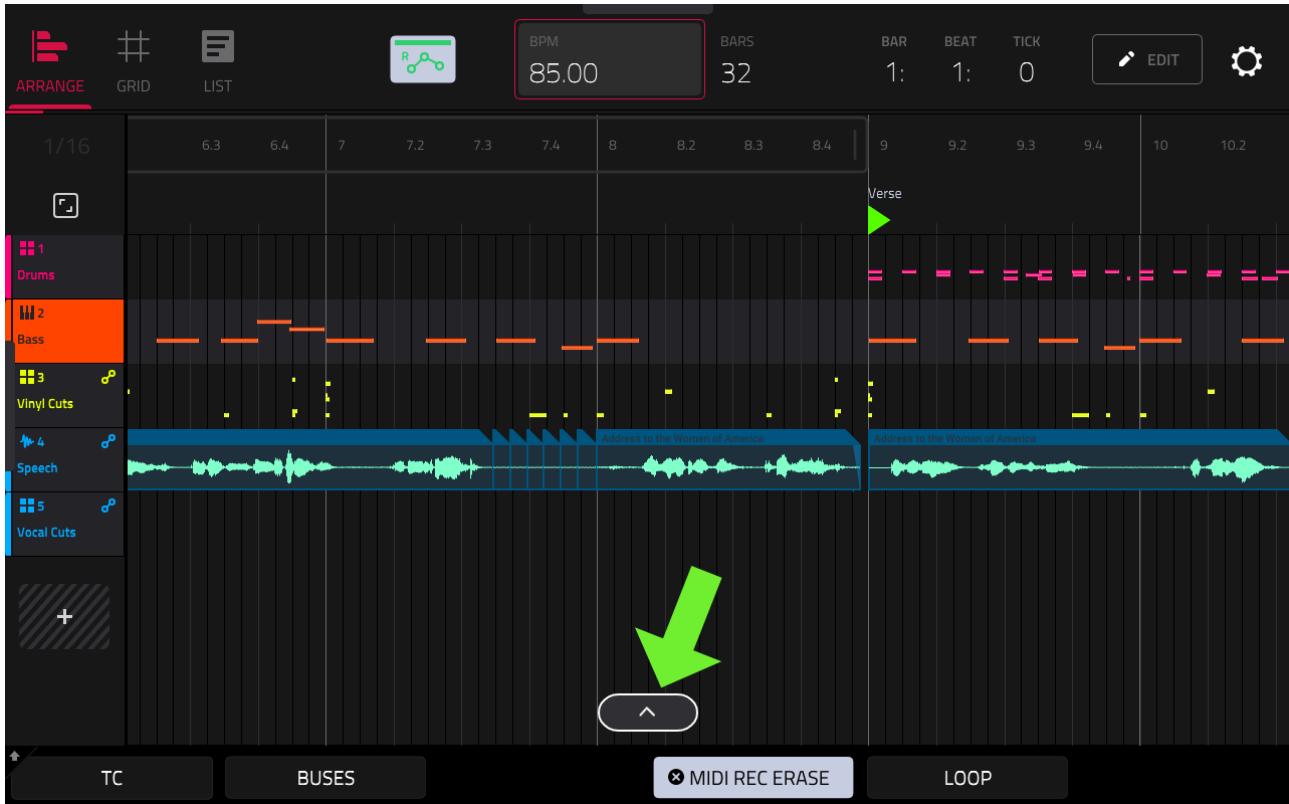
By default, the magnify tool will be selected for GRID VIEW, so magnify the area around bar 8 and select the **eraser tool**. Use the eraser to delete the last three bass notes in bar 8, leave just the single note at **8:1:0**:



You can also use the 'select tool' to drag around the three events and then use [SHIFT] & **DELETE**, but do be aware that the grid position is very sensitive and if you drag anywhere near the edge of the grid it will shoot you off screen very quickly.

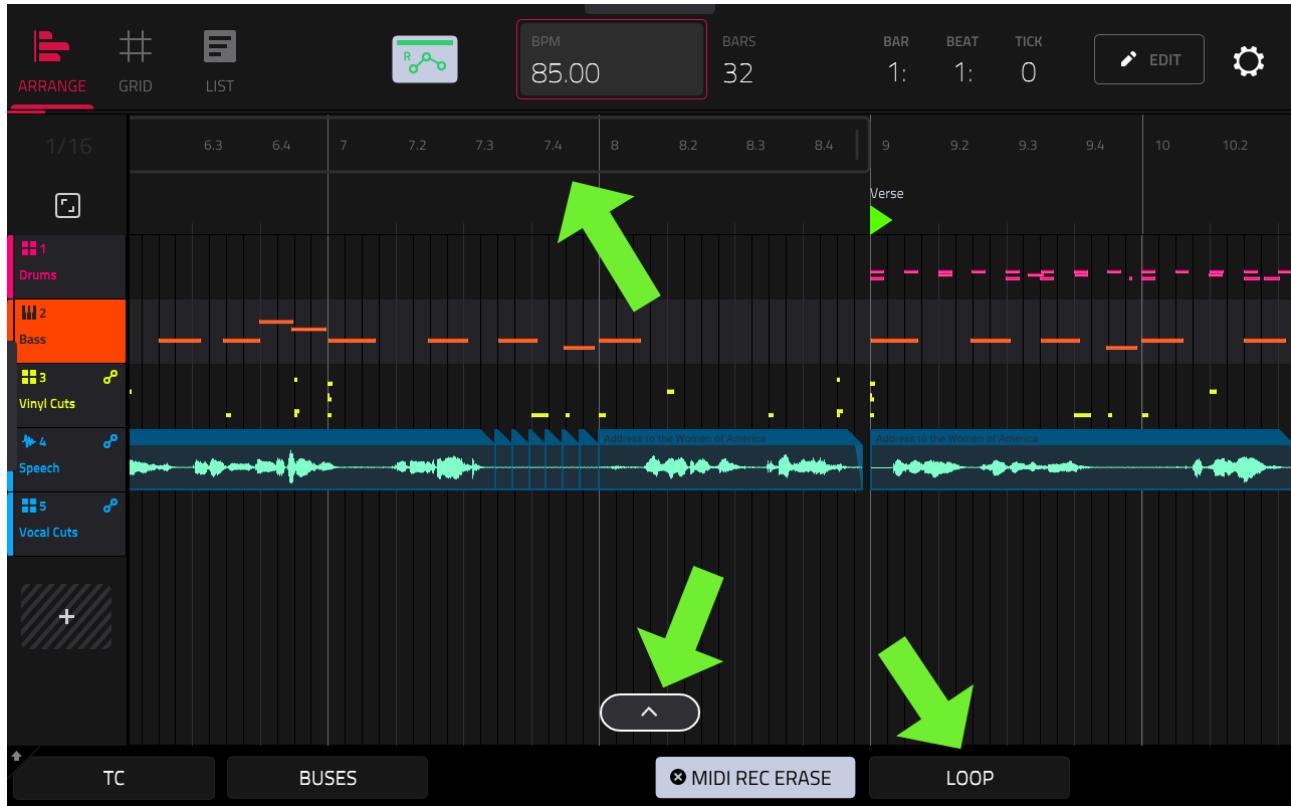
To revert back to full screen Arranger, just tap on the 'down' arrow at the top of the grid edit frame:

B11: SONG BUILDING WITH THE ARRANGER

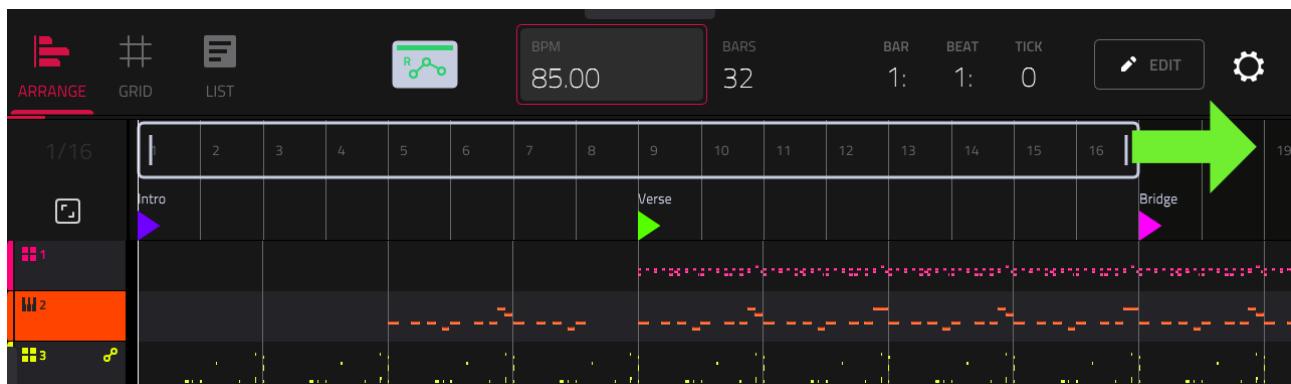


If you want to hear how the transition from 'Intro' to 'Verse' sounds, you'll need to change that bar 1-8 loop so the sequence can play beyond bar 9. The easiest way is just tap on the **LOOP button** on the bottom menu which will turn off sequence looping entirely – notice how there's no longer a loop region at the top of the timeline:

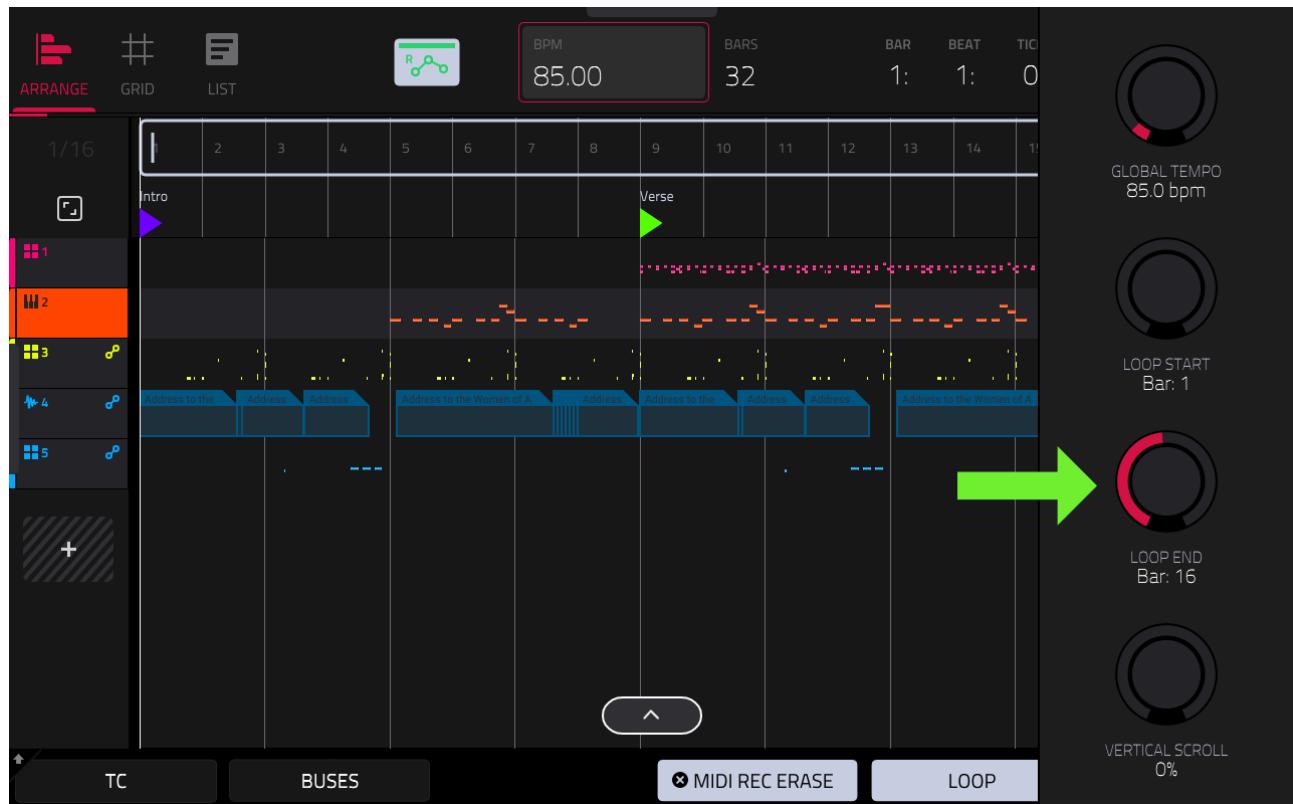
B11: SONG BUILDING WITH THE ARRANGER



Alternatively leave loop 'on' and manually adjust the loop region – you can tap and hold on the end of the region and 'drag' it to the right (up to bar 17):



Or you can use (Q-LINK 5) to control the LOOP END point – this is the second from bottom Q-LINK dial in the first Q-LINK bank:



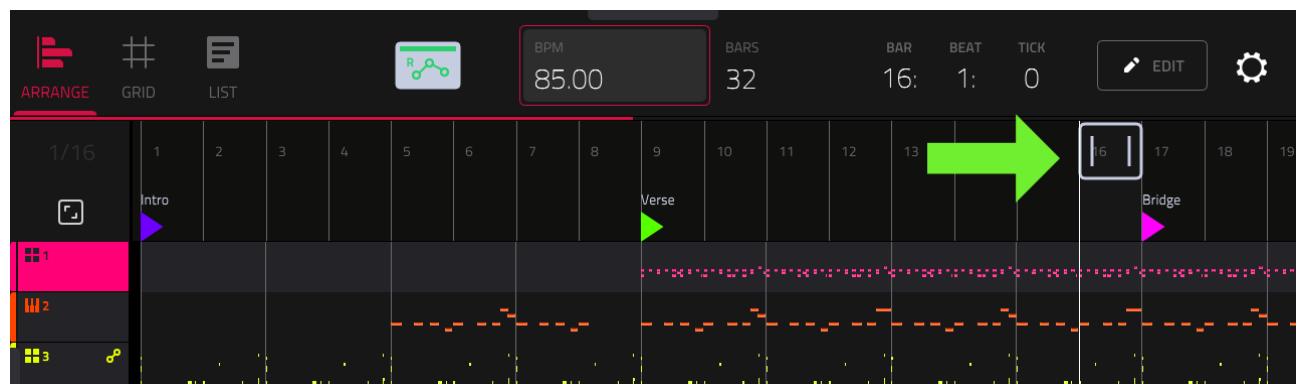
Now hit [**PLAY START**] and the sequence will loop between bars 1 to 16.

EDITING THE VERSE

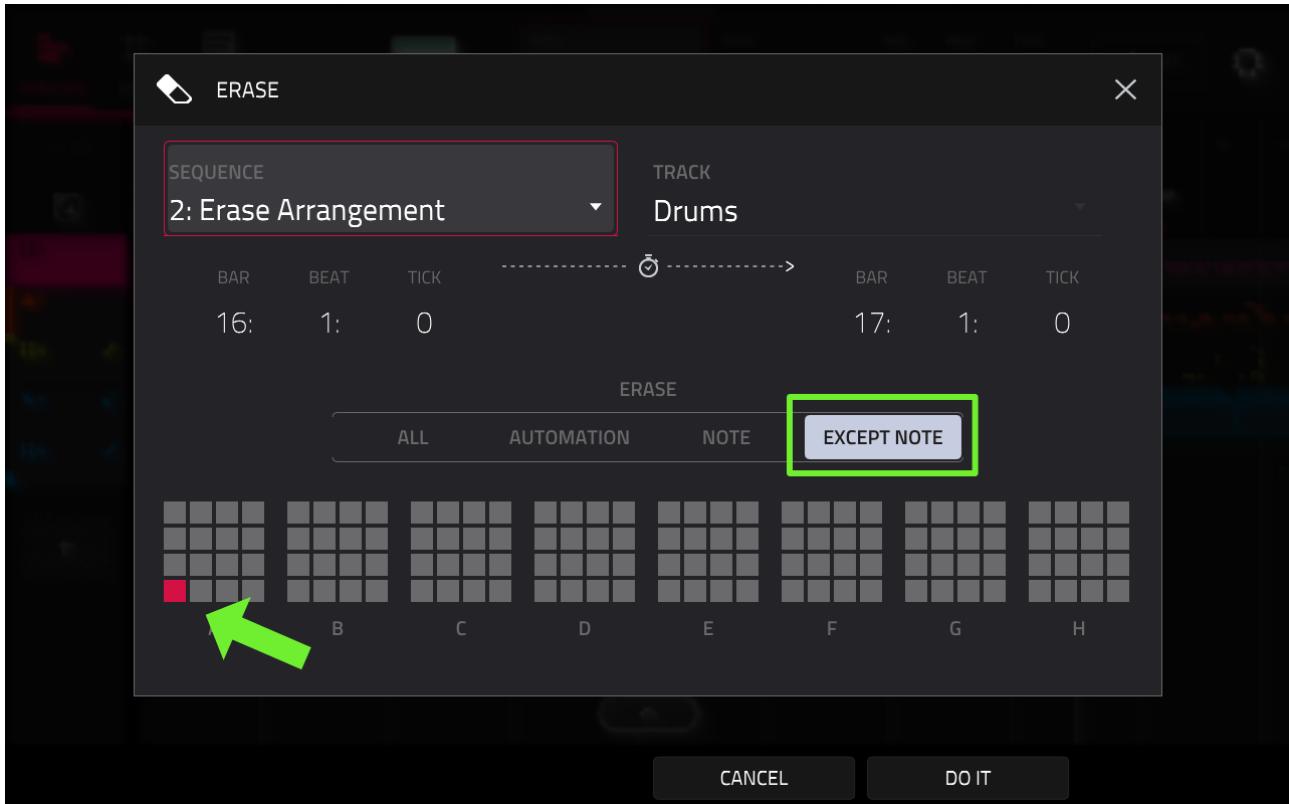
The Verse is basically all the tracks in our main 'theme' that we've been working on in this section. It leads into the 'Bridge' where we're going to drop out the drums again while we gradually build the tension into the more explosive 'Solo' section.

Press [**SHIFT**] and **VERSE** to set the playhead to **9:1:0**. All I want to change with the Verse is to drop out the drums in the last bar (bar 16), which will act like an precursor to the 'drum-less' bridge.

Tap on **track 1 (Drums)** to select it. As before we can just hit [**ERASE**] but this time configure it to just **erase bar 16**. If you wish, drag the LOOP region to 'start' at bar 16:



Now press [**ERASE**] and only bar 16 will be selected as the erase range. This time, under **ERASE**, choose **EXCEPT NOTE**:



Hit pad **[A01]** to select the kick drum, it will show in red on the on screen pad graphics and on the physical pad itself. Now when we erase this part of track 1 (bar 16), all events will be deleted *apart from the A01 kick events*.

Hit **DO IT** and **[PLAY START]** to hear the result.

CREATING THE BRIDGE & SOLO

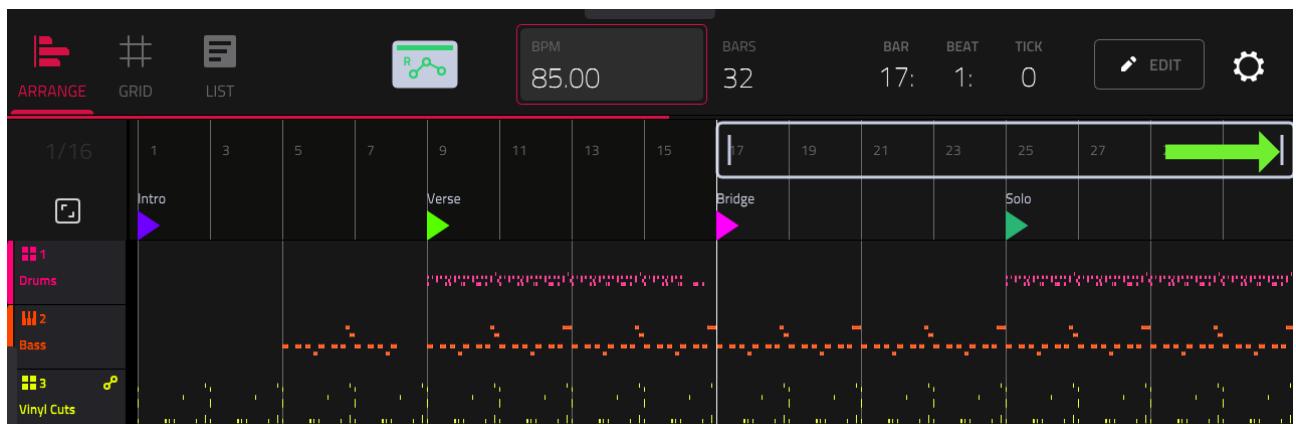
The bridge is going to start building to a solo section using some additional sounds and instrumentation (which we will add in the next chapter). In the meantime we can prepare the bridge by removing some elements.

Hold down [SHIFT] and press **BRIDGE** so the loop region encloses the entire bridge section. Select 'Drums' (track 1), hit [**ERASE**] and delete 'ALL' events from the entire Bridge section:

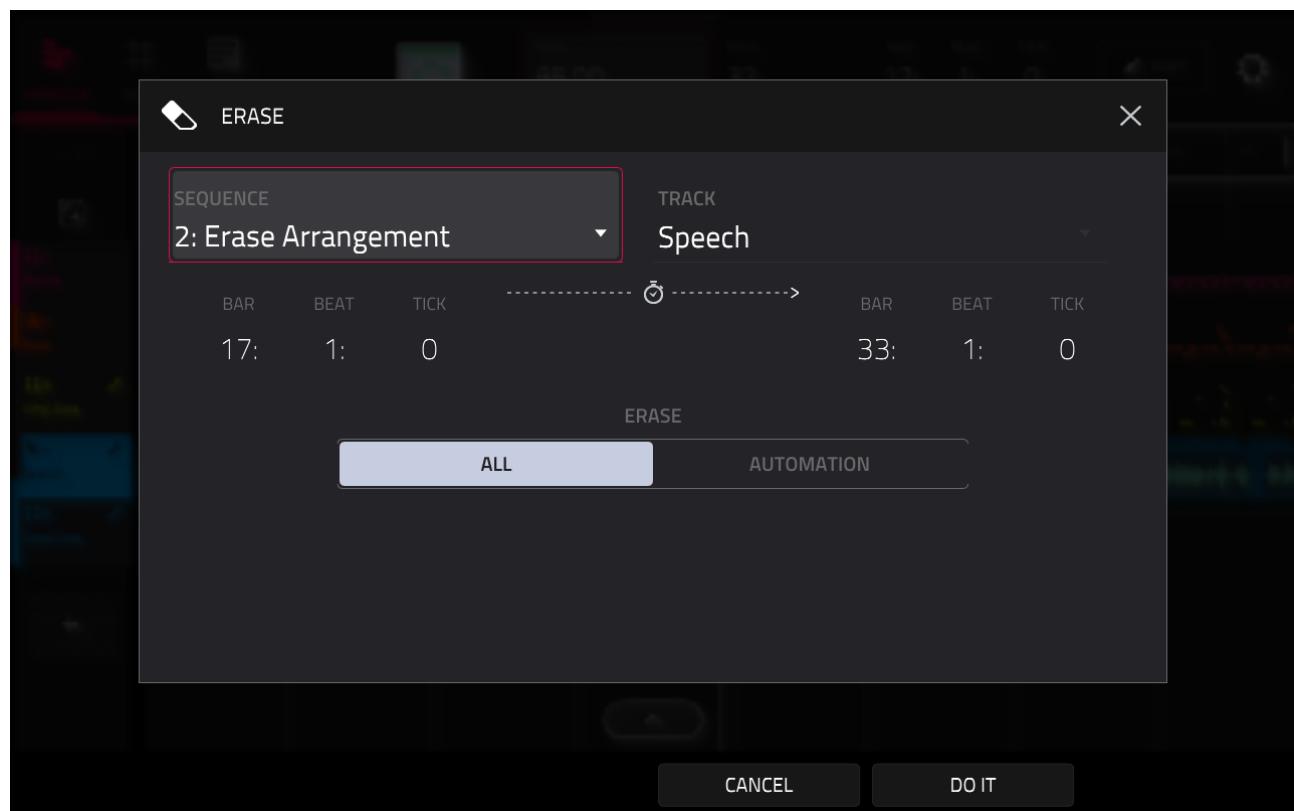


Next I want to remove the **Speech** track from this part of the song, which unlike our previous examples, is an audio track. However, we can still use the [**ERASE**] button for this.

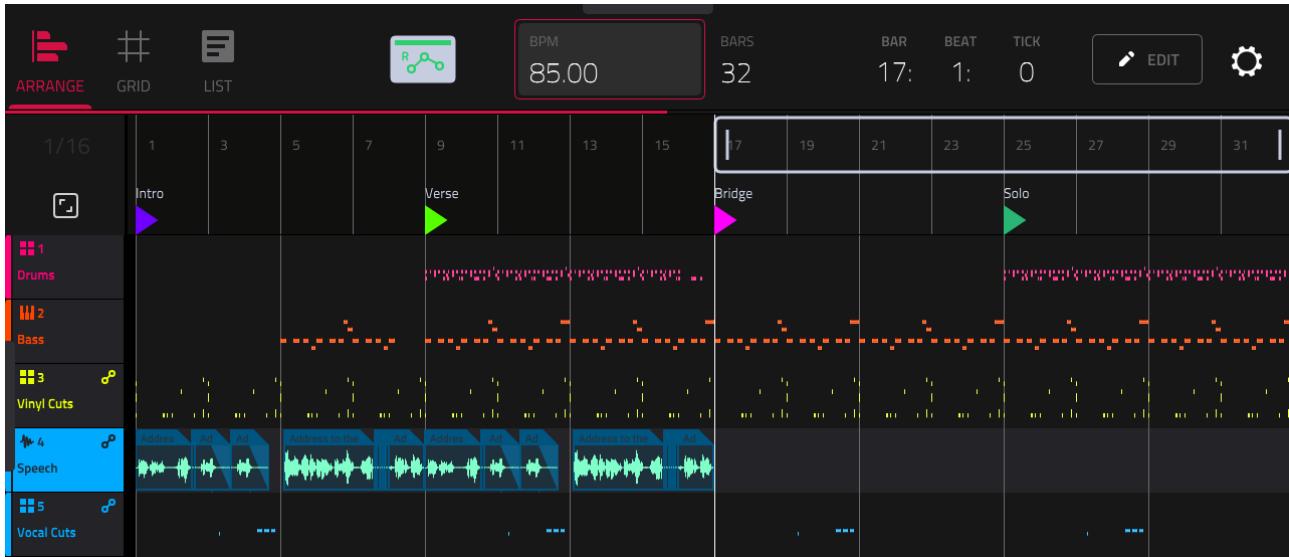
However I actually want to remove the 'Speech' track from both the bridge *and* solo section as the lead solo is going to fill the void left by the loss of the speech audio. So let's extend the loop region to the end of **bar 32** by dragging it or using (Q-LINK 5).



Now we can easily edit the bridge and the solo sections together as one long section. Hit [ERASE] and this time you'll see the ERASE section for an audio track is a little simpler compared to a MIDI type track:



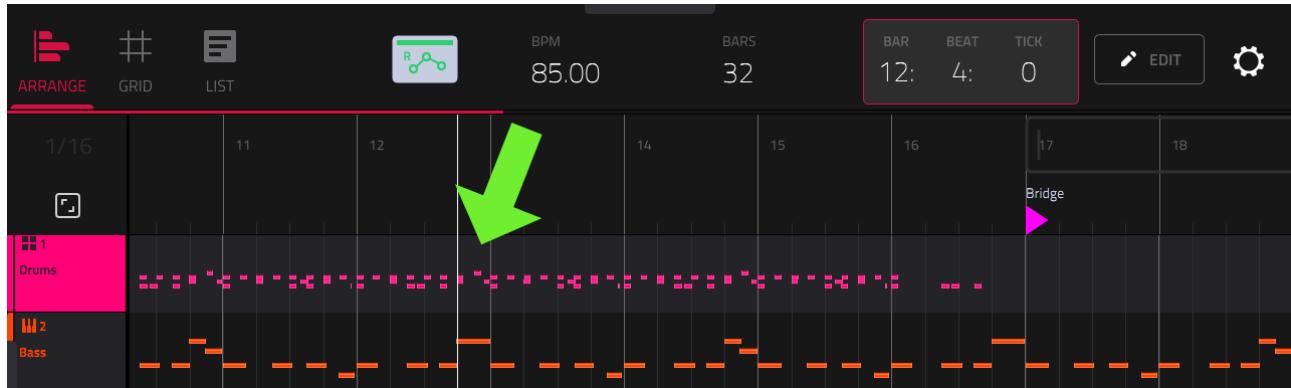
Hit **DO IT** to delete all the Speech track between bars 17 to 32:



ADDING 'BACK' A DRUM FILL

After listening to the bridge, I think it would sound good to have that little drum fill just before the solo kicks in at bar 25. Of course here we see the downside of erasing notes as the drum fill events on track 1 ('Drums') are no longer there!

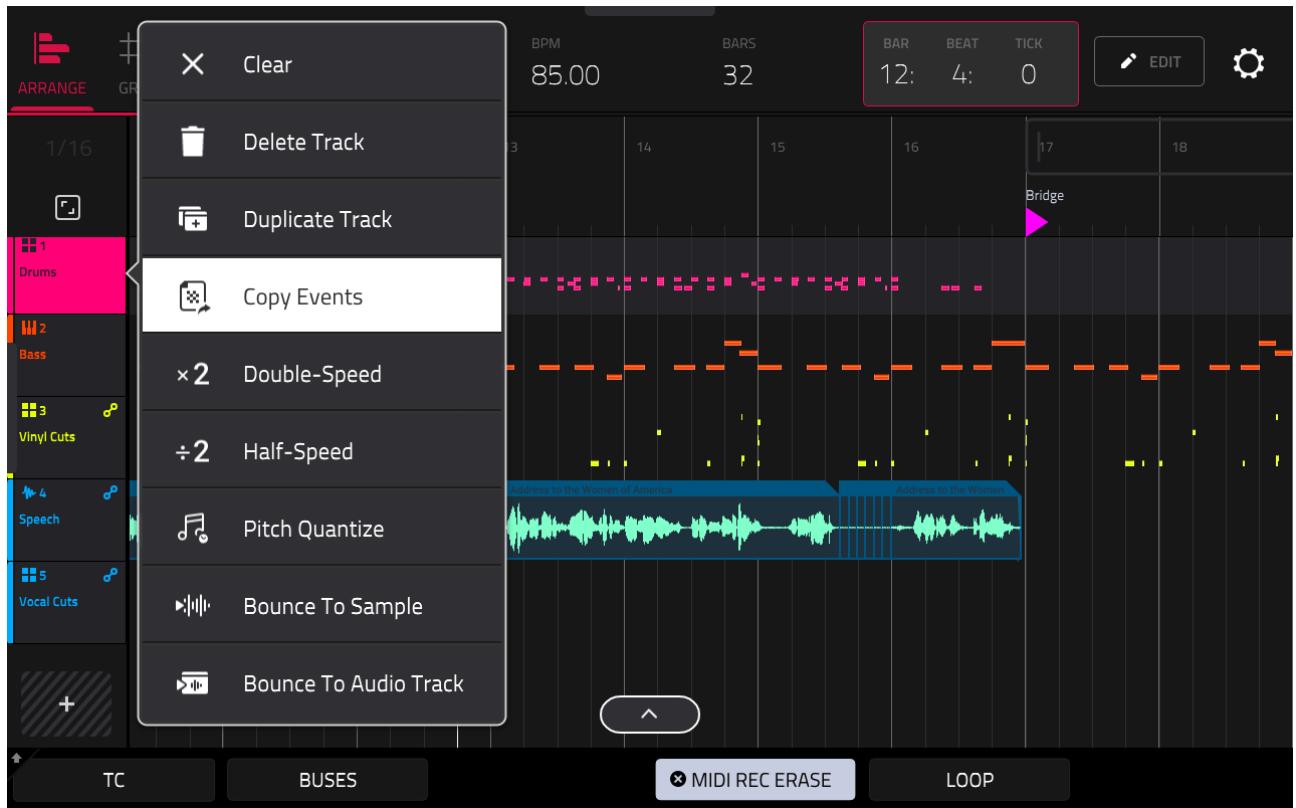
This isn't really a problem as we can easily add this back by copying the drum fill events from a part of the sequence where they still exist. Turn off LOOP for the moment and set the playhead to location **12: 4: 0:**



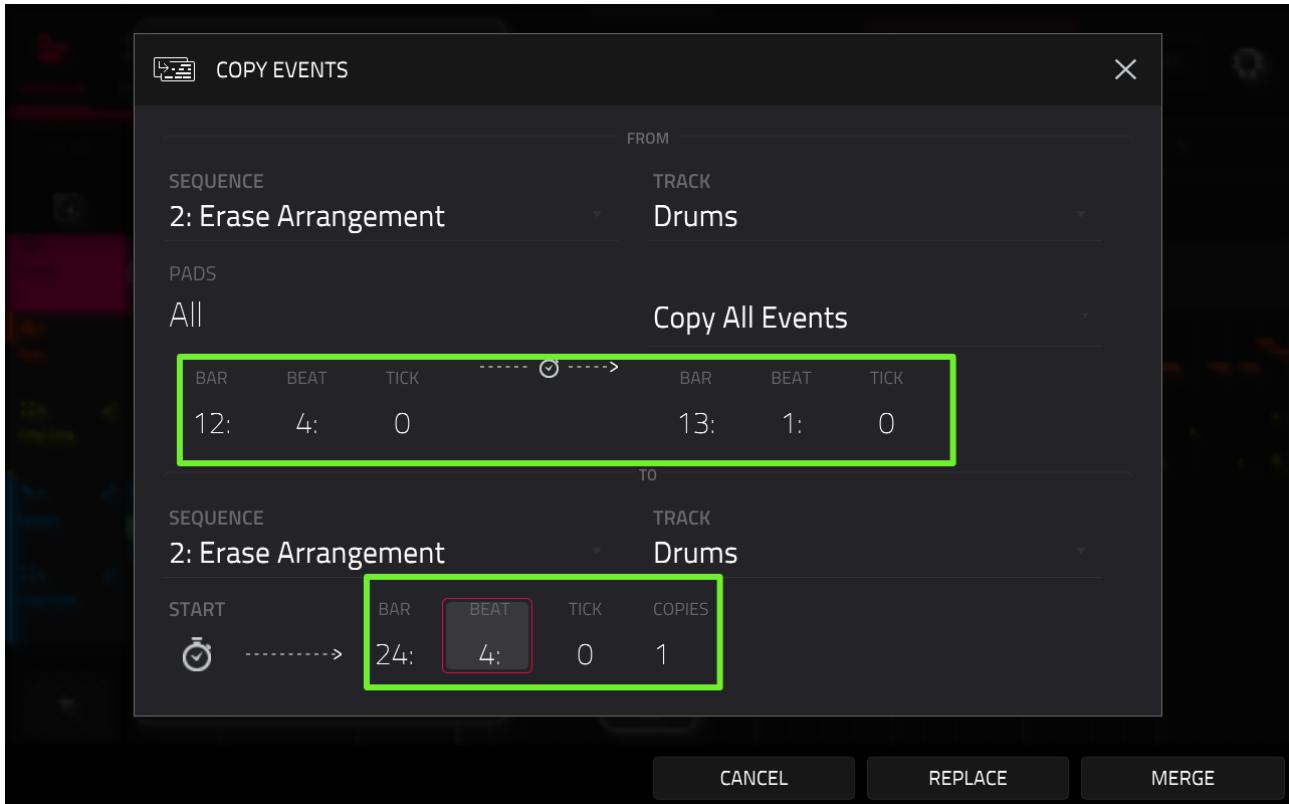
Press [**PLAY**] (not play start) to play the sequence from this point. This is where the drum fill occurs – we simply want to copy and paste these events to the same place in bar 24 (**24: 4: 0**).

Hit the **EDIT** button from the top toolbar and select **COPY EVENTS**. Alternatively, press and hold on the track header block to reveal the track edit dialog:

B11: SONG BUILDING WITH THE ARRANGER



Select **Copy Events**:



Unlike the ERASE screen, **COPY EVENTS** does not automatically fill with your current playhead position, so you'll have to enter all the details as shown above, so the range should be **12: 4: 0 to 13: 1: 0**, and the destination start time should be **24: 4: 0**. You can hit **REPLACE** or **MERGE** to perform the copy, as there are no events at the target time location.



If the events you want to copy no longer exist in the current sequence then you could copy the events from any other sequence in your project ('copy events' supports copying to and from different sequences) - this is why I always recommend making a copy of your main theme or unedited arrangement to a separate sequence in your project!

Preview the entire sequence so far – don't forget to save your entire project to your own Projects folder if you'd like to keep a copy of your own arrangements. You can also load up my version of the project so far from the chapter **B11** folder, **B11 Subtractive Arrangement.xpj**. In this project, sequence 1 is my 'unedited' 32 bar theme, and sequence 2 is the 'Erase Arrangement' we just created.

In chapter **B12** we're going to add the acid lead solo, some additional instrumentation and sound FX and a little automation to really bring the song together.

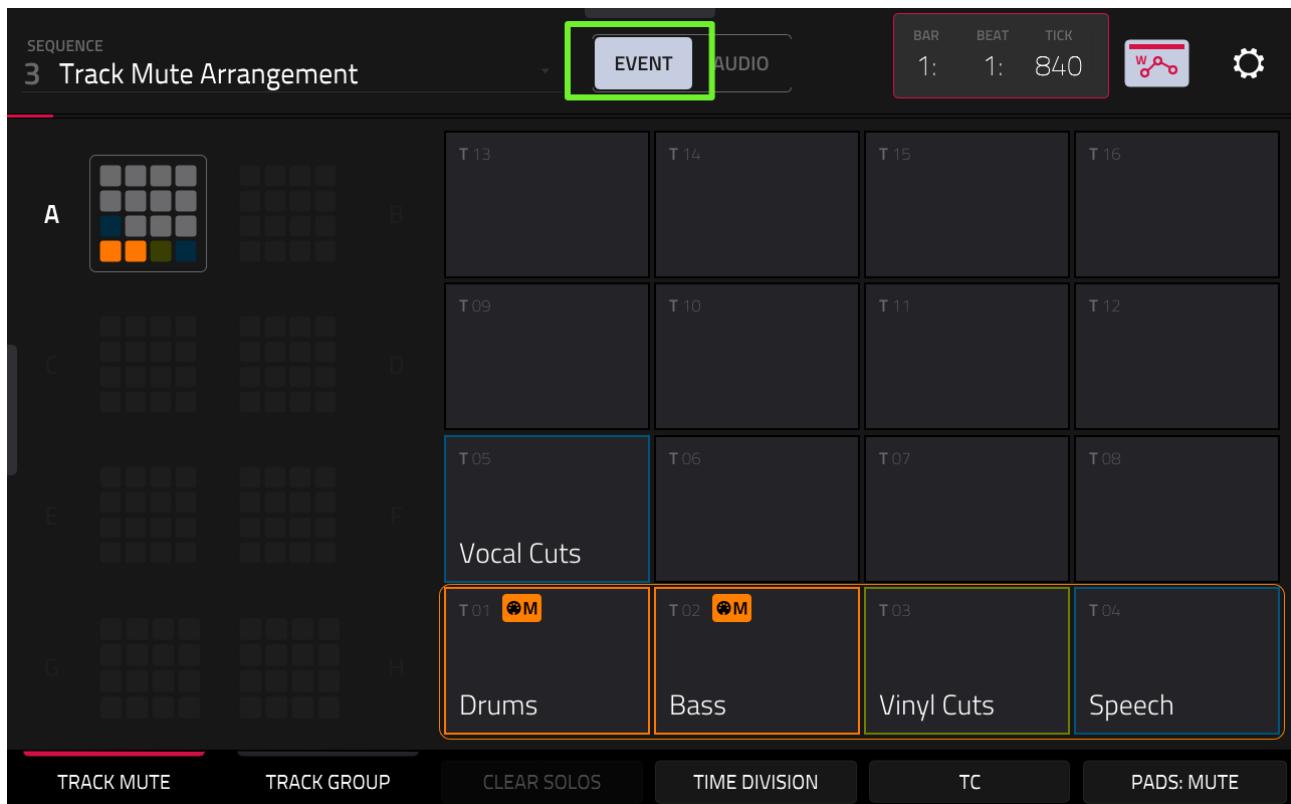
WORKSHOP: SUBTRACTIVE ARRANGEMENT WITH TRACK MUTES

Select **sequence 3, 'Track Mute Arrangement'**, this is an almost identical arrangement to the '**Erase Arrangement**' sequence but all 'subtractive' elements were created entirely with track mutes, hence no events were actually erased.

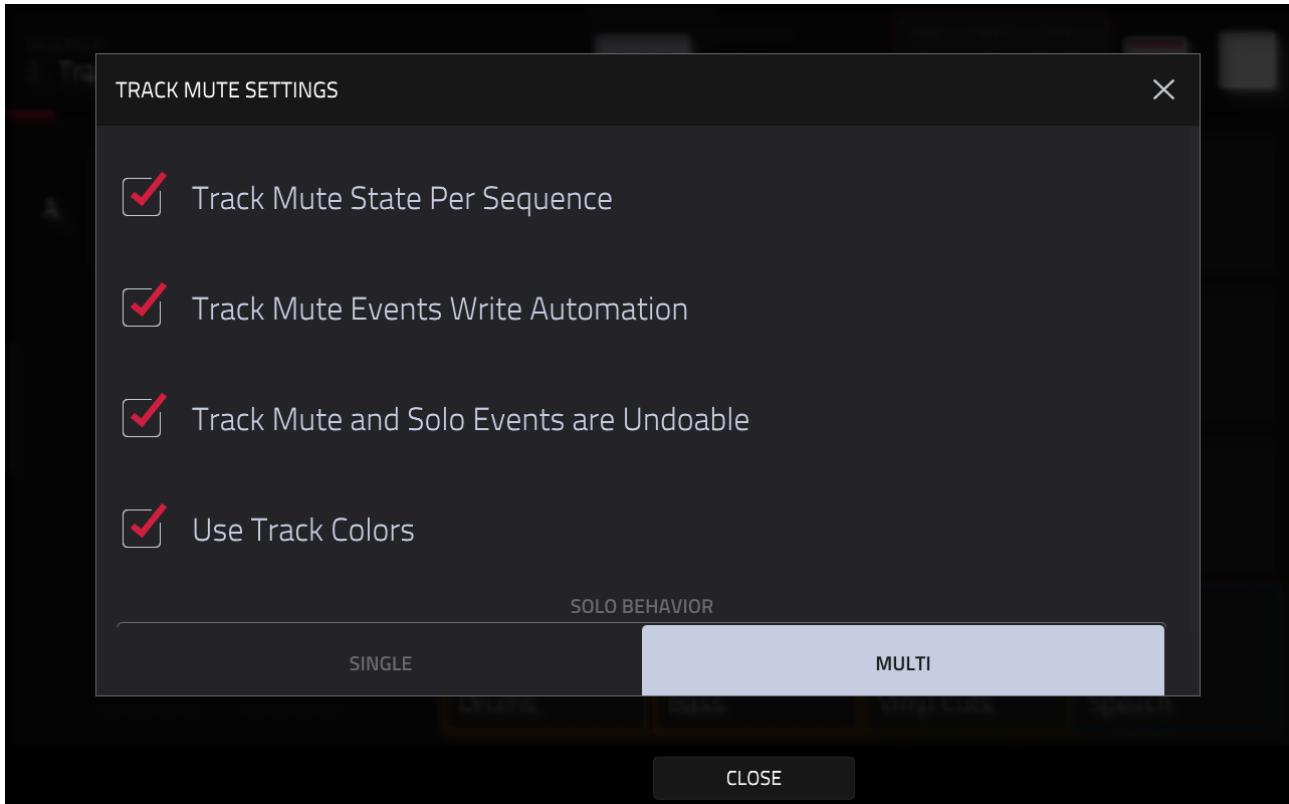
As discussed previously in this chapter, we generally prefer to use '**event**' mutes when subtracting elements from a song, otherwise we find decay tails get abruptly cut off or have a habit of suddenly appearing when 'unmuting a track.

To achieve this, head to [**MENU**] > **TRACK MUTE** and ensure **EVENT** is enabled at the top of the screen:

B11: SONG BUILDING WITH THE ARRANGER



Remember to ensure that track note events are 'undoable':



Beyond that, this arrangement is actually fairly simplistic in terms of the number of tracks being muted at any given moment in time, so using TRACK GROUPS or 'solo' is not necessary - these are typically more useful in a live situation where the pressure is on to simultaneously mute tracks on command.

First, enable **AUTOMATION: WRITE**. The arrangement starts with muted drums and bass, so enable **event mutes** on both those tracks and then hit **[PLAY START]**. Then simply enable and disable mutes as required while the sequence plays.

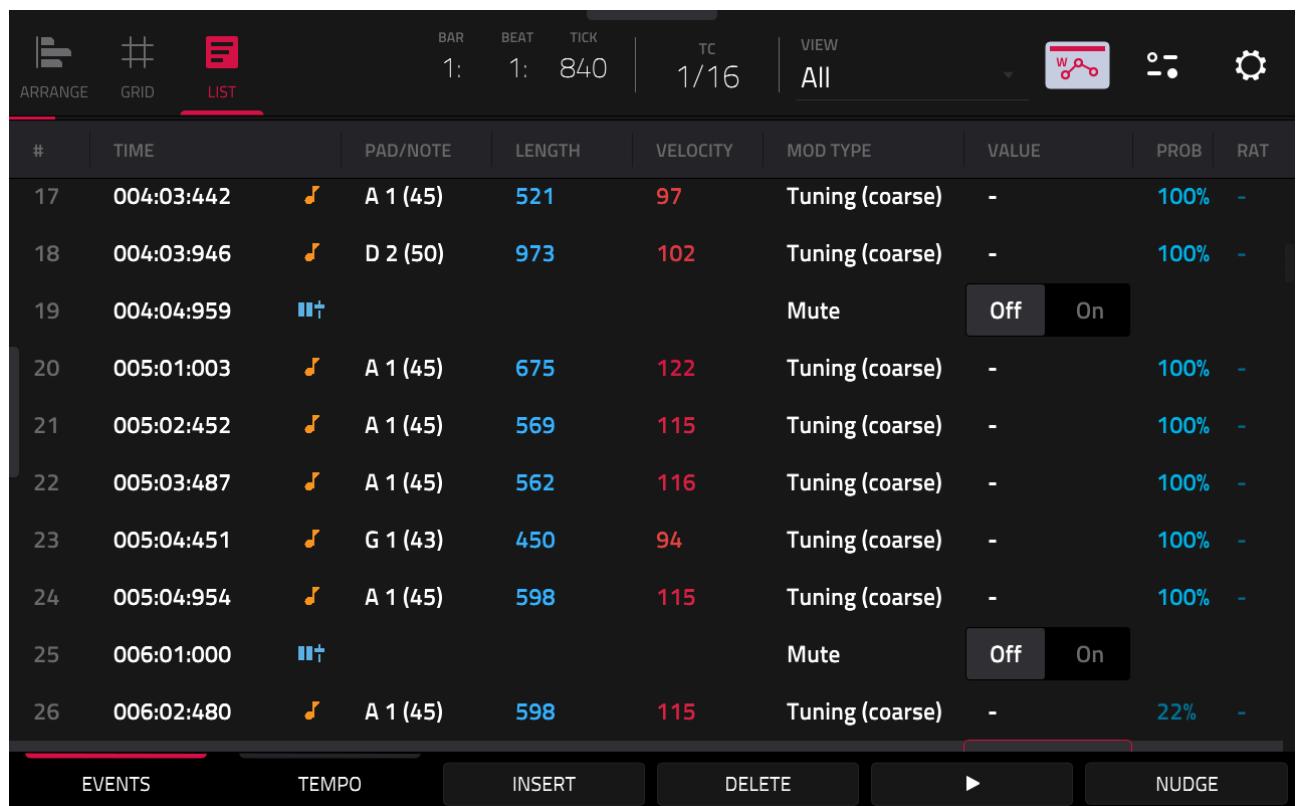
If you make a mistake, hit **[STOP]**, **[UNDO]**, wind the time counter back a little, hit **[PLAY]**, try again. You don't have to write the track mutes for the entire sequence in one attempt, you can keep stopping and planning

ahead – remember to set **AUTOMATION** back to '**READ**' if you are only testing out ideas.

TRACK MUTING PROS & CONS

In terms of initially laying down the mutes, the process is arguably more intuitive than 'erasing' – it feels more creative, and of course it has the advantage of leaving the underlying MIDI events in place. The problems I have with mutes currently release to three areas.

Firstly, I find '**UNDO**' to be somewhat unreliable, some mutes just refuse to 'undo' themselves and it's easy to get into a muddle. It's at this point that I often find myself heading over to **LIST EDIT** where I have to manually 'fix' any unwanted mutes.



The screenshot shows the MPC Software's List Editor interface. The top bar displays navigation icons (ARRANGE, GRID, LIST), time signature (1:1), tempo (840 BPM), time code (1/16), and a view dropdown set to 'All'. To the right are additional controls for automation and settings. The main area is a table listing 10 MIDI events:

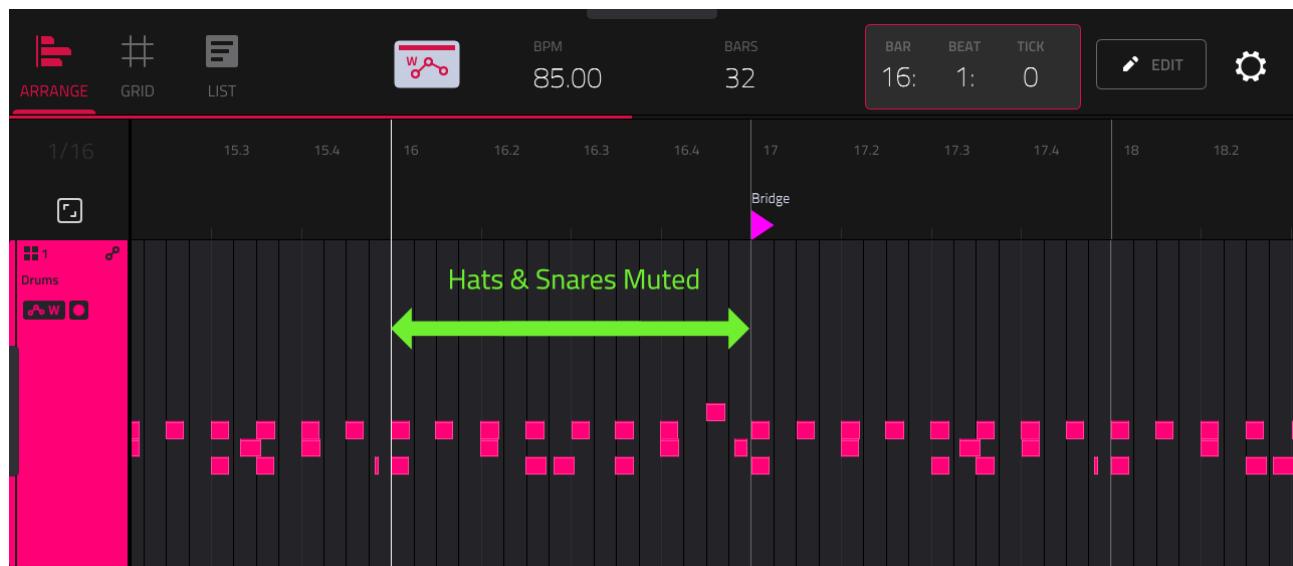
#	TIME	PAD/NOTE	LENGTH	VELOCITY	MOD TYPE	VALUE	PROB	RAT
17	004:03:442	♪ A 1 (45)	521	97	Tuning (coarse)	-	100%	-
18	004:03:946	♪ D 2 (50)	973	102	Tuning (coarse)	-	100%	-
19	004:04:959	♫+			Mute	Off	On	
20	005:01:003	♪ A 1 (45)	675	122	Tuning (coarse)	-	100%	-
21	005:02:452	♪ A 1 (45)	569	115	Tuning (coarse)	-	100%	-
22	005:03:487	♪ A 1 (45)	562	116	Tuning (coarse)	-	100%	-
23	005:04:451	♪ G 1 (43)	450	94	Tuning (coarse)	-	100%	-
24	005:04:954	♪ A 1 (45)	598	115	Tuning (coarse)	-	100%	-
25	006:01:000	♫+			Mute	Off	On	
26	006:02:480	♪ A 1 (45)	598	115	Tuning (coarse)	-	22%	-

Below the table are buttons for EVENTS, TEMPO, INSERT, DELETE, NUDGE, and a large play/pause button.

There is of course nothing particularly creative about picking through a bunch of automation events in LIST EDIT!

The other issue is due to the limitation that once an area of a track has been muted, it's no longer possible to play or overdub any additional notes to that part of the track.

Take for example **bar 16** where the **Drums** track is muted:



In the 'erase' version I erased all events other than the kicks (i.e.. the hats and snares). With track mutes it's not possible to mute individual elements of a track, but it's also not possible to overdub some kicks back in as the entire track is silenced at this point.

Or perhaps you think 'oh, a snare roll would be nice there' but as the entire track is muted it's not possible to actually hear any snares that you try to overdub there. You'll see the overdubbed events, but there's no

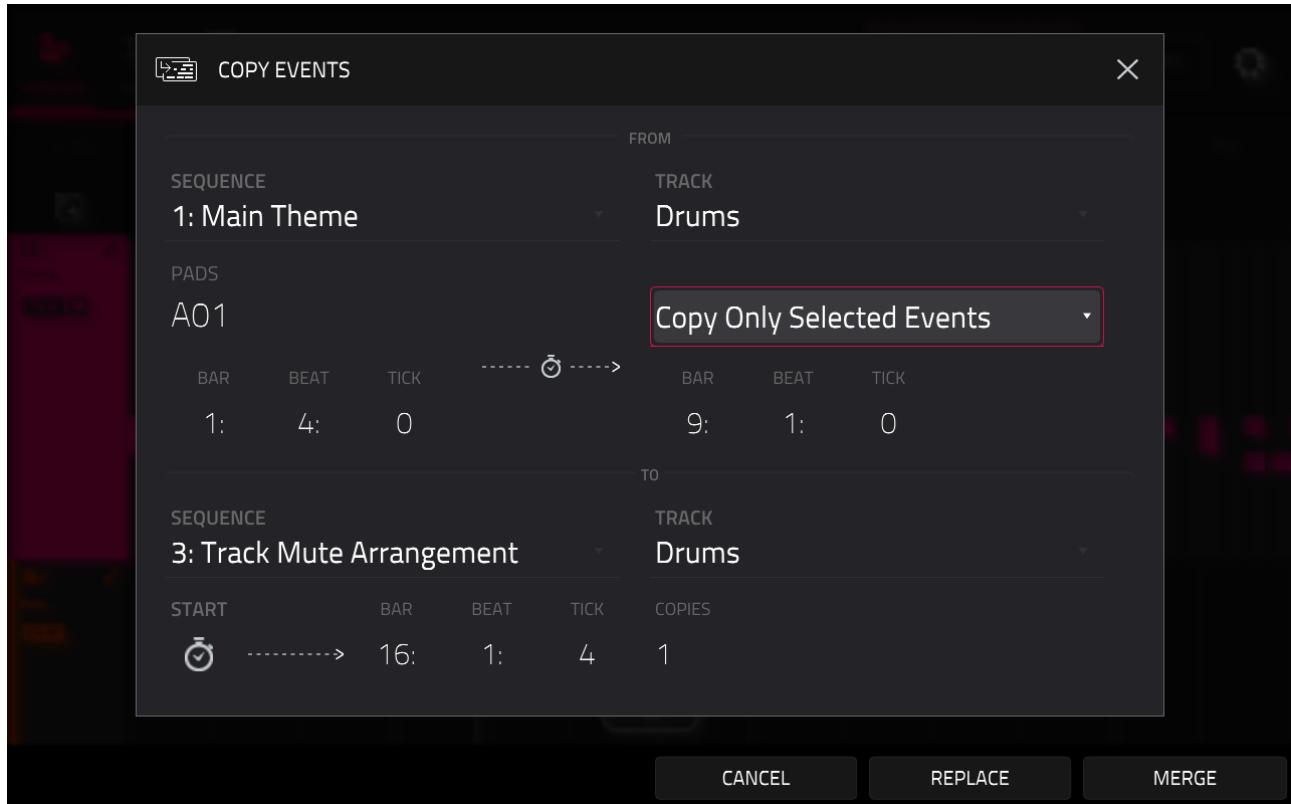
audio output on the track at this point. So it's back to LIST EDIT again to change the mute location....

There are workarounds of course. The first is to use **PAD MUTES** so you can temporarily mute *individual pads* on a track. I look at pad mutes in the next chapter, but ultimately that's a different type of mute on a different screen and is limited to 'audio' mutes only (no event muting). It also suffers the same problem (a muted pad cannot be played or overdubbed until you unmute it).

The other workaround is to **duplicate** the current track (in **ARRANGE**, hold down on the track header and select **DUPLICATE TRACK**) – this way you have a separate copy of your drum kit on an adjacent track which can be used for overdubs over the otherwise muted sections on the 'primary' track. See how this starts getting overly convoluted?

So as things stand I will generally advocate for the 'erasing' method, with the understanding that if you ever need to 'get back' erased events at a later date you are probably going to have to head back to your 'master' theme sequence and carry out some **SEQUENCE EDIT > COPY EVENTS** action:

B11: SONG BUILDING WITH THE ARRANGER



B12: INSTRUMENTAL ARRANGEMENT TECHNIQUES

With a structural arrangement in place our song is now taking shape but it's time to look at adding some additional elements to the song to add interest and variety, a process that can be referred to as the 'instrumental arrangement'.

TOPICS COVERED IN THIS CHAPTER

- ✓ Adding additional instrumentation to the song
- ✓ Using the arpeggiator
- ✓ Adding filter automation
- ✓ Creating a riser
- ✓ Expanding the structure
- ✓ Adding variation
- ✓ Using Pad Mutes

Instrumental arrangement is when you really start bringing the different sections of your song together; we're going to add a completely new track to our song to help define the 'solo' section, as well as adding some fills,

overdubs and sound FX that will hopefully transform this from a repetitive 8 bar loop into something more enjoyable to listen to!

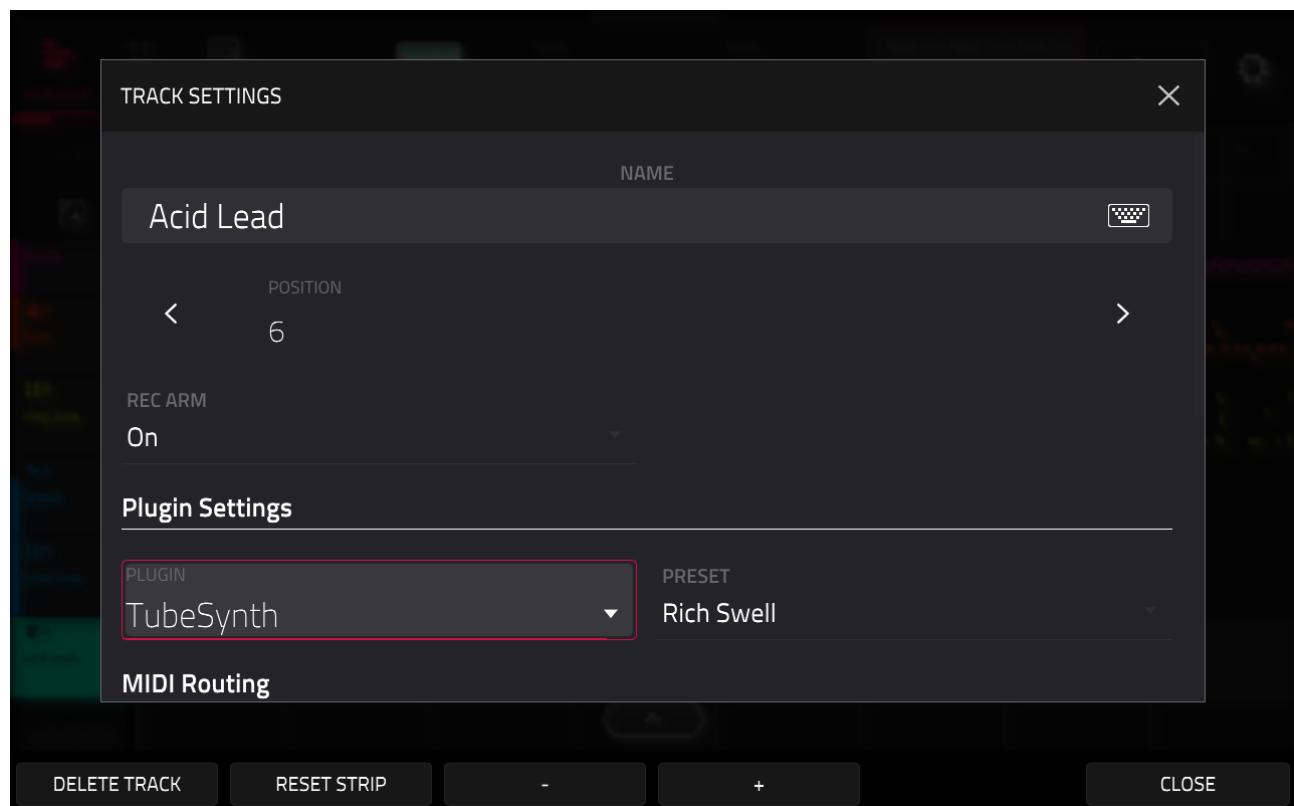
ADDING A NEW PLUGIN TRACK

From the B12 folder, load the project file **B12 Instrumental Arrangement.xpj** and select sequence 2, **Structural Arrangement**.

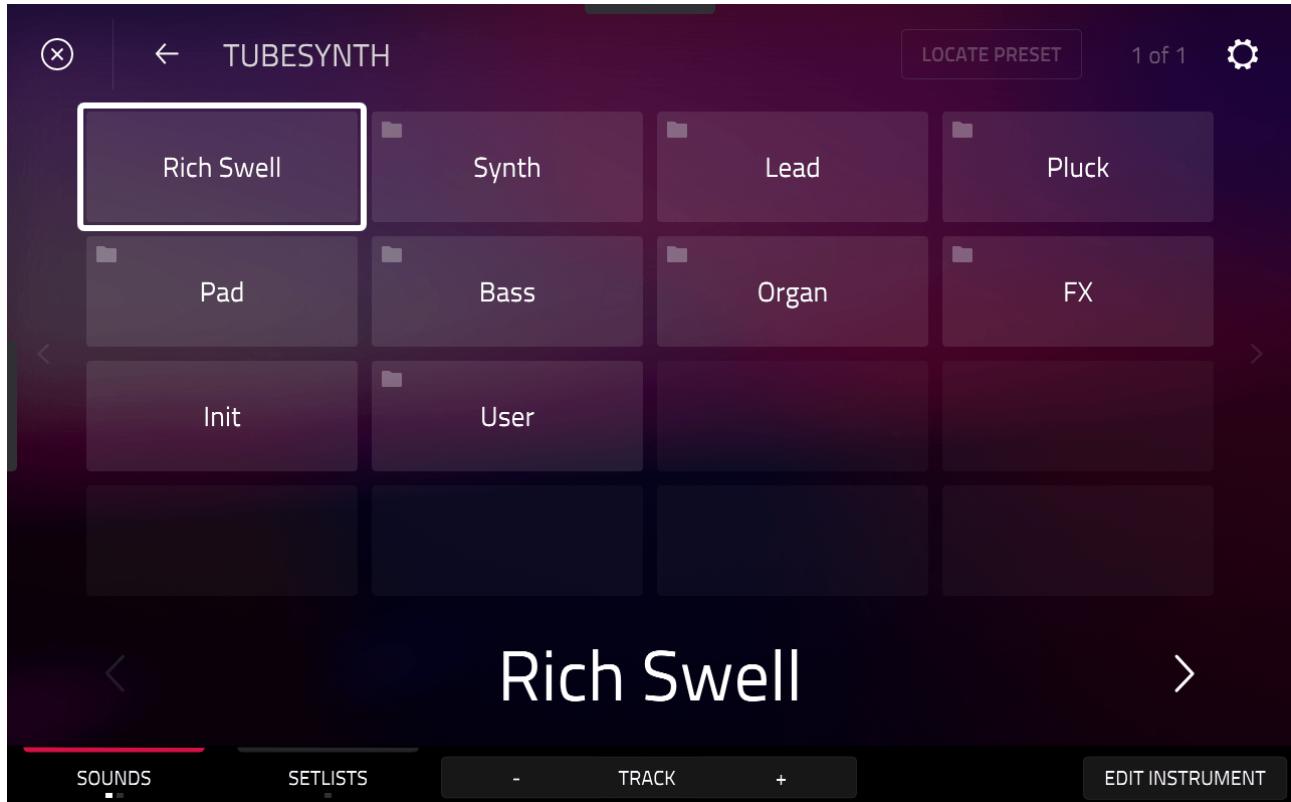
Go to the **ARRANGER** and add a new track by hitting the **+** button along the left side of the screen. Select **Plugin** and magnify the track heights (via a vertical pinch and zoom or **Ctrl + Wheel**).



Double tap the left hand track header block to reveal the **TRACK SETTINGS** page and rename this plugin track to '**Acid Lead**'. While you are here, set the **PLUGIN** used for the track as **TubeSynth**:



Alternatively, go to the **SOUNDS** screen (via the **[SOUNDS]** button if you have one, or **[MENU] > SOUNDS**). Tap on **TUBESYNTH** and the MPC will load an instance of TubeSynth to your track and will automatically take you to its preset category page:



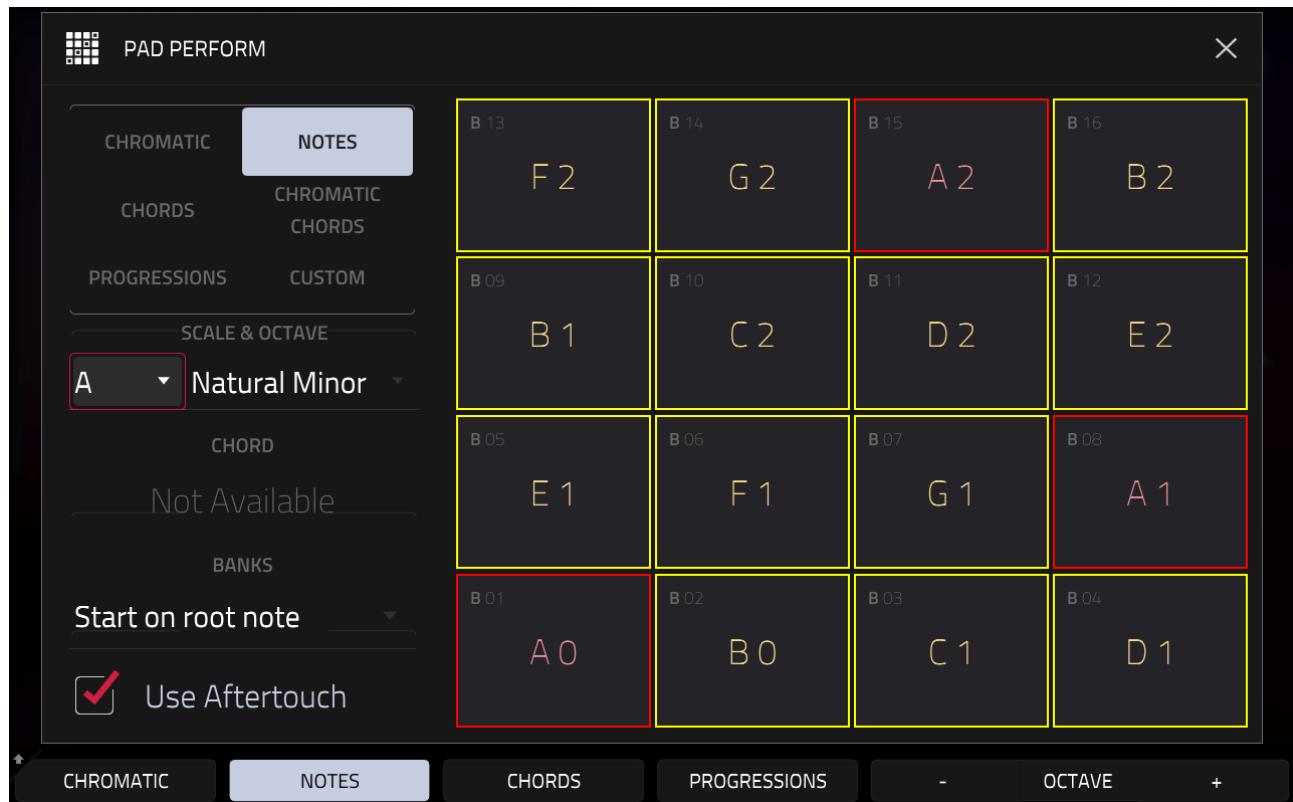
Tap on the **Lead** category and select the '**Jitter Lead**' preset – for the moment, let's leave this preset 'as is' and first lay down a performance with it.

USING THE ARPEGGIATOR

It's possible to create a really effective lead 'solo' performance using the MPC's built in arpeggiator which is designed to play back individual notes from a chord in a repeated pattern.

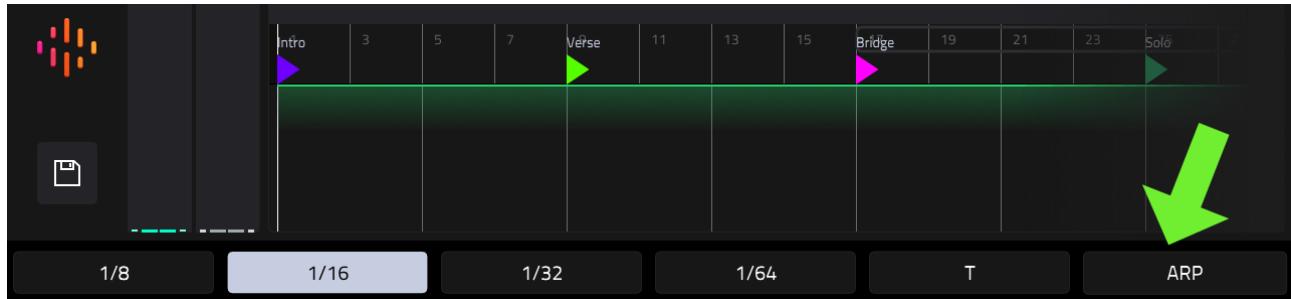
We can play the notes for the arpeggiator using our pads or keys. If you intend using pads, make sure **PAD PERFORM** is set up correctly – double tap the **[16 LEVEL]** button and ensure PAD PERFORM is set to **NOTES** with a

scale of **A Natural Minor** (the scale settings should in theory be remembered from your previous use of PAD PERFORM earlier in Section B):

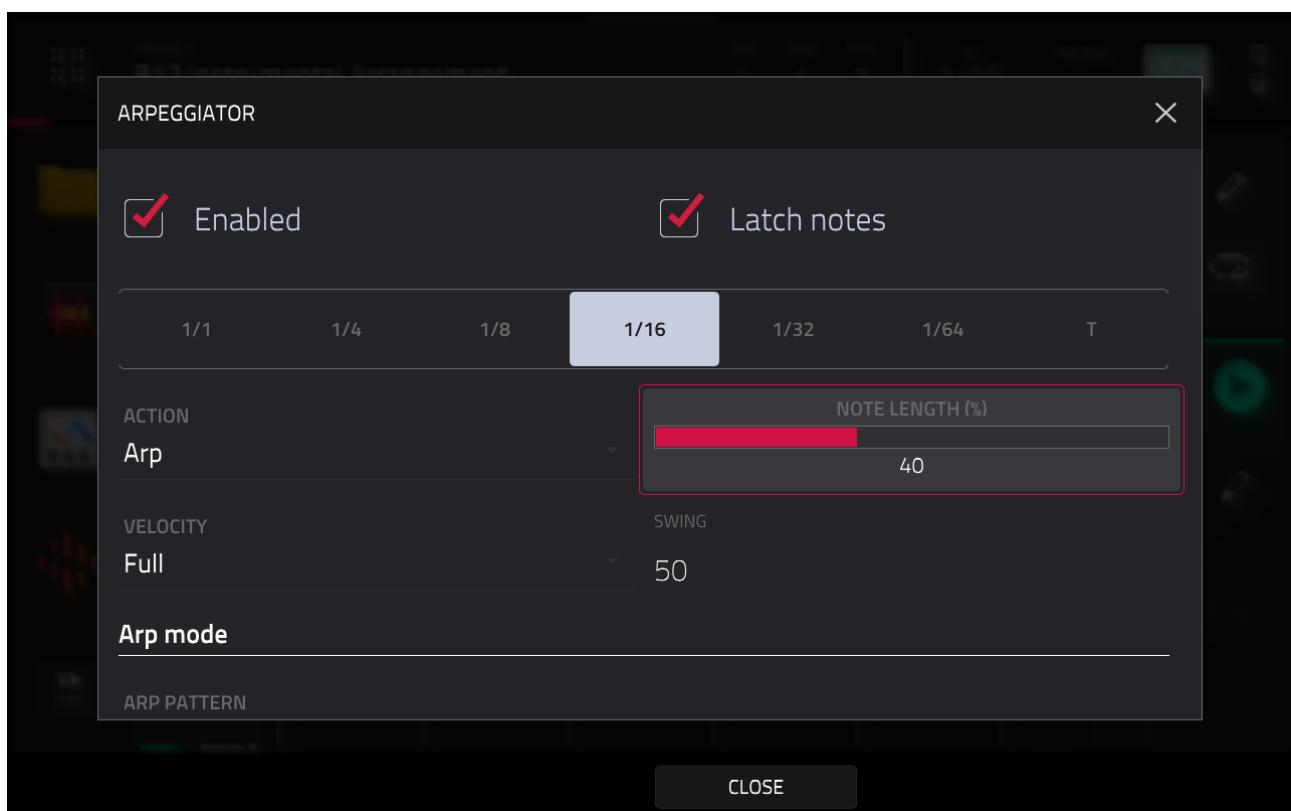


Set **OCTAVE** so you can see the notes **A0**, **D1** and **A1** on screen. If you are using keys, set your keyboard octave so that notes **A1**, **D1** and **A1** are accessible by the keys.

Before we can use the Arpeggiator we'll have to configure it. Your MPC model might have a dedicated **[ARP]** button – if so, use **[SHIFT]** & **[ARP]** to open the arpeggiator settings screen. If you don't have this button (e.g. MPC Live, MPC One) then there's no option to access it from the Arranger; instead go to **[MAIN]** and hold down the physical **[NOTE REPEAT]** button to reveal the familiar **Timing Division** menubar :



Press the **ARP** button to bring up the **ARPEGGIATOR SETTINGS** screen:



First check '**Enabled**' – you can do this by tapping the checkbox on screen or by pressing the [**ARP**] button (if you have one). Now press and hold note **A0** on your keys, or via pad [**A01**]. As you can hear, the arpeggiator plays the note in a 'note repeat' style fashion – the rate is determined by the timing division setting, which we'll set at **1/16**.

While still holding down note **A0**, press and hold on note **D1** (which is pad [A04] via pad perform mode) and you'll hear the arpeggiator is now repeatedly playing both notes. Now press and hold a third note, **A1** (pad [A08]) and you'll have a three note *arpeggio*.



An arpeggio is a 'broken chord', it's when the notes of a chord played one after the other rather than together at the same time.

The arpeggio is just playing the three notes in musical order (A0, D1, A1), and it's ultimately a replacement for you manually playing those three notes in a continual repeated manner – but obviously a lot easier and with perfect timing!

Release the notes and check '**Latch Notes**' and now play the three notes again; this time release the notes and the 'latch' option keeps the arpeggio playing.

A little further down the screen you'll see the **VELOCITY** setting, which defaults to '**As Played**' – listen to the different options to see what's available but for the moment set this to **FULL** as I want to ensure a consistent velocity throughout the performance.

The **NOTE LENGTH** setting determines how long each note plays for within the defined time division, with a setting of 100% leaving no space between notes. Try reducing the **NOTE LENGTH** to **40%** for a more staccato sound.

The SWING is the same swing we met previously in the course – if you change this to anything other than 50% it will add varying amounts of swing to the arpeggio, but for the moment let's leave it 'straight' at **50%**.

RECORDING AN ARPEGGIATED SOLO

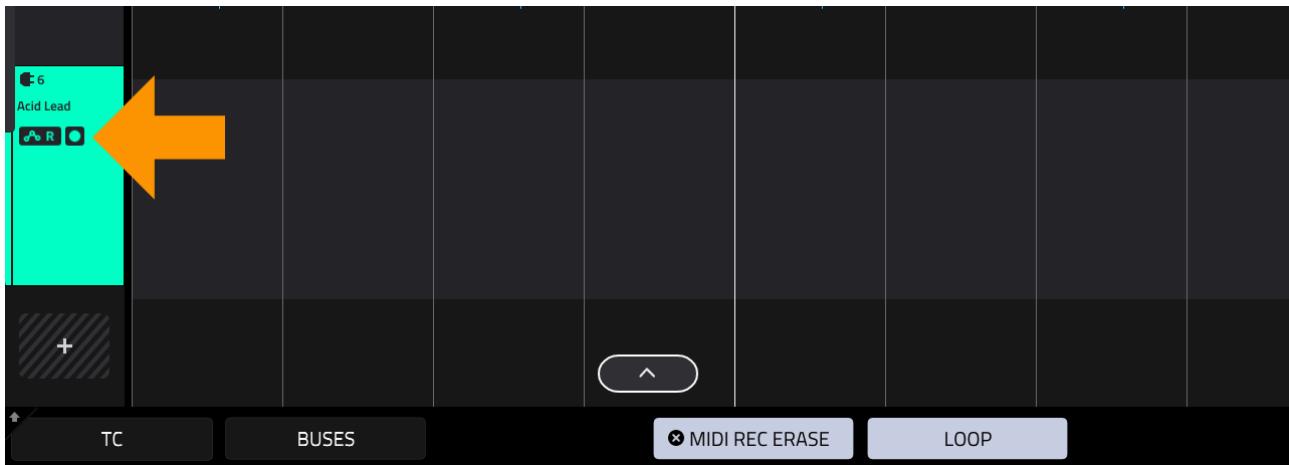
We can play around with other arpeggiator settings later, but at this point let's lay down an initial arpeggiated note pattern over the bridge section of our song. To stop the latched arpeggiator you can uncheck '**LATCH NOTES**' or double tap the [**STOP**] button – just leave the 'Engaged' box checked.

Now with the arpeggiator still enabled it will remain engaged 'globally', so not matter which screen you are in, holding down notes will currently be played back via the arpeggiator.

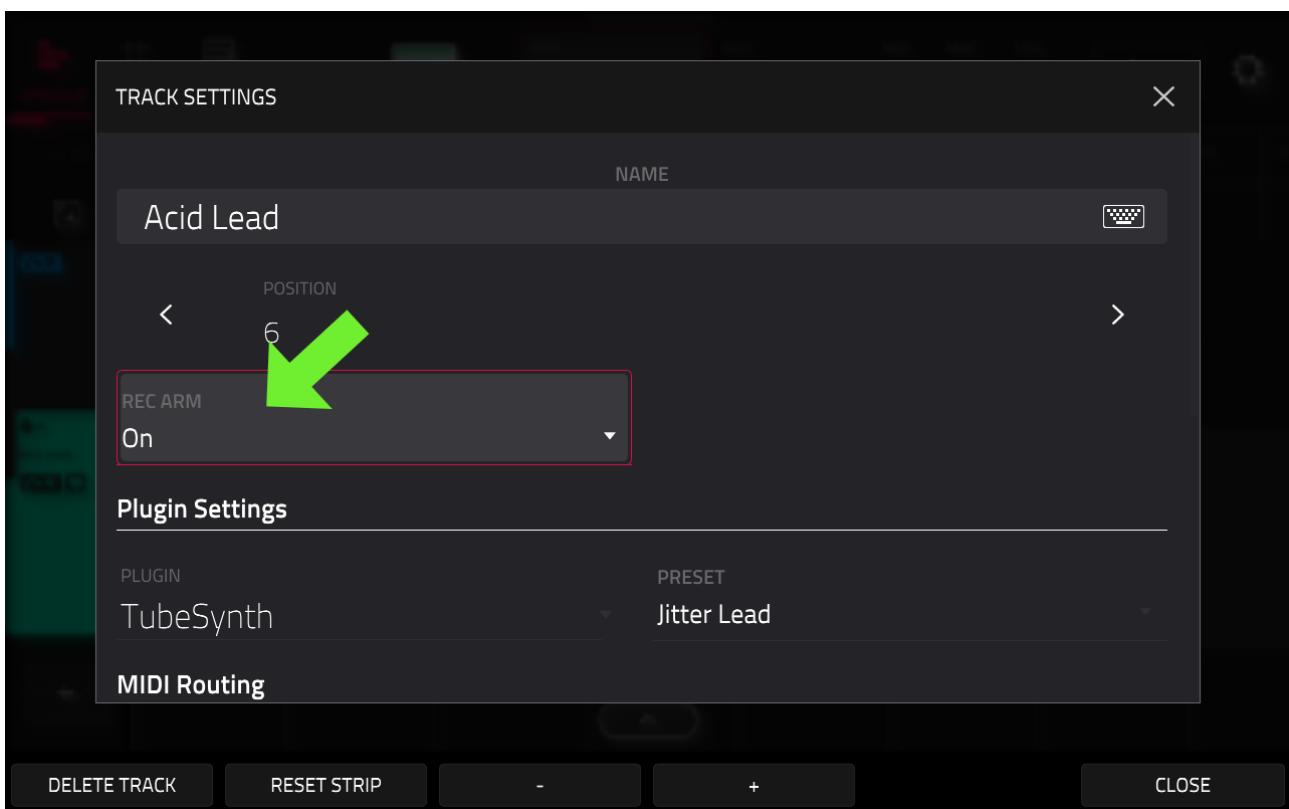
We can record our arpeggiated solo to our 'Acid Lead' track in MAIN or ARRANGE. One disadvantage of recording in the arranger is that if your MPC model is lacking a dedicated ARP button you cannot easily access your arpeggiator settings, so this makes 'on the fly' tweaking problematic.

For this first recording we don't need to change the arpeggiator settings, so I'll show you how to record this in the Arranger, and we'll record the second part in MAIN so you have experience with both different environments.

Go to **ARRANGE**, tap the **Acid Lead** track to select it and use a vertical pinch and zoom to enlarge the track header box. Make sure the '**record arm**' icon is visible:



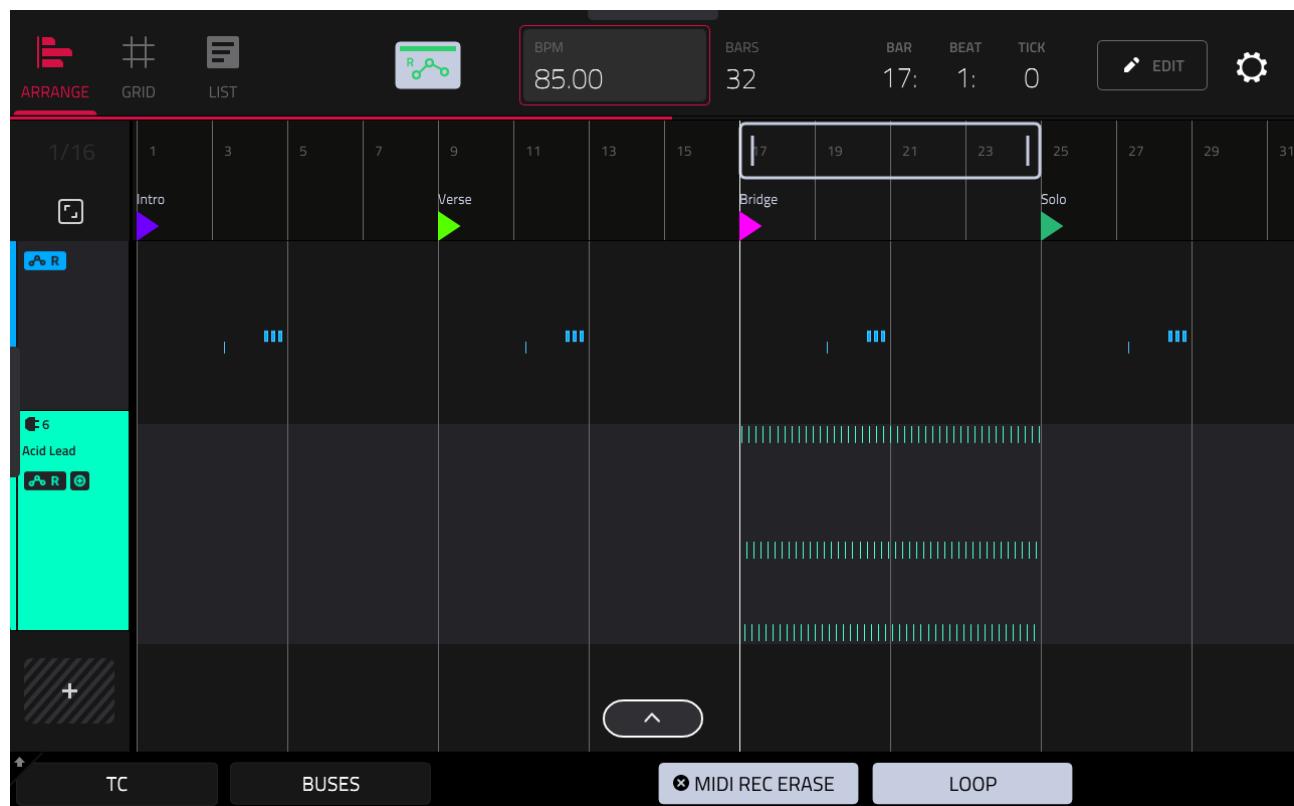
If it isn't, double tap the track header and set **REC ARM: On**



Hold down **[SHIFT]** and press **BRIDGE**. This should automatically set the sequence loop region to cover only bars 17–24 – if you can't see the loop region make sure the **LOOP** button is enabled in the bottom menu bar.

Hit **[REC]** and **[PLAY START]** and will the countdown is playing, hold down the three notes we used previously (**A0, D1, A1**).

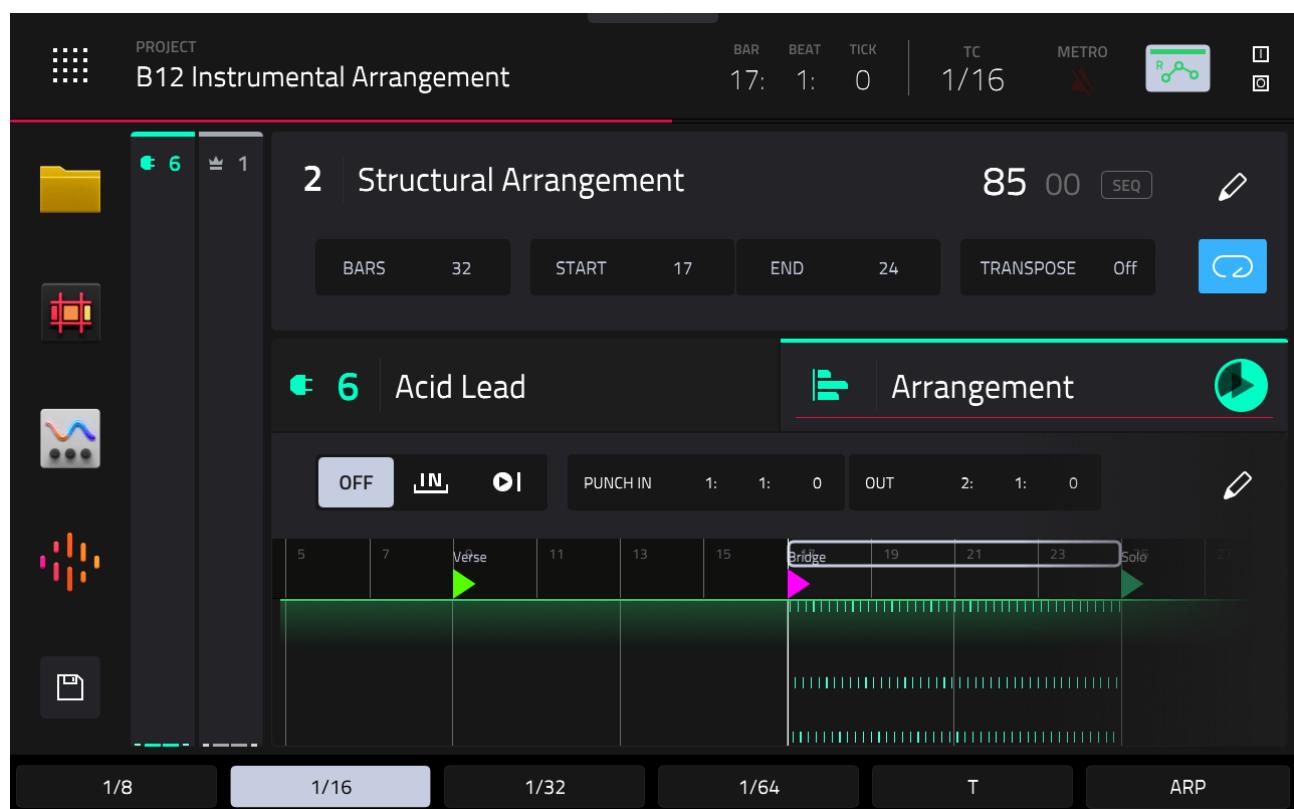
Record the arpeggiated pattern to the **Bridge** section – the section loop setting will ensure that upon reaching the end of bar 24 it will just loop back to bar 17 and enter **OVERDUB** mode, at which point you can just hit **[STOP]**. Notice how the arpeggiated events have been recorded to the track just like any other type of quantised performance:



Hit [**PLAY START**] to listen to the arpeggiated lead. Now you'll have to trust me that this will eventually sound a lot less monotonous, this is just step 1!

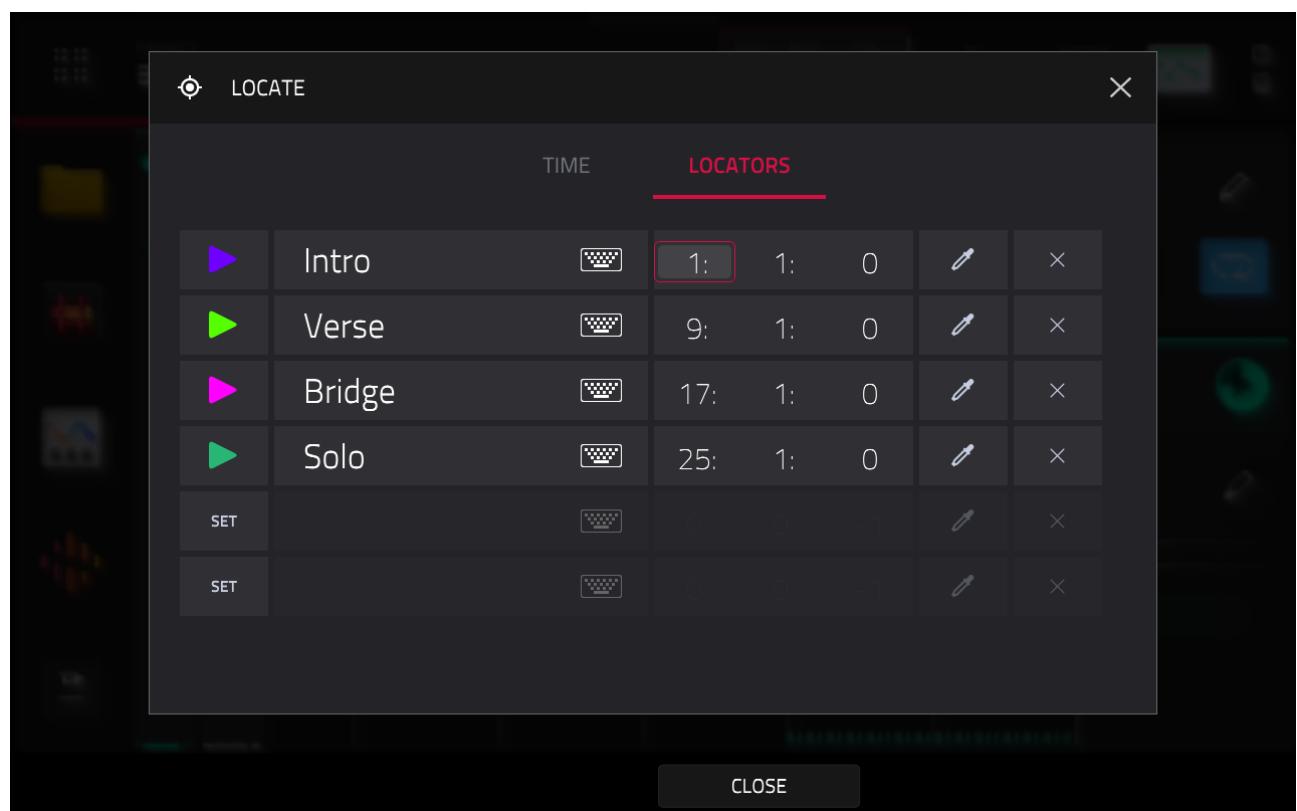
Next we'll record more arpeggiated notes over the '**Solo**' section – this time I want to change up the arpeggiator settings in real time, so for the benefit of all MPC Live & MPC One users, I'm going to do this in MAIN – this is also a good opportunity to show you how you can still easily manage the arrangement process in MAIN.

So hit [**MAIN**] and select the **Arrangement tab**:



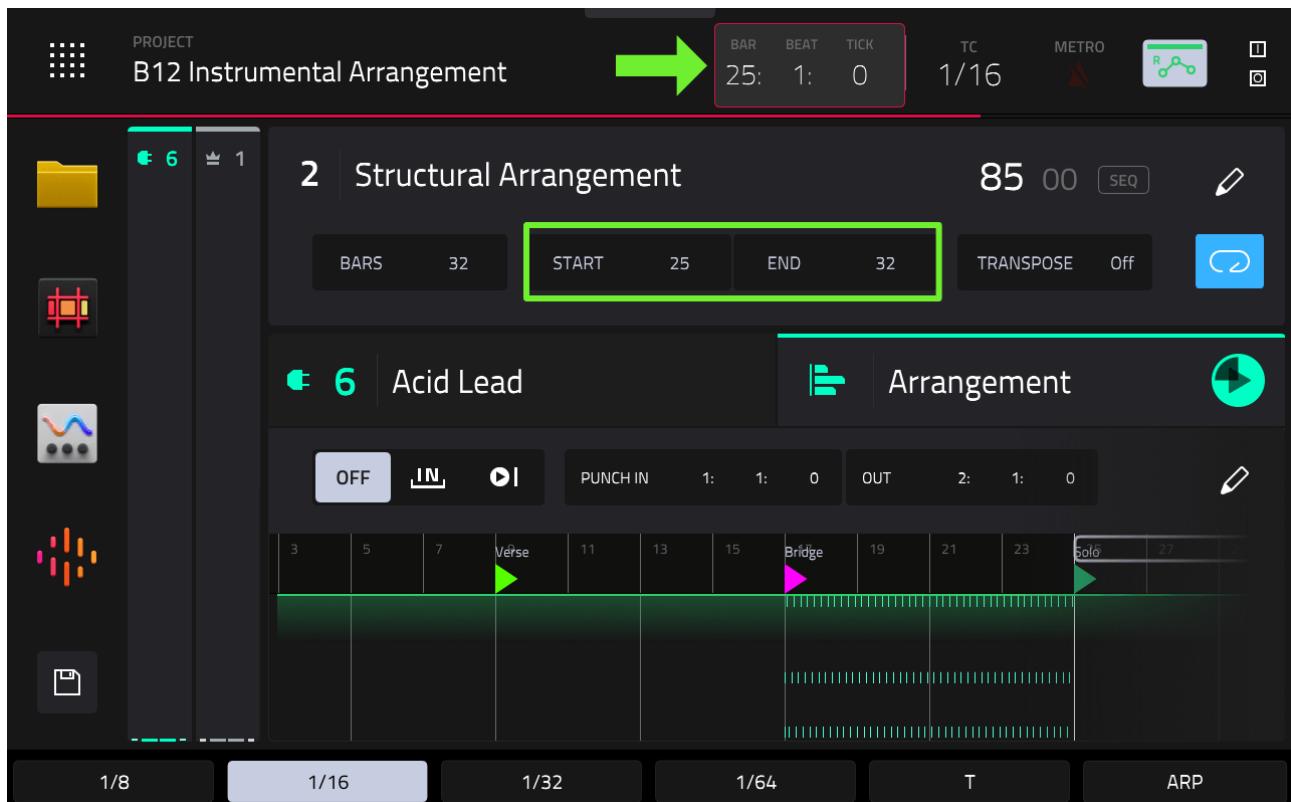
The arrangement tab is like a single track view of the ARRANGE screen – you can pinch and zoom, drag to change position and even double tap the events to open up the GRID VIEW for further editing of this track.

We now want to record over the 'Solo' section, so let's use the '**Solo**' locator shortcut. Now, notice how your locator point flags are also displayed on this screen, but unfortunately there are display only, and in MAIN there is no menubar option to access locator point shortcuts. Instead, double tap the **Time Counter** in the top toolbar, select the **LOCATORS** tab and tap on the flag icon for '**Solo**':

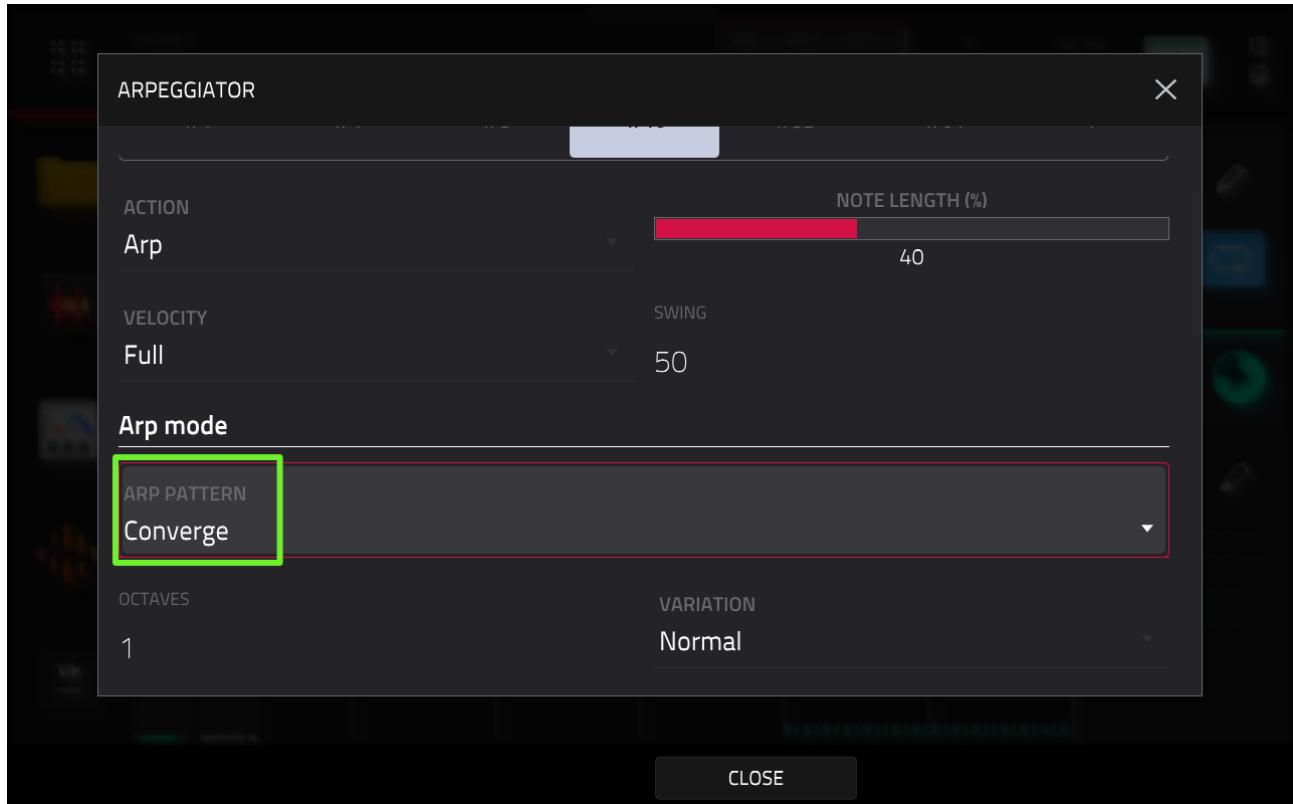


This will set sequence time to **25:1:0**, the start of our '**Solo**' section – it also sets the sequence **START: 25** and **END: 32** (this is the MAIN version of the 'loop region' in Arrange):

B12: INSTRUMENTAL ARRANGEMENT TECHNIQUES



Now open up the **ARP SETTINGS** screen; remember, that's using [**SHIFT**] & [**ARP**] or [**SHIFT**] + [**NOTE REPEAT**] > **ARP**. You can also double tap [**NOTE REPEAT**] to lock the ARP button at the bottom of the MAIN screen.



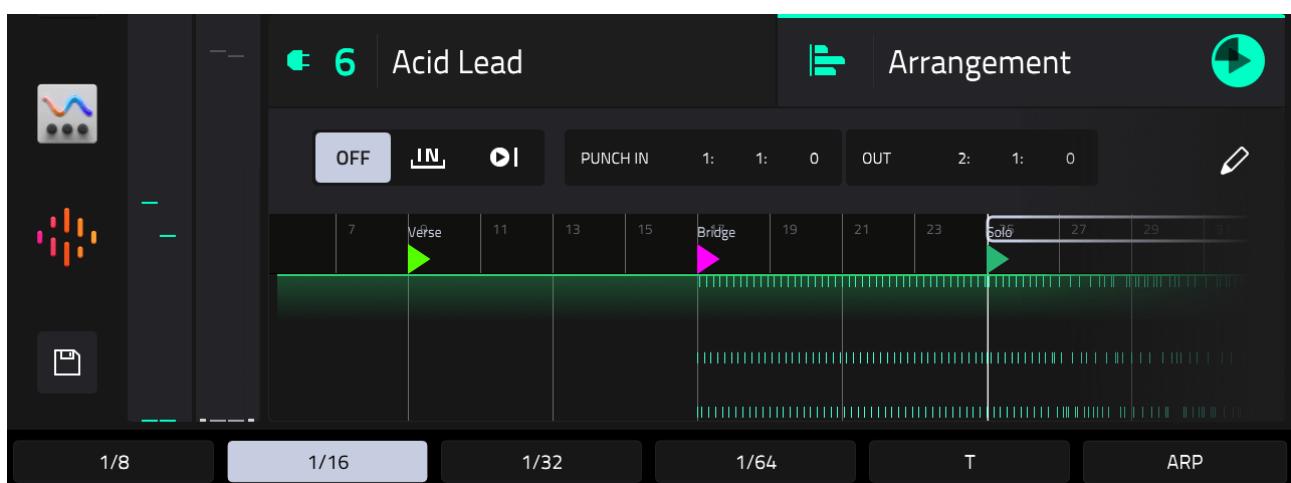
Enable '**Latch Notes**' and press the same three notes as before (**A0, D1, A1**). During this performance I'm going to leave the arpeggiator in LATCH mode and use my hands to change the the ARP SETTINGS in real time. Previously we used the 'Up' pattern, but during this performance I want to randomly switch between several different settings to give a more random sounding arpeggio.

Set **ARP SETTINGS** to **Converge**. Now turn your data wheel clockwise and notice there are a few other Converge types - I'm going to continually change between these four types while the MPC is recording the arpeggios to the track, giving a less predictable arp pattern.

So, press [**REC**] and [**PLAY START**] – you'll find that this closes the ARP SETTINGS screen, so while the countdown is in progress, reopen the ARP SETTINGS screen using the method described previously.

As the MPC moves through the 'solo' section, keep changing the **ARP PATTERN** setting every few beats to create slightly different variations of the three note arpeggio.

You can see from the **Arrangement tab** that the events in the Solo section have a different structure to those in the Bridge:



If you find this all a bit too fiddly, just pick a single arp pattern and record the solo section with that (it can just be the standard 'Up' if you prefer). After recording, disable the arpeggiator by hitting the [**ARP**] button, or unchecking '**Enable**' in the **ARP SETTINGS** screen.

Remember, this is still ultimately recording standard MIDI events, so anything you record can still be edited or 'undone' just like any other MIDI performance.

At this point, talk the opportunity to expand the **XL Channel Strips** and quickly tweak the volume of the **Acid Lead** track so it sits nicely in the mix – just a rough one at this point, we'll perform a better mix at the end of this section.

Save your project to your own **Projects** folder if you'd like to preserve your own performance and then load up my version of this arrangement so far; **B12 Acid Lead.xpj** and select **sequence 2, Basic Acid Lead**.

ADDING FILTER AUTOMATION TO THE LEAD

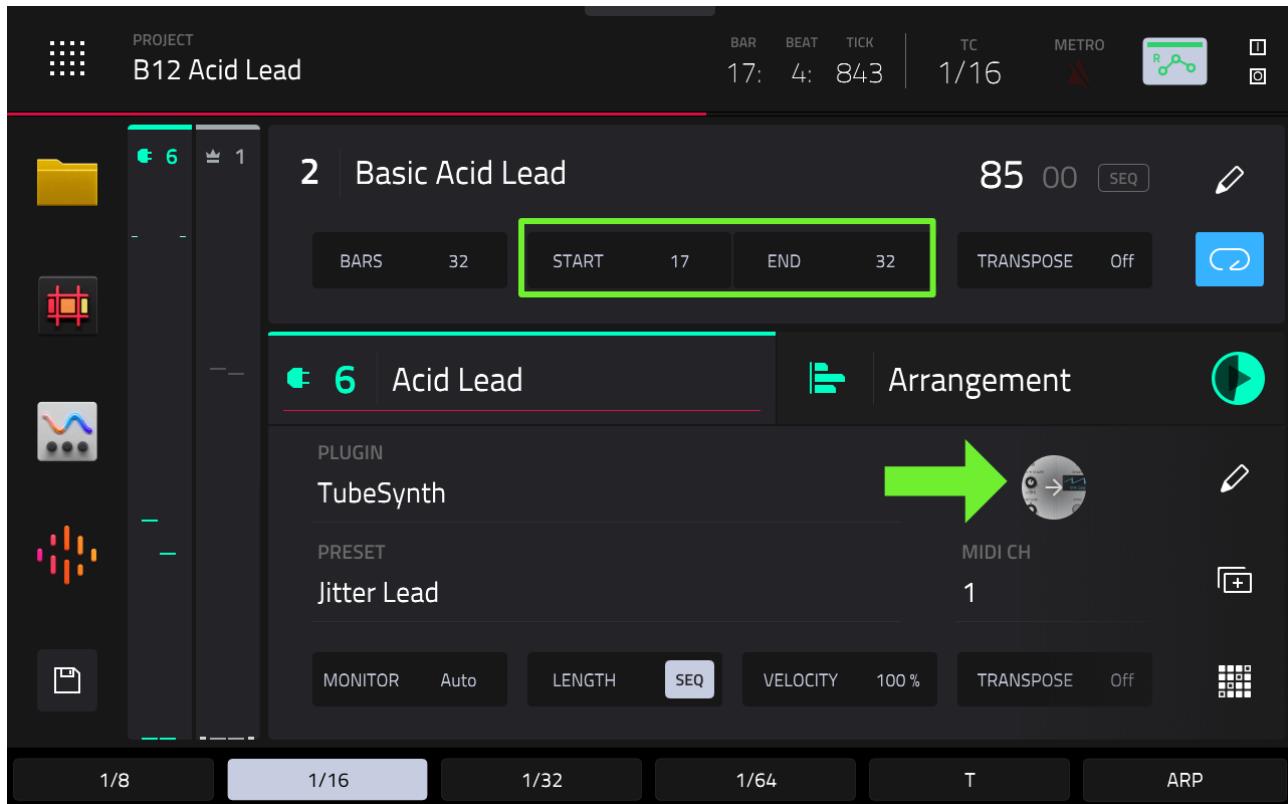
As I mentioned previously, the solo is currently quite monotonous and certainly doesn't provide any kind of 'build up'. To make things more interesting we can add some automated filter to the solo.

One way to add sweepable filters to any track is to insert the **AIR Filter** plugin across the track and automate AIR Filter's various settings. However TubeSynth has its own filter so it's going to be a lot simpler and more CPU efficient to automate this filter instead.

First let's configure our sequence in preparation for some automation. First let's set a suitable sequence looping region. We're going to write our filter automation over **bars 17** (the beginning of the bridge) all the way to the end of the final bar (**bar 32**).

In **MAIN** we set the looping region using the sequence **START** and **END** parameters. Set these to **START: 17, END: 32**.

B12: INSTRUMENTAL ARRANGEMENT TECHNIQUES



Let's take a look at the filter section in TubeSynth. To open the plugin settings, you can tap on the plugin graphic in the **Track Parameters tab**.

Alternatively, go to [**TRACK EDIT**] – this is the same TRACK EDIT screen we used to edit our DRUM and KEYGROUP tracks previously, but for plugins it shows us the plugin parameters. Select the **MIXER/FILTER** screen:



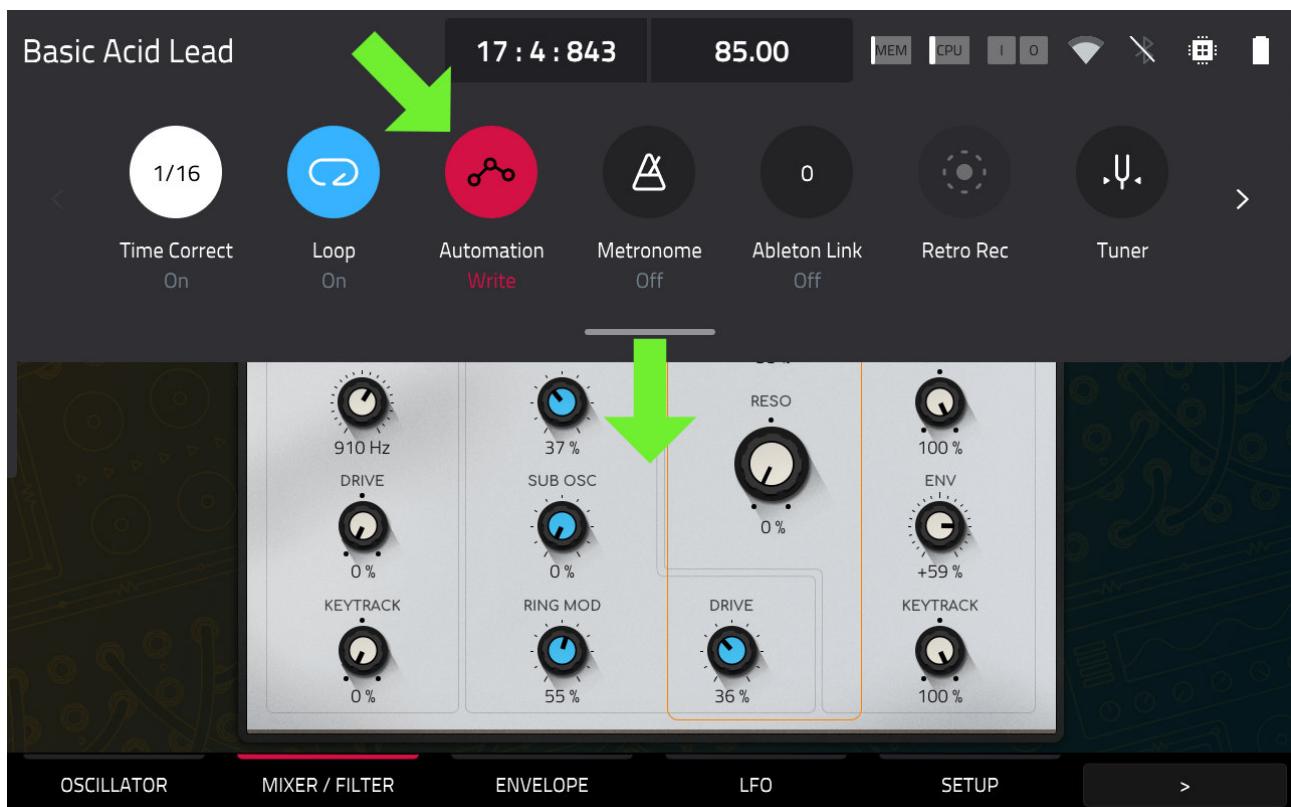
Hit [PLAY START] and your sequence will begin playing from bar 17.

On the right hand side are the **low pass filter** settings for TubeSynth. Tap on the **CUTOFF** dial and begin to gradually increase the value; as you do you'll hear the acid lead 'open up' as it gets brighter. Reduce the **CUTOFF** until you reach **0%**, at which point the lead is barely audible.

Set the **CUTOFF** to around **63%** and now start increasing the **RESO** (resonance) and you'll start hearing some classic squelchy acid sounds.

You'll probably find it easier to adjust these parameters using the Q-LINK dials in [**Q-LINK BANK 3**]. When you are on this screen, the **CUTOFF** dial is (Q-LINK 15) and the **RESO** dial is (Q-LINK 11).

To record our filter automation performance you'll need to set the automation to **global WRITE mode** which on supported MPCs is done by pressing the **[AUTOMATION]** hardware button. If you don't have an automation button you can use the **top pull down menu**:



So the general idea here is to gradually open up the filter cutoff from 0% up to around 50% by the end of the bridge, and then during the 'solo' start increasing the resonance and generally varying the cutoff and resonance up and down to get some nice squelchy acid sounds.

Set the **CUTOFF** and **RESO** to **0%**. Press **[PLAY START]** and begin writing your filter automation to the track – try to hit **[STOP]** before the sequence loops back to bar 17.

If you don't like your first attempt, hit [**UNDO**] and try again. Or press [**ERASE**] > **AUTOMATION** > **ALL** to erase only the automation.

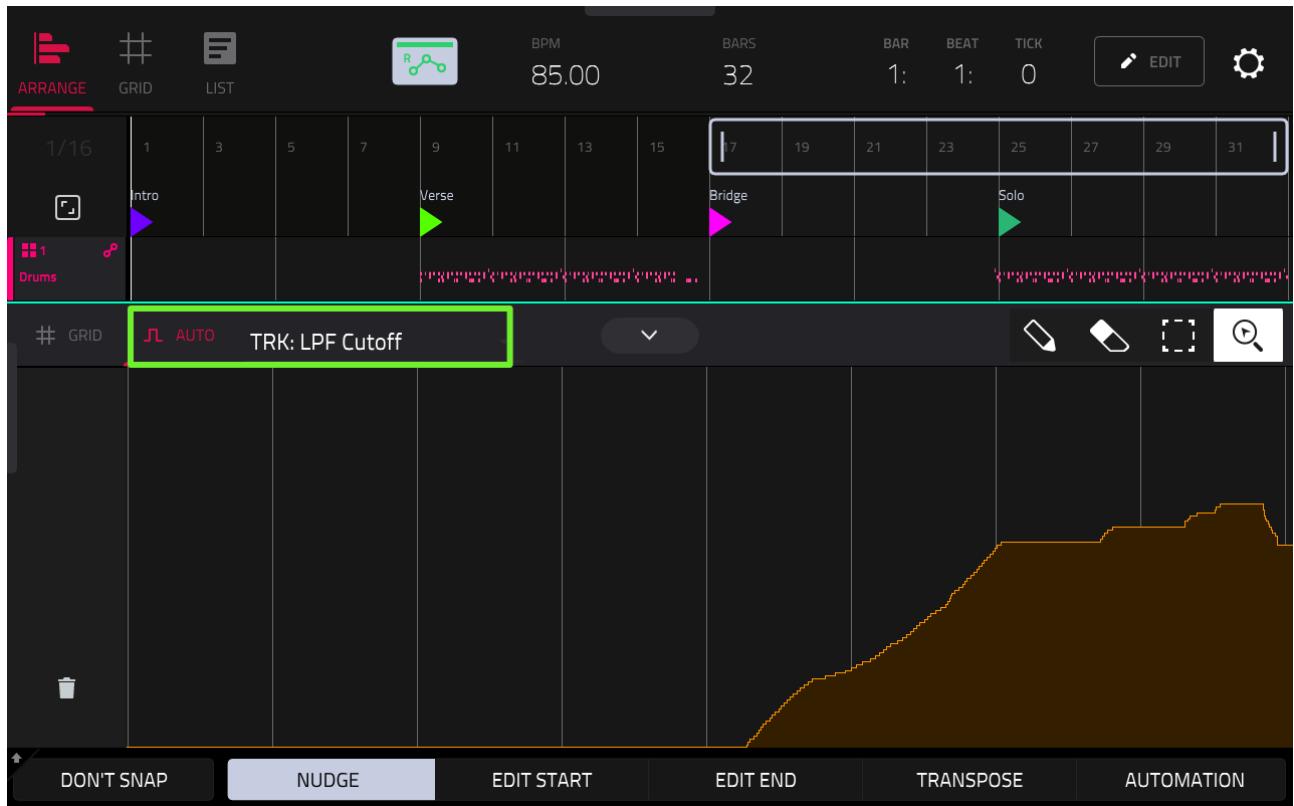


*Remember to set AUTOMATION back to **READ** mode when you are finished writing the automation otherwise you might accidentally write over your filter sweeps.*

You can check out my version of this in **sequence 3** of the current 'Acid Lead' project, **Automated Acid Lead**.

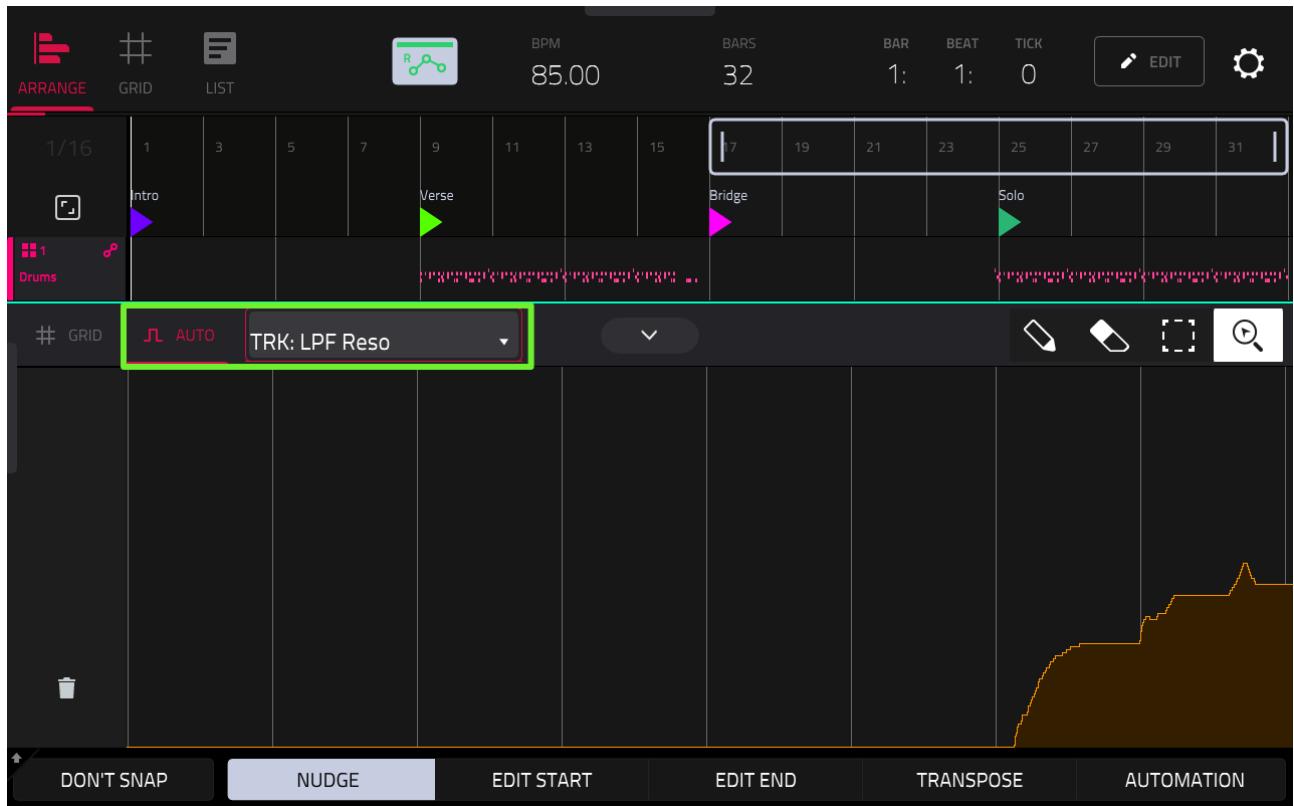
Let's take a look at the automation events. Go to **ARRANGER** and double tap the **Acid Lead track** to open up the split screen GRID VIEW; expand it upwards if you need more room. Select **AUTO** > **TRKL LPF Cutoff** to view the cutoff automation:

B12: INSTRUMENTAL ARRANGEMENT TECHNIQUES



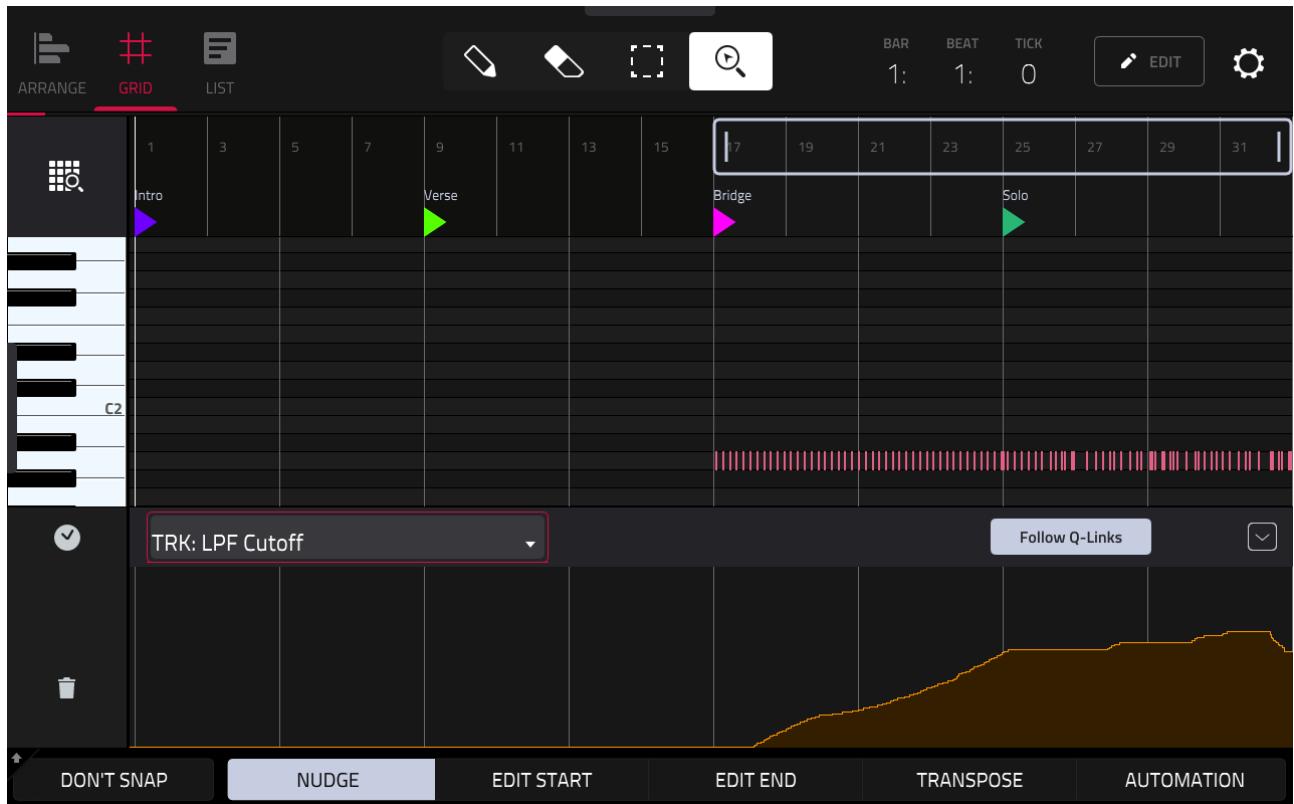
You can re-draw the automation anywhere you wish using the pencil tool, or erase parts using the erase tool. Select **TRK: LPF Reso** to view resonance automation:

B12: INSTRUMENTAL ARRANGEMENT TECHNIQUES



You can of course use the full screen GRID VIEW page if you prefer, although in all fairness you actually get more real estate with the expanded ARRANGE split view:

B12: INSTRUMENTAL ARRANGEMENT TECHNIQUES



You can also view and edit the automation in **[LIST EDIT] > VIEW: Track Automation**

The screenshot shows the MPC software interface with the 'LIST' tab selected. The top bar displays 'BAR 1: BEAT 1: TICK 0' and 'TC 1/16'. The 'VIEW' dropdown is set to 'Track Automation'. The main area is a table with columns: #, TIME, PAD/NOTE, LENGTH, VELOCITY, MOD TYPE, VALUE, PROB, and RAT. The data shows 10 automation events for the LPF Cutoff parameter:

#	TIME	PAD/NOTE	LENGTH	VELOCITY	MOD TYPE	VALUE	PROB	RAT
1	001:01:000				LPF Cutoff	0 %		
2	001:01:000				LPF Reso	0 %		
3	018:01:382				LPF Cutoff	1 %		
4	018:01:554				LPF Cutoff	2 %		
5	018:01:708				LPF Cutoff	2 %		
6	018:02:251				LPF Cutoff	3 %		
7	018:02:494				LPF Cutoff	4 %		
8	018:02:713				LPF Cutoff	5 %		
9	018:02:926				LPF Cutoff	5 %		
10	018:03:227				LPF Cutoff	6 %		

At the bottom, buttons for EVENTS, TEMPO, INSERT, DELETE, ►, and NUDGE are visible.

Here you can change or delete any problematic events numerically.

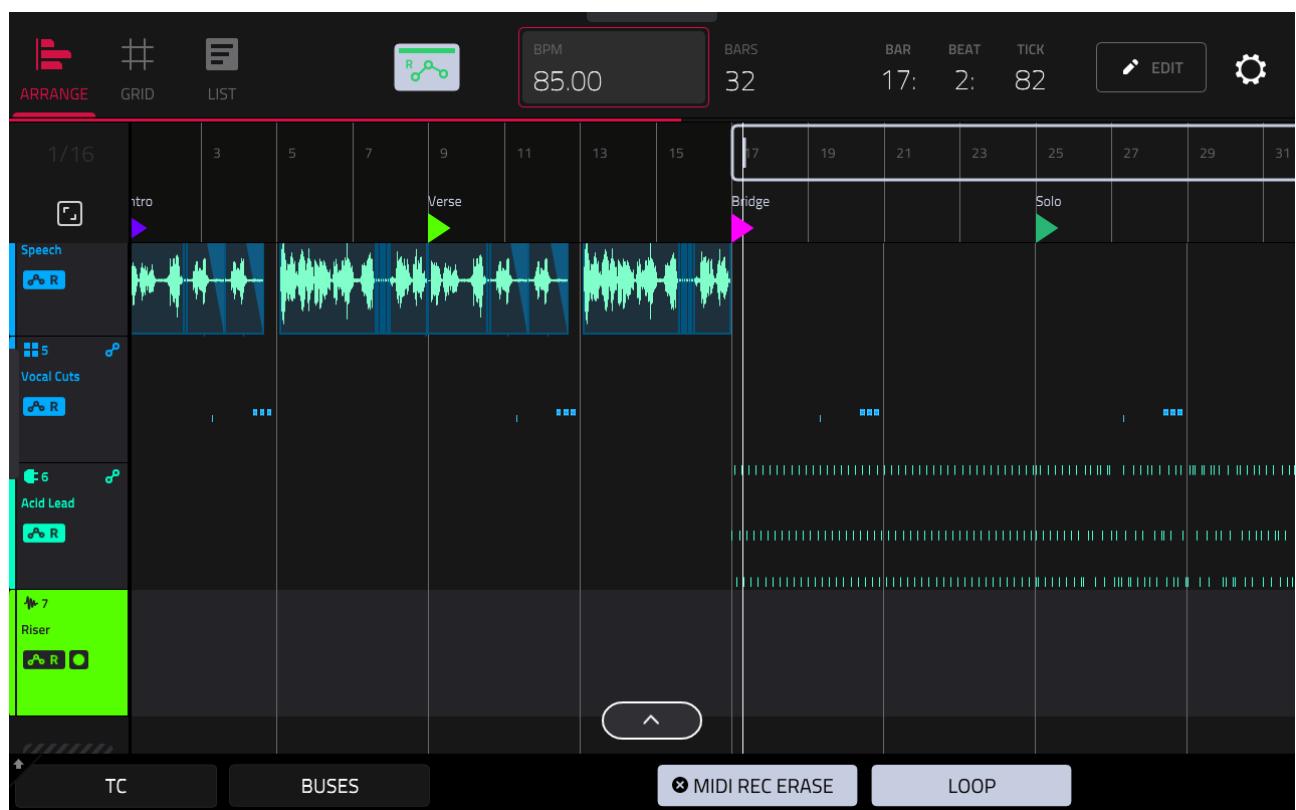
ADDING A RISER

We can create more of an epic sounding build-up during the bridge section by adding a **riser**; these are sounds that gradually increase in volume and/or pitch which help build up to a climax in a song.

The simplest type of riser can be made by reversing the sound of a crash cymbal – go to [**BROWSER**] and load the sample **Cymbal-DKV crs 024** from the **B12** folder.

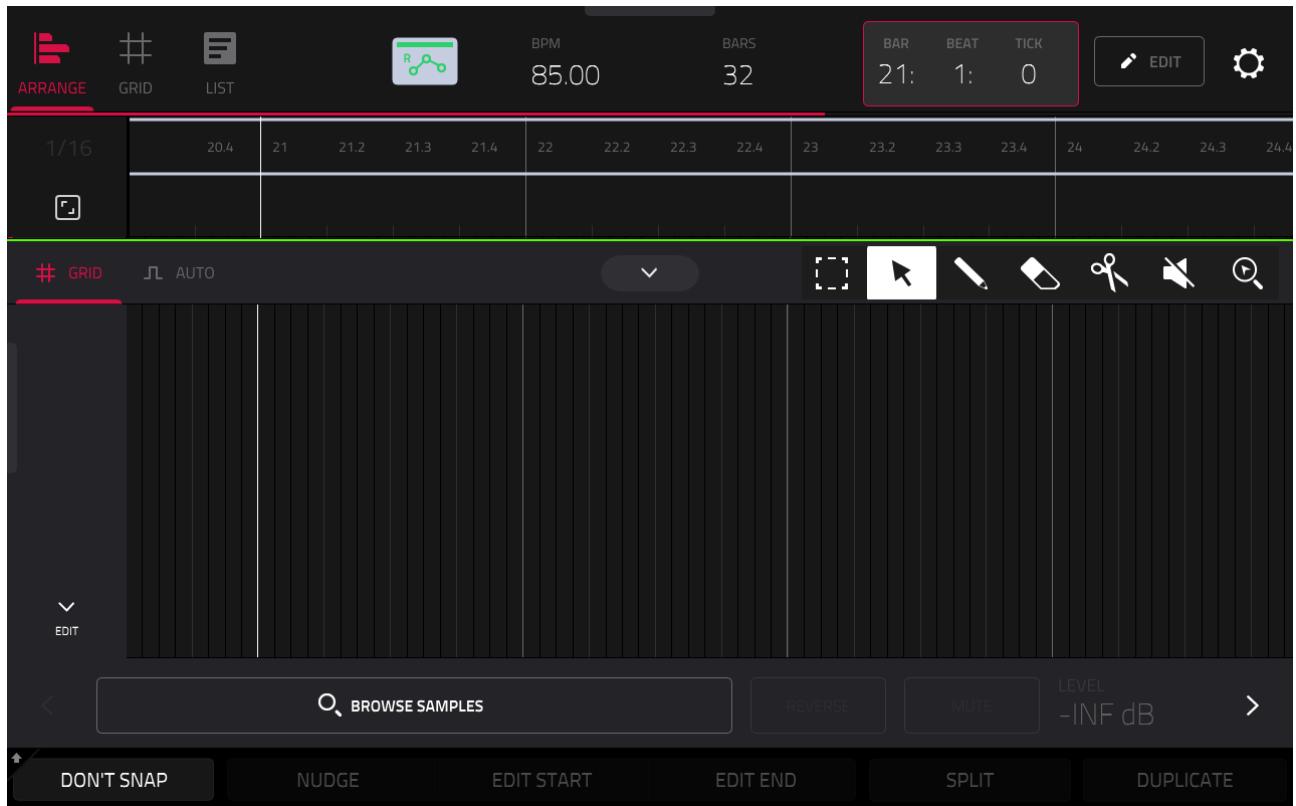
First, even though our riser sample is already assigned to a track in our song, let's put our riser on a separate track. This way we can treat it as a completely separate and unique instrument rather than part of the drum kit.

In [ARRANGE], tap on the **Acid Lead** track to select it, this way our new track will be added underneath this track. Hit the **[+]** button on the left side of the screen and add a new **Audio** track – call it **Riser**.



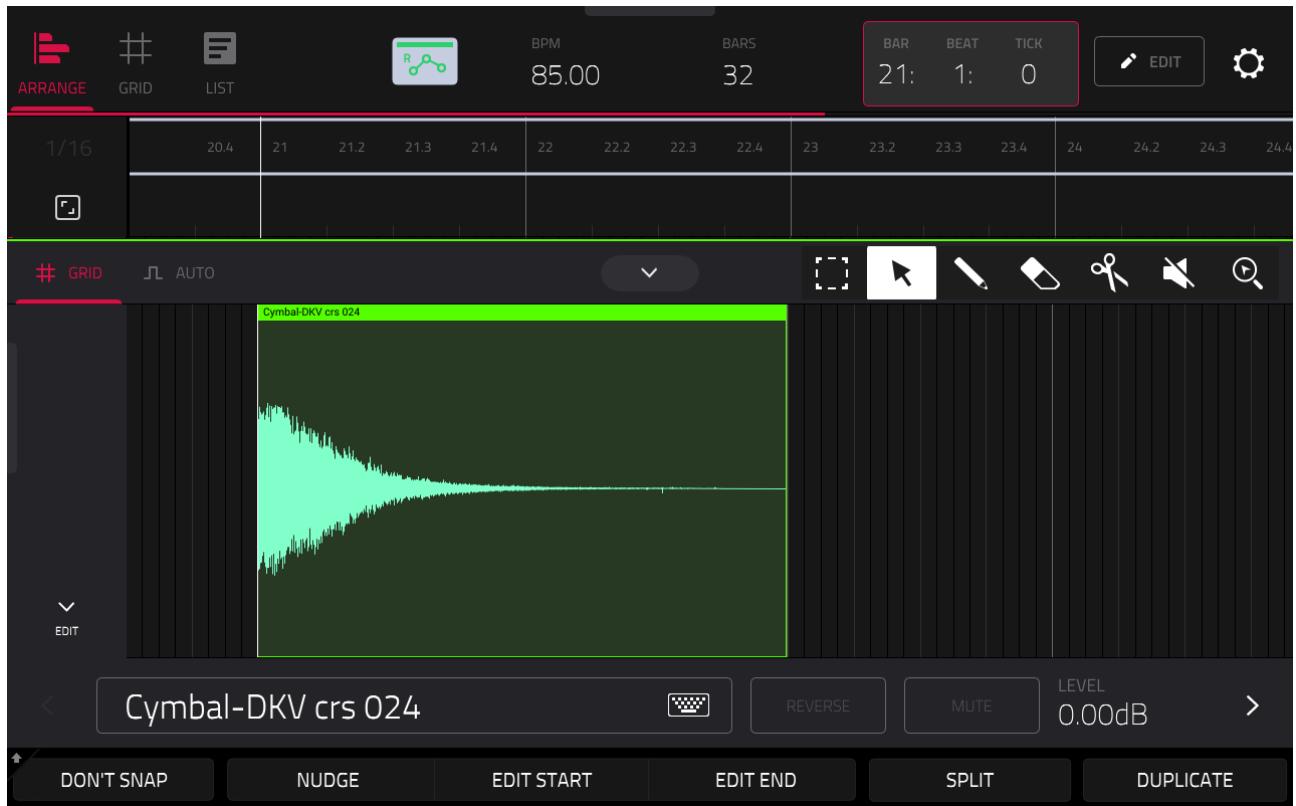
Tap on the time line to set the sequence time to approximately the start of **bar 21**. Double tap the audio track to open the split screen **EDIT AUDIO** screen and drag it up vertically until the **BROWSE SAMPLES** button appears. If 'AUTO' view is enabled change this to **GRID**.

B12: INSTRUMENTAL ARRANGEMENT TECHNIQUES



Select the **Cymbal-DKV crs 024** sample. *Uncheck 'Place At Start'*

B12: INSTRUMENTAL ARRANGEMENT TECHNIQUES

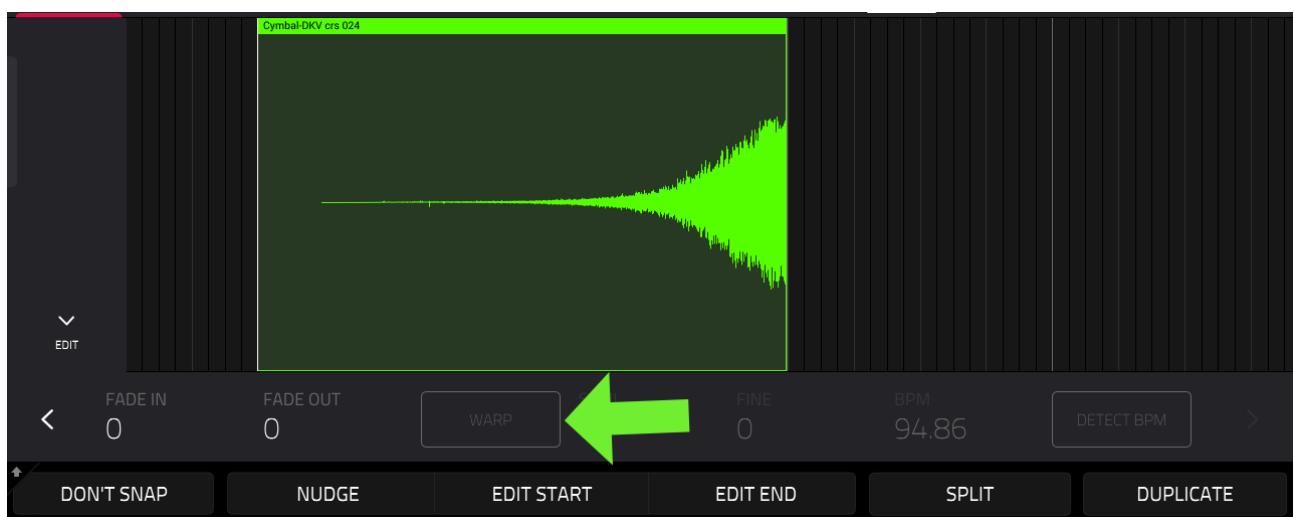


Now hit the **REVERSE** button to reverse our crash cymbal:

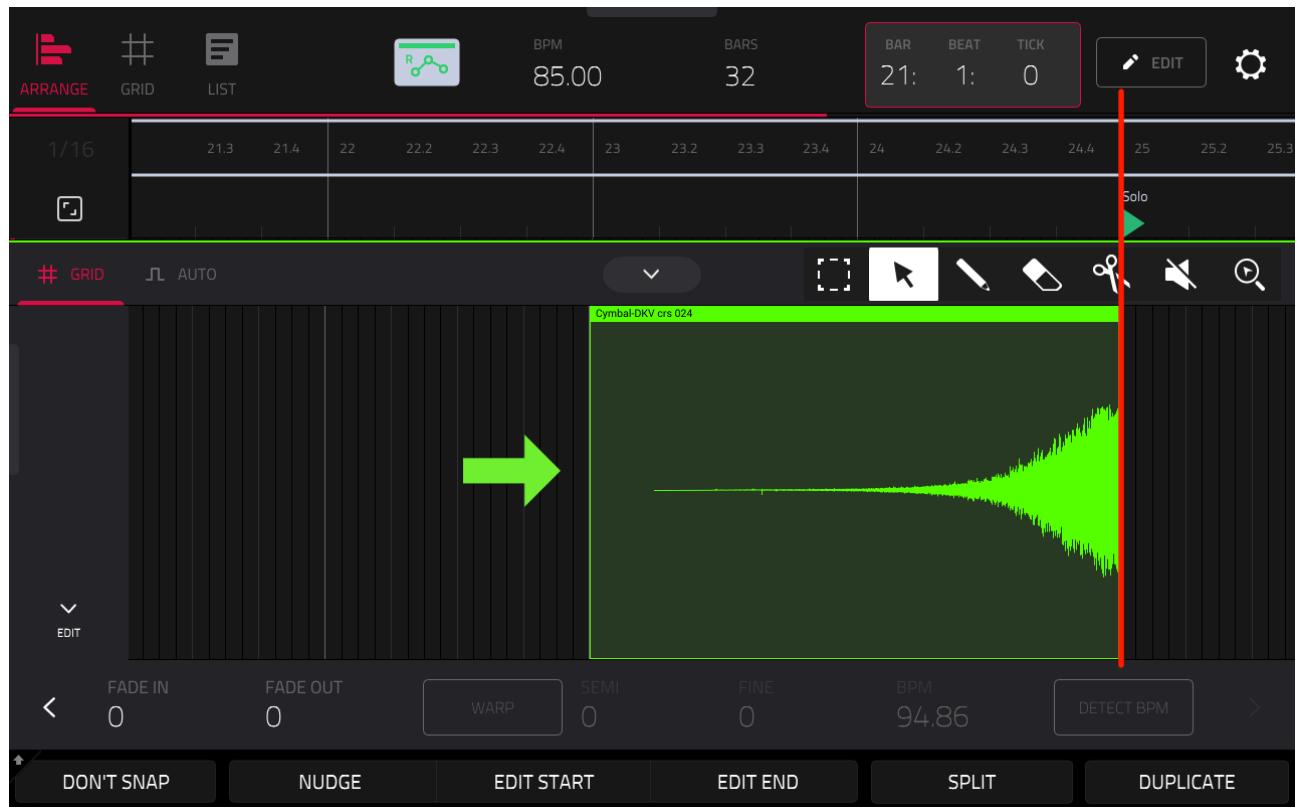
B12: INSTRUMENTAL ARRANGEMENT TECHNIQUES



Now tap on the right arrow to reveal the second page of auto tools and de-select **WARP**:



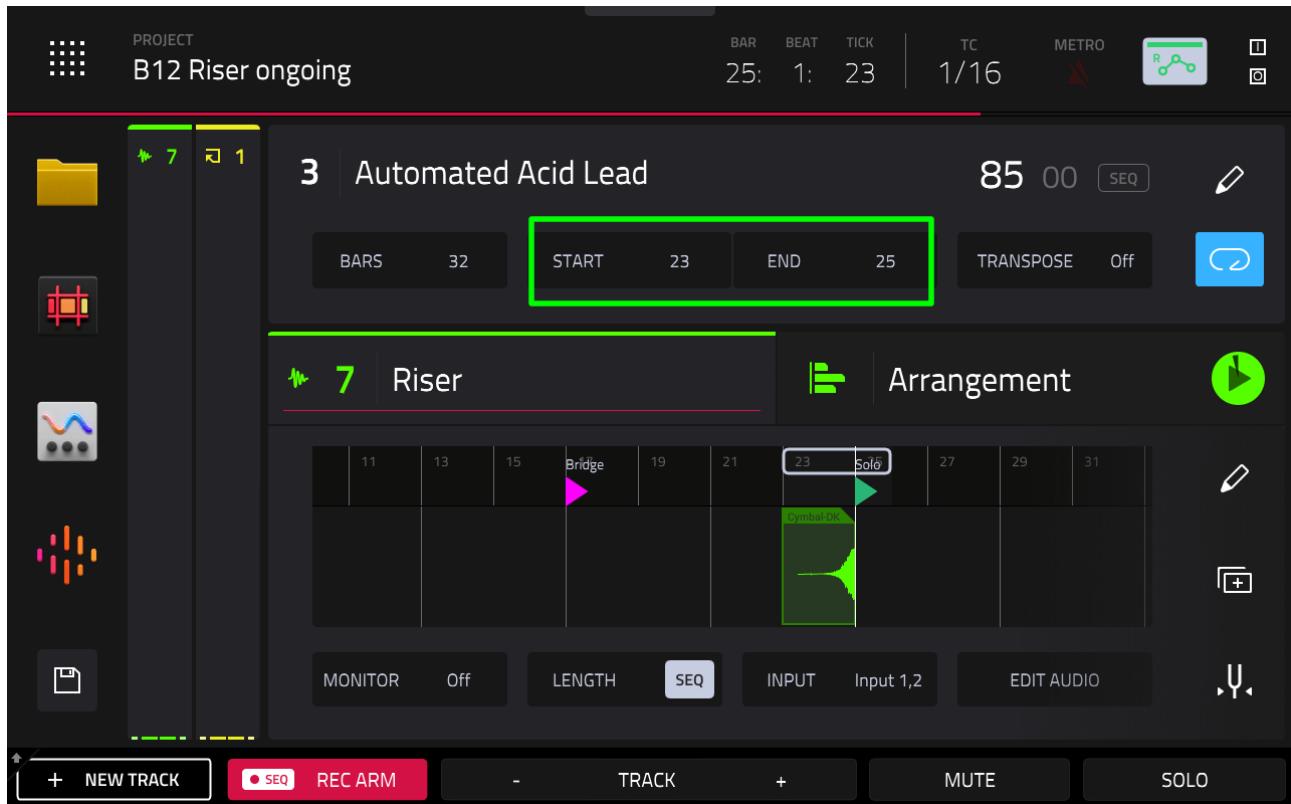
Drag the audio sample so the end lines up with the beginning of **bar 25**:



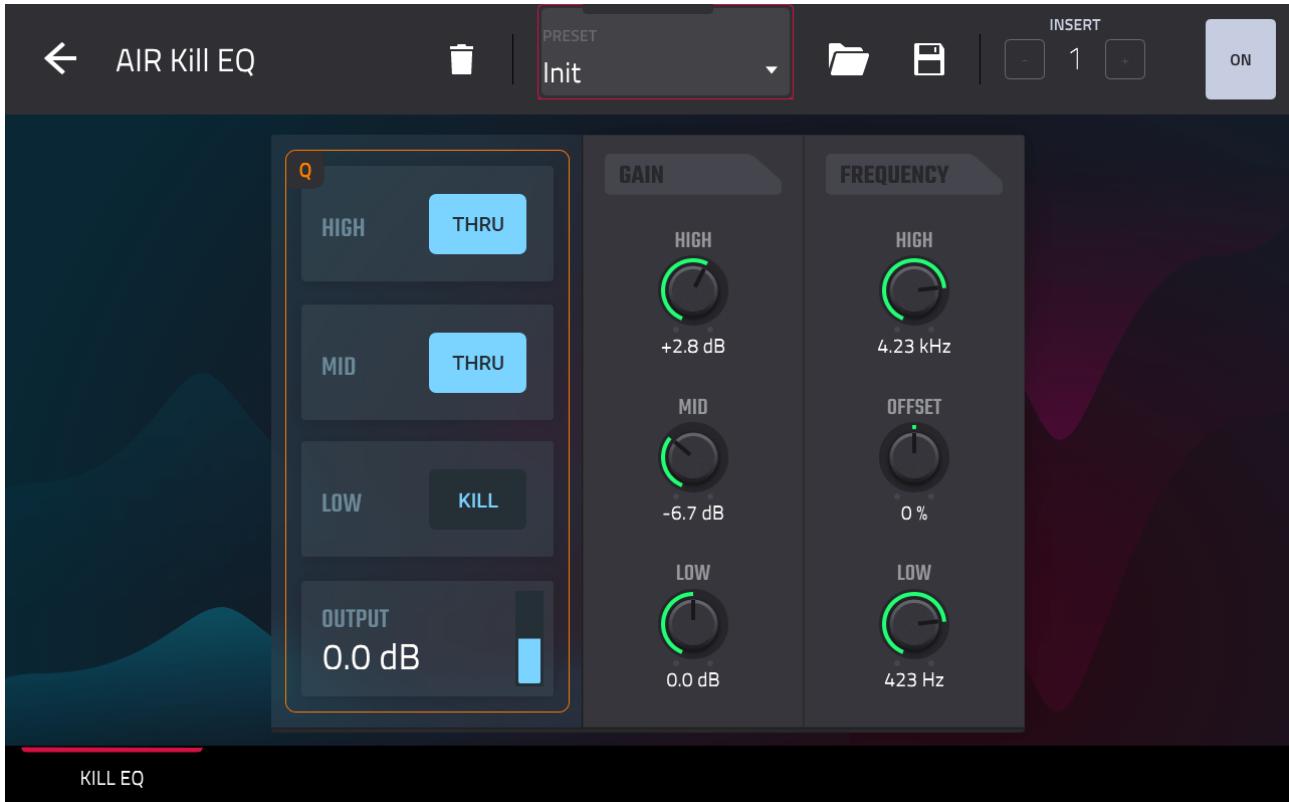
Press [**PLAY**] and listen to the riser in action. Pretty easy right?

Cymbals can sound pretty muddy, especially when used as a riser, so let's filter out some of the lower end crud. First set a sequence loop region around the riser so we can easily keep previewing our FX changes – **bars 23 to 25** should do the trick:

B12: INSTRUMENTAL ARRANGEMENT TECHNIQUES



Go to [MAIN] and open the **XL CHANNEL STRIPS**; select the **FX** tab on the **Riser** track channel. Tap on the **+** icon in **INSERT slot 1** and add an instance of **EQ/Filter > AIR Kill EQ**. Tap on the '**INSERTS**' window icon and hit the pencil icon for Kill EQ:

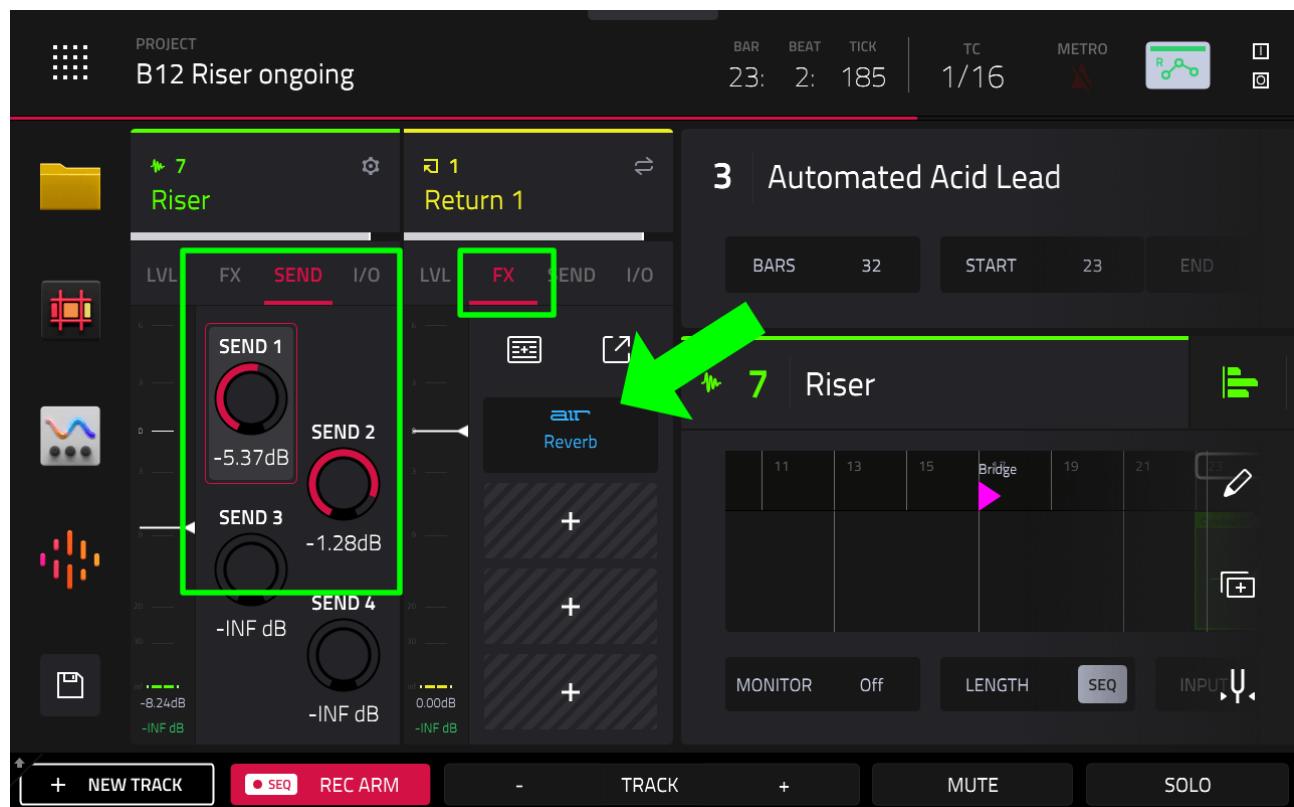


Tap on **THRU** for **LOW** to '**KILL**' all low frequencies – set the **LOW** frequencies band to around **423Hz** (i.e. 'kill all frequencies below 423Hz').

Drop the **MID GAIN** down to around **-6.7dB** and boost the **HIGH GAIN** to **+2.8dB** with a **HIGH FREQ** of around **4.23kHz**. Hit [**PLAY START**] to preview the less muddy riser.

Back in [**MAIN**], select the **SEND** tab. Add a healthy smattering of the send delay we set up previously on **SEND 2** of around **-1.28dB**. Now, remember how **SEND 1** was, by default, pre-configured with an instance of AIR Reverb? We hadn't actually set this up yet, but this is probably a good time to look at configuring the reverb preset here as it can bar used to add some tasty ambience to our riser (as well as other elements in our mix).

Set the **SEND 1** dial to **-5.37 dB** and as you do, notice the second XL CHANNEL STRIP changes from Outputs 1/2 to **Return 1**:



Tap on the **AIR Reverb** box to open the reverb settings for this return track and re-configure the 'Init' preset with the following settings:



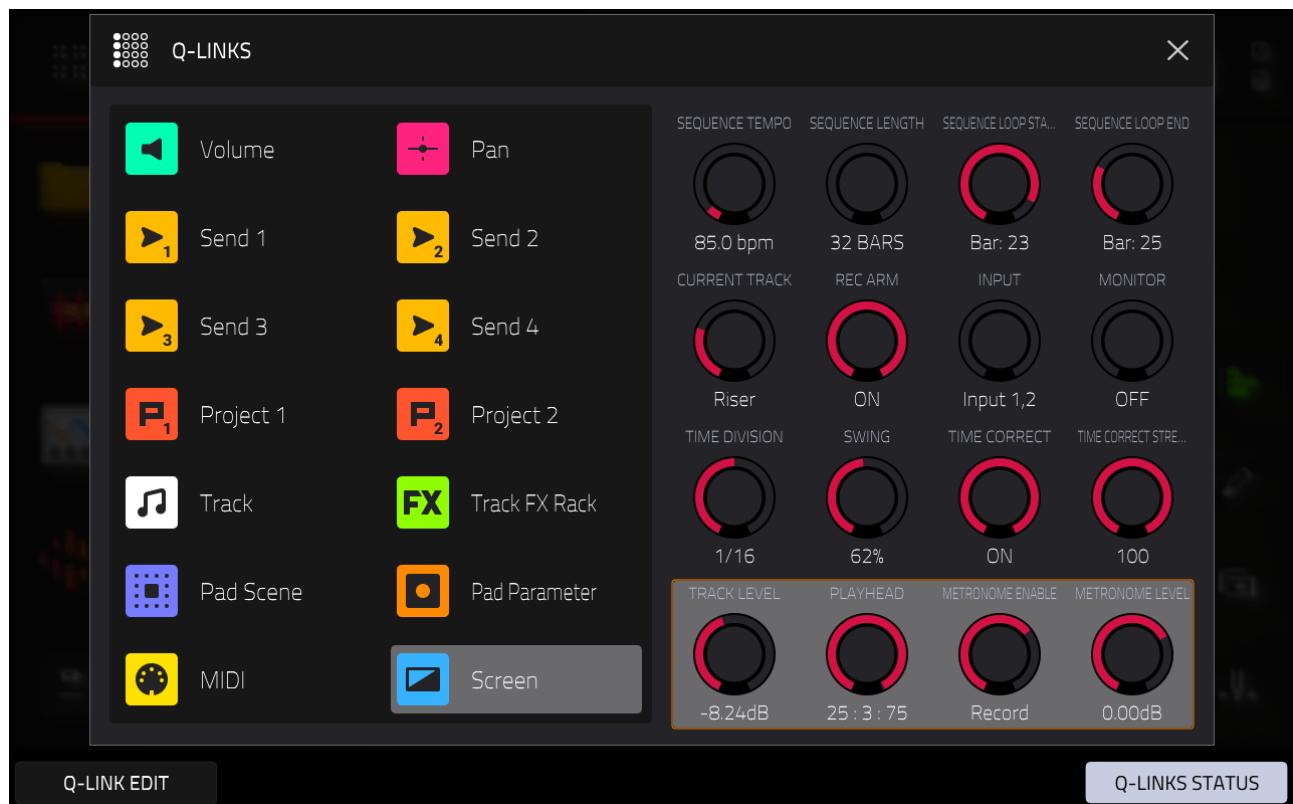
Here I've changed type to a '**Large Studio**' and extended the **TIME** to **3.4s** to give the reverb tail some more length. Remember, for a return track the **MIX** needs to be 100% to ensure the return is contributing a fully 'wet' effected version of the dry signal sent to it.

Hit [**PLAY START**] to hear our effected riser.

ADDING PAN AUTOMATION

Let's add some track automation by taking the panning of the track from hard left to hard right. To control the panning in real time you could tap to select the **LVL** tab in the **XL CHANNEL STRIP** for the **Riser** track and then

control the pan with the data wheel. Alternatively, hold down the [**Q-LINK**] button:



Here you can see an overview of the different Q-LINK configuration modes available. By default Q-LINKS are set to **SCREEN** mode, which means the the parameters assigned to the sixteen Q-LINKS change on each screen, adapting to the currently relevant parameters.

When in MAIN, the 'SCREEN' Q-LINK parameters control various different project parameters (tempo, sequence settings, track level etc). While continuing to hold down the [**Q-LINK**] button, tap on the **PAN** icon:



This overrides screen mode and lets you control the panning of each track using the Q-LINKS; these special Q-LINK modes are 'global', meaning they override the default 'SCREEN' Q-LINK assignments in all screens, not just in MAIN or ARRANGE, so this allows you to adjust specific controls wherever you are in the MPC firmware.

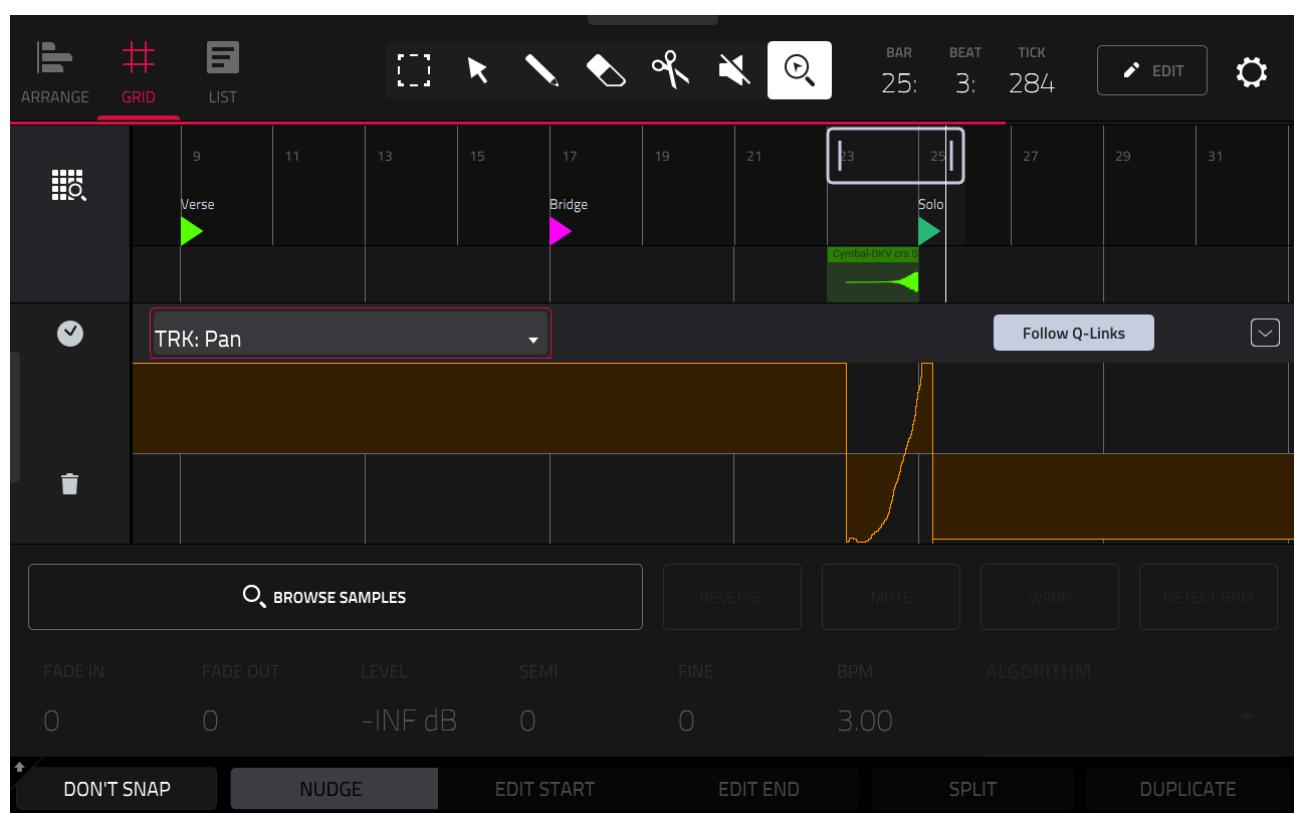


In Section C we'll learn how to configure our own custom Q-LINK 'macro' assignments.

To control the **PAN** of the Riser track, use (Q-LINK 6) which is the second Q-LINK from the bottom, Q-LINK Bank 2.

To write track pan automation, enable automation writing via the AUTOMATION icon in MAIN. Now using the Q-LINK, turn the **PAN** for the **Riser** track hard left (**-50**). Hit [**PLAY START**] and gradually begin turning (Q-LINK 6) until you hit hard right panning (**+50**) at the start of bar 26.

You can [**UNDO**] any mistakes, or head over to **GRID VIEW** and select the pencil tool where you can draw in any panning corrections that might be needed:

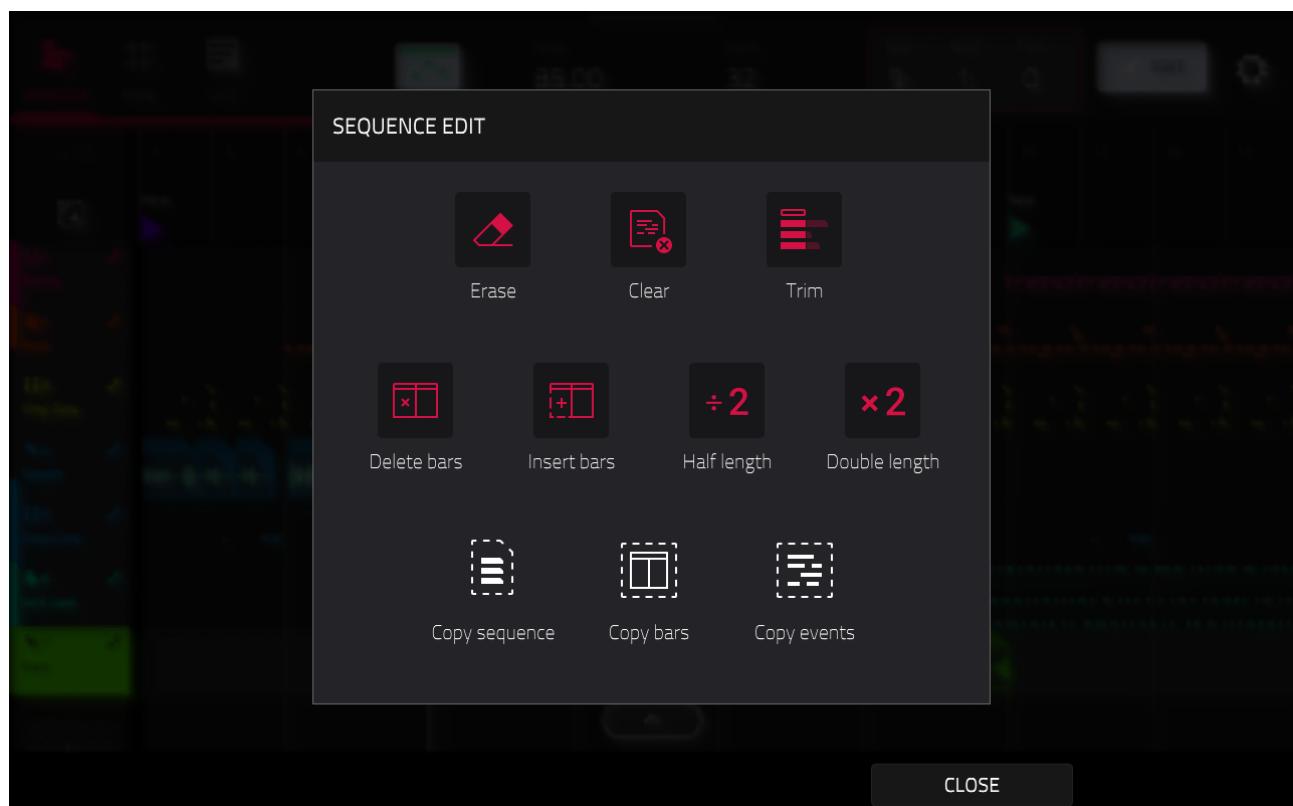


After writing your panning automation, remember to set global automation back to READ. You might also want to set Q-LINK mode back to SCREEN. Load up **B12 Riser.xpj** and select **sequence 2** to hear the song with the automated riser added.

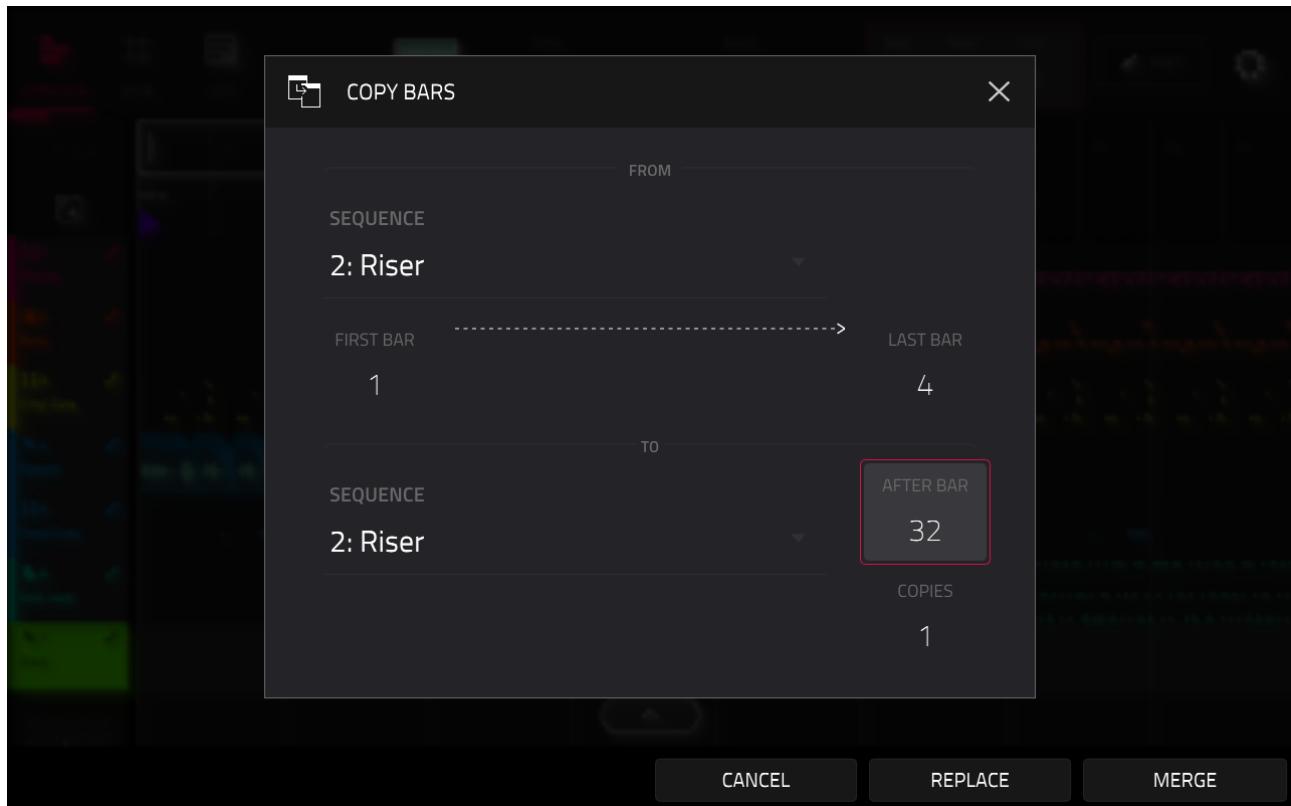
ADDING AN ENDING

At this point we have a nice 32 bar sequence but we can flesh this out even further using the MPC's sequence editing tools. We've already seen the 'Double Length' function, but there's other ways to extend the arrangement of a song.

Go to the **ARRANGER**, hold down **[SHIFT]** and tap on **INTRO**. Hit the **EDIT** button in the top tool bar to bring up the **SEQUENCE EDIT** screen:

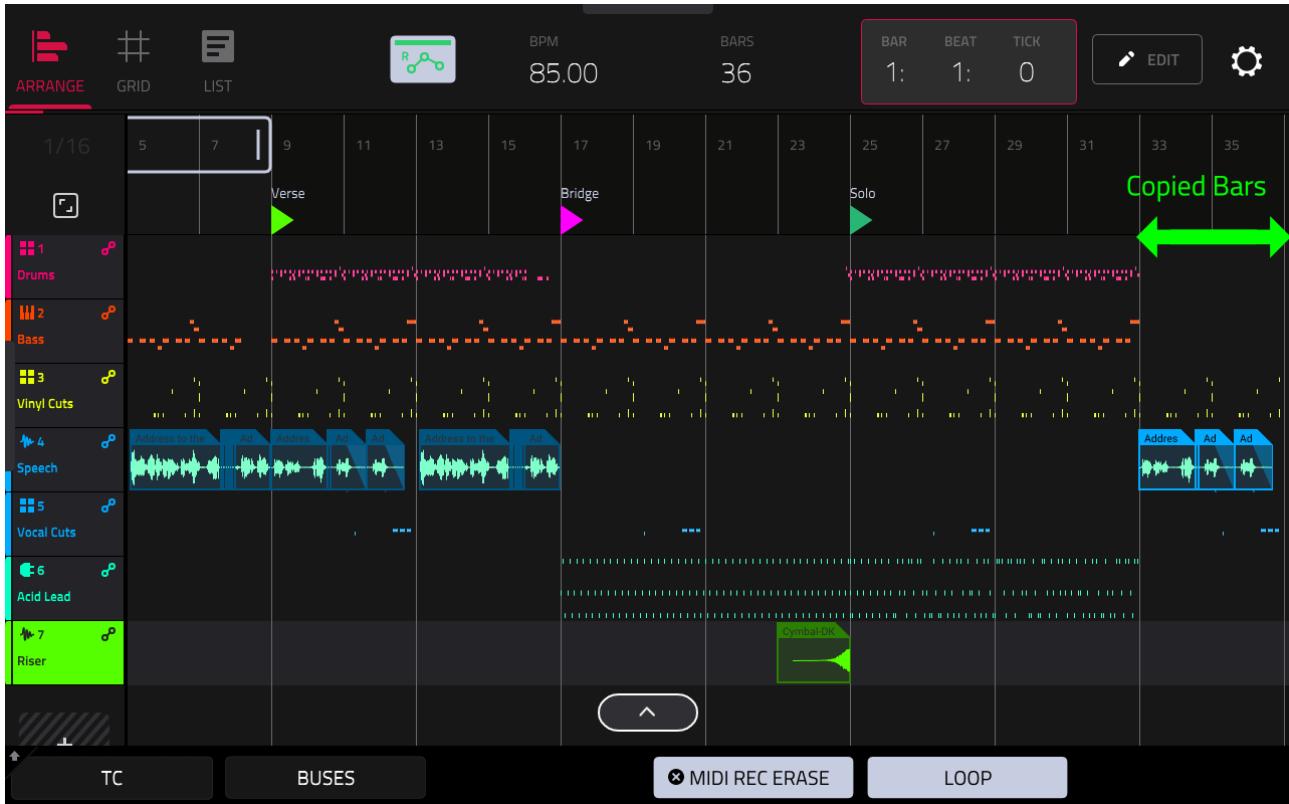


Select **Copy Bars**:



Let's copy the first 4 bars of the sequence and paste them on to the end of our sequence. So set **FIRST BAR: 1** and **LAST BAR 4** to set the region to be copied. Now set the destination for the paste by setting **AFTER BAR: 32** (i.e. paste after the end of bar 32) and set **COPIES: 1**. Hit **REPLACE**:

B12: INSTRUMENTAL ARRANGEMENT TECHNIQUES

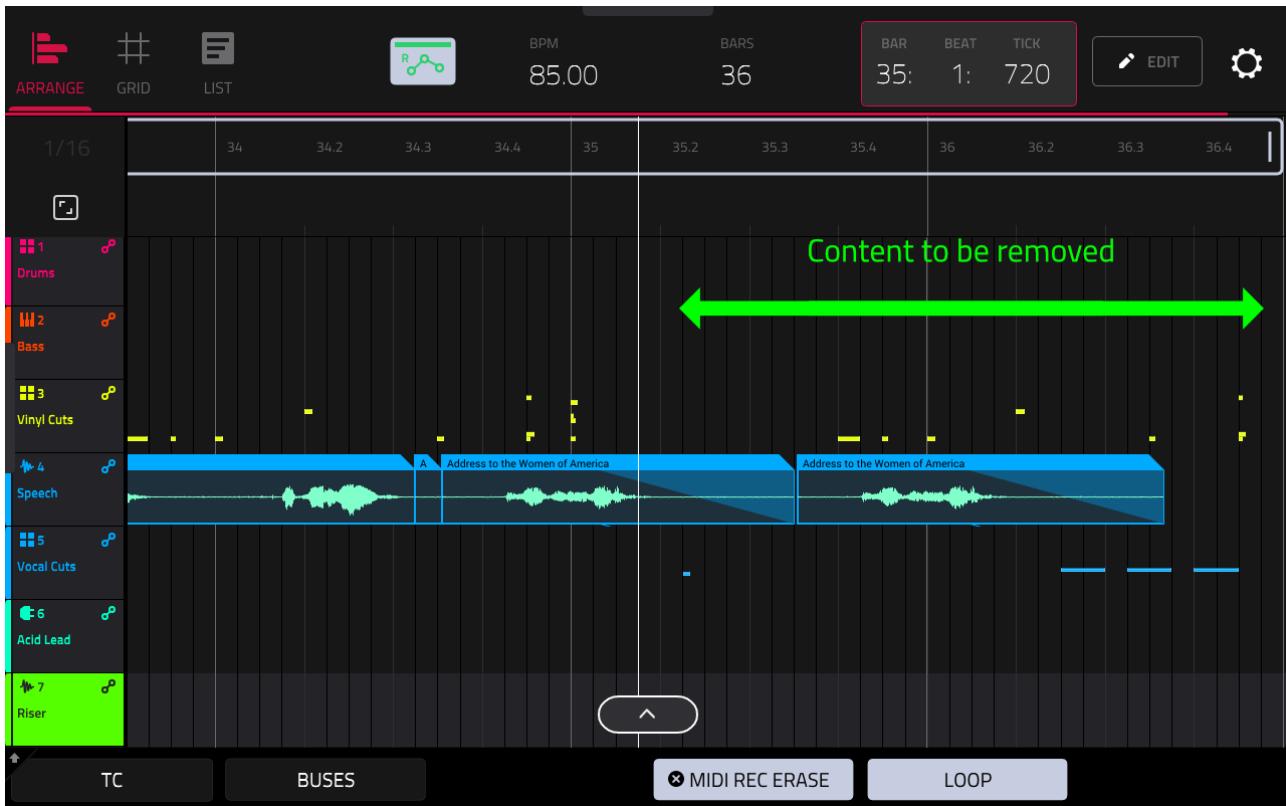


Use your finger or (**Q-LINK 6**) to scroll the arranger view so the end of the sequence is visible. As you can see the sequence is now 36 bars long.

After listening to the ending of the sequence I reckon the ending would actually sound pretty good if we just remove all the audio from **35:1:720** onwards (immediately after the words '*a revolution*') and just let the various decays and reverbs do their thing until they fade to silence.

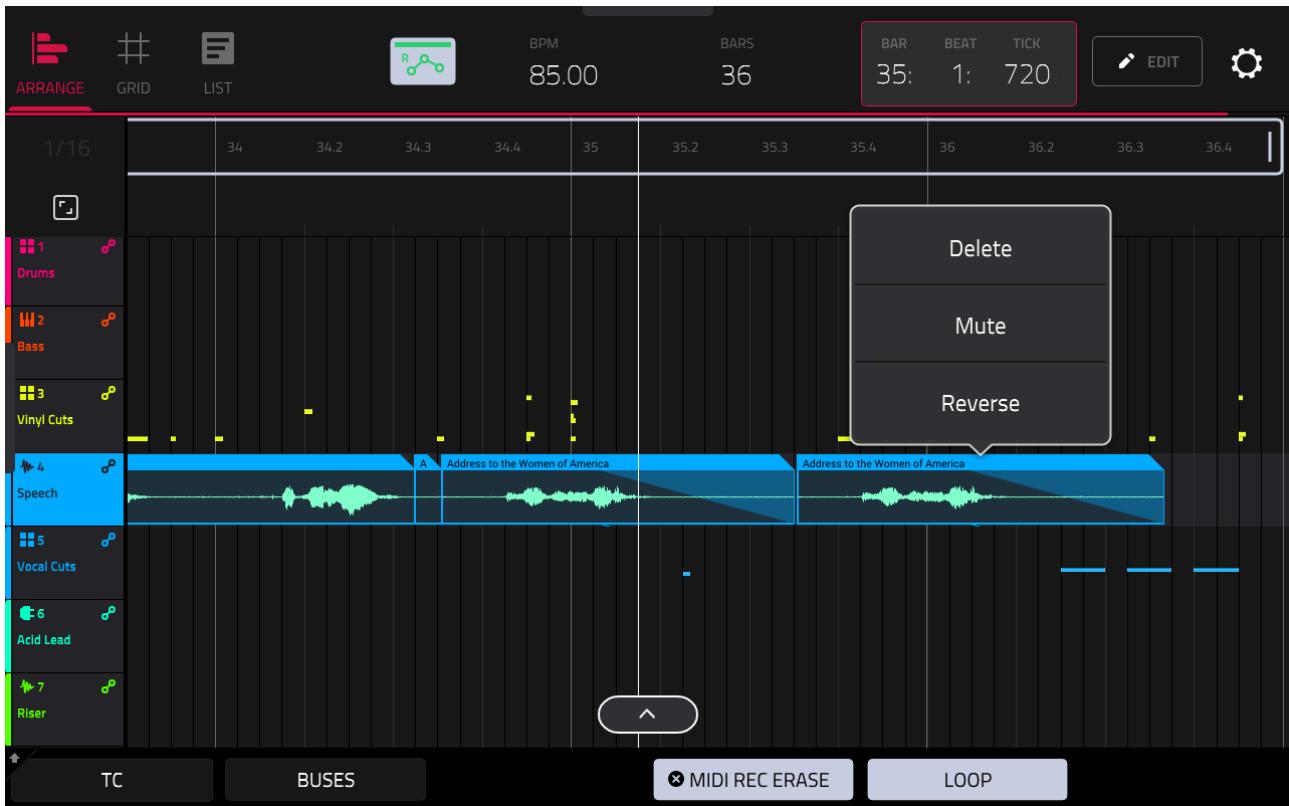
If you look at the magnified arranger at this point you can see that only three tracks have any data after the point; **Vinyl Cuts, Speech and Vocal Cuts:**

B12: INSTRUMENTAL ARRANGEMENT TECHNIQUES



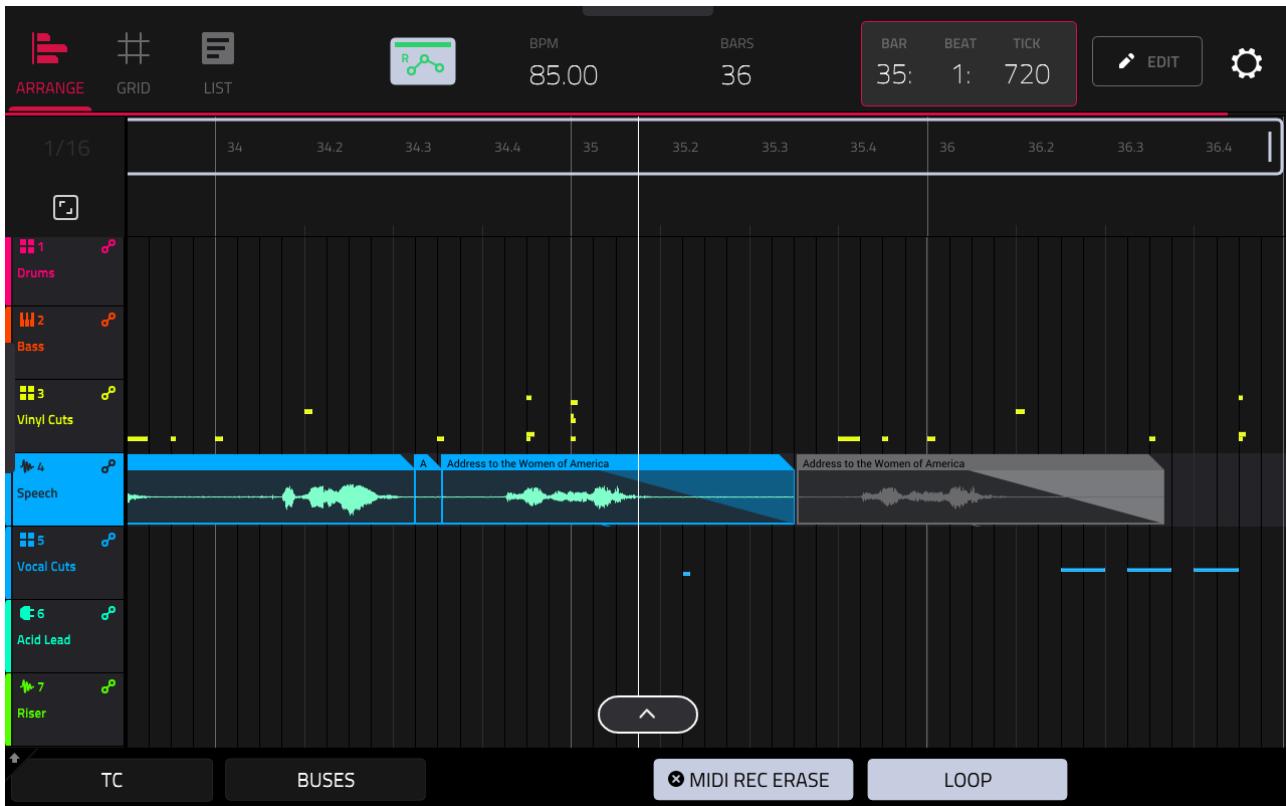
To remove the last audio region in the Speech track, tap and hold on the region and from the pop up window, select **Delete**:

B12: INSTRUMENTAL ARRANGEMENT TECHNIQUES



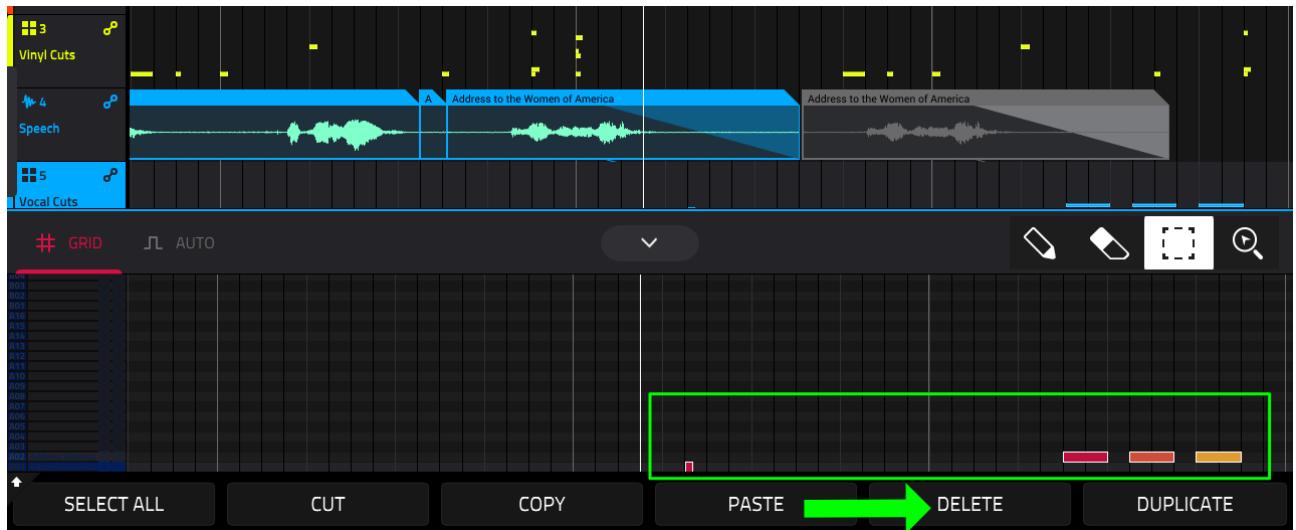
Alternatively you could also select '**Mute**':

B12: INSTRUMENTAL ARRANGEMENT TECHNIQUES

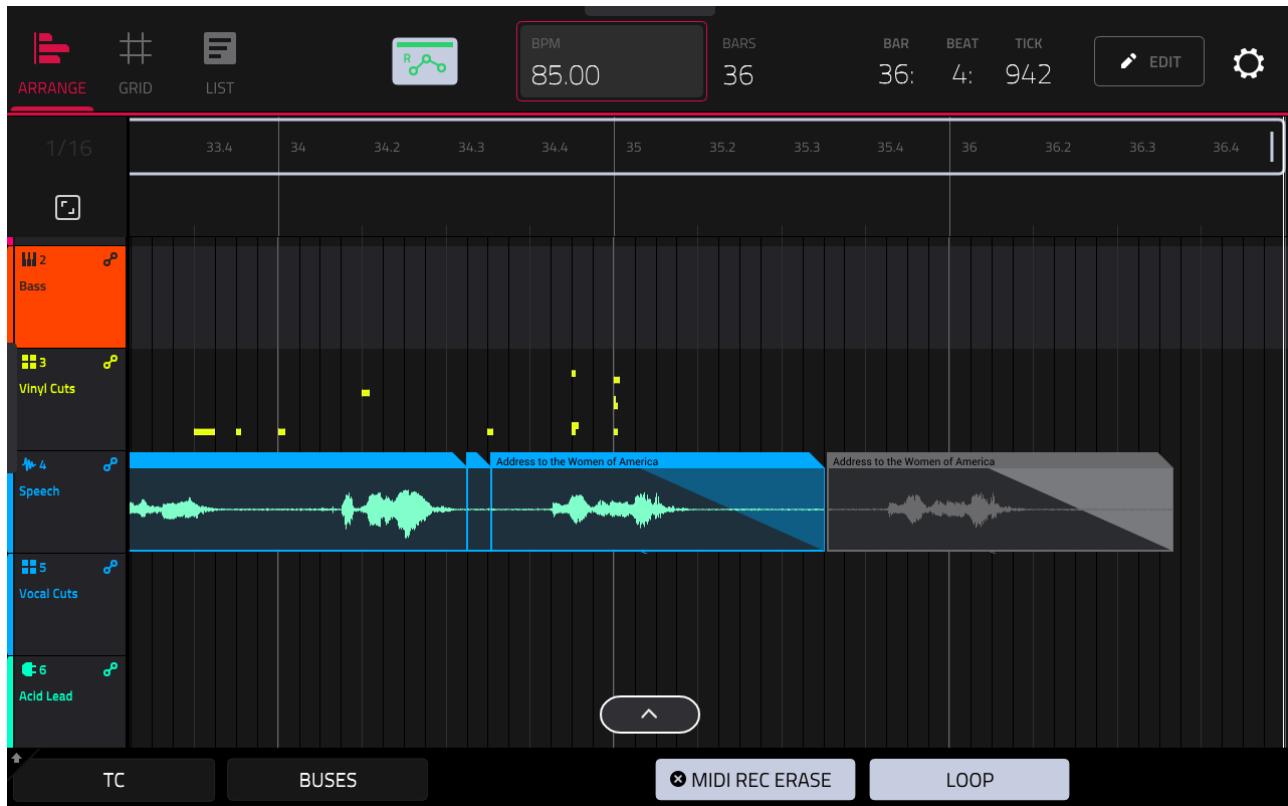


Perhaps the easiest way to remove all the data from Vocal Cuts and Vinyl Cuts is to use the **split screen GRID VIEW** and the **erase tool**, or select events with the **Select Tool** and use **[SHIFT] > DELETE**:

B12: INSTRUMENTAL ARRANGEMENT TECHNIQUES



If you listen to the ending (from bar 32 onwards) you'll hear the sounds from the Vinyl Cuts track continue playing and fade out giving a nice, natural sounding end to the song.



Load the project file, **Additional Sections.xpj** and select **sequence 2, Ending** to hear my version so far.

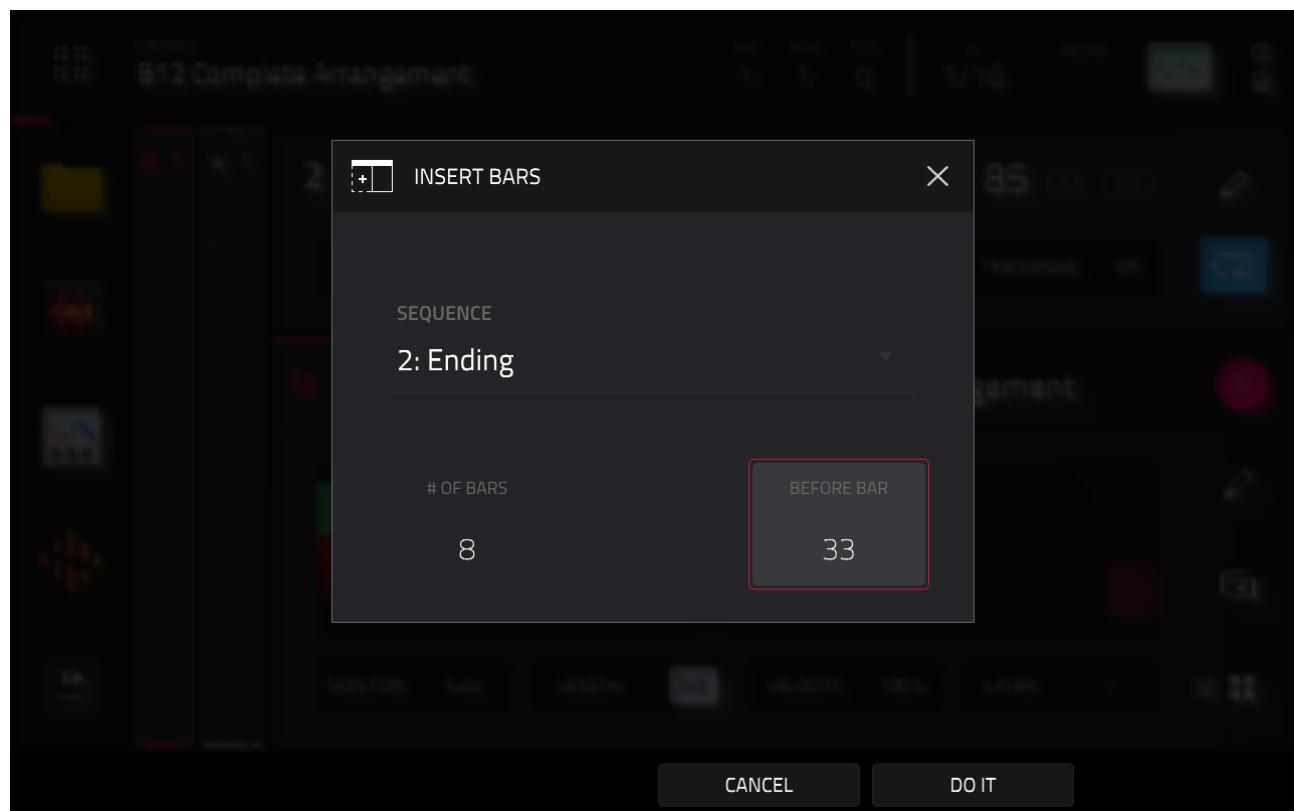
EXTENDING THE SOLO

After listening to the solo I think it would benefit from being double the length, so let's extend it and add some additional instrumentation to it to give it some extra flavour.

In the **ARRANGER**, hold down **[SHIFT]** and tap on the **SOLO** locator. Hit the **EDIT** icon at the top of the screen to open the **SEQUENCE EDIT** screen.

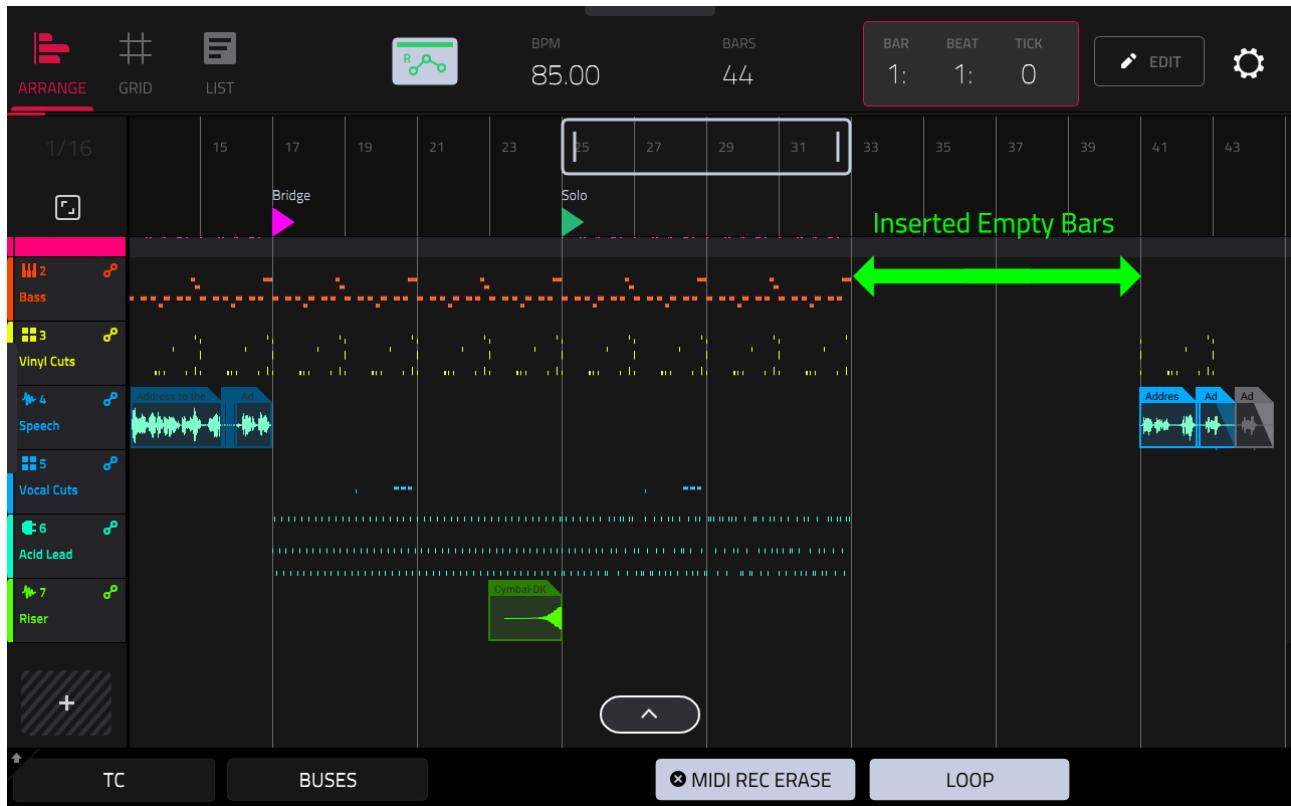
We want to copy the existing 8 bars of the 'solo' section (bars 25 to 32) and paste them directly at the *end* of the solo section (before bar 33); this will give us a 16 bar solo section starting at bar 25 and ending at bar 40.

There's currently no way to carry out this type of operation in a single step, so here's the current method I employ. First, select **INSERT BARS** and set up as follows:

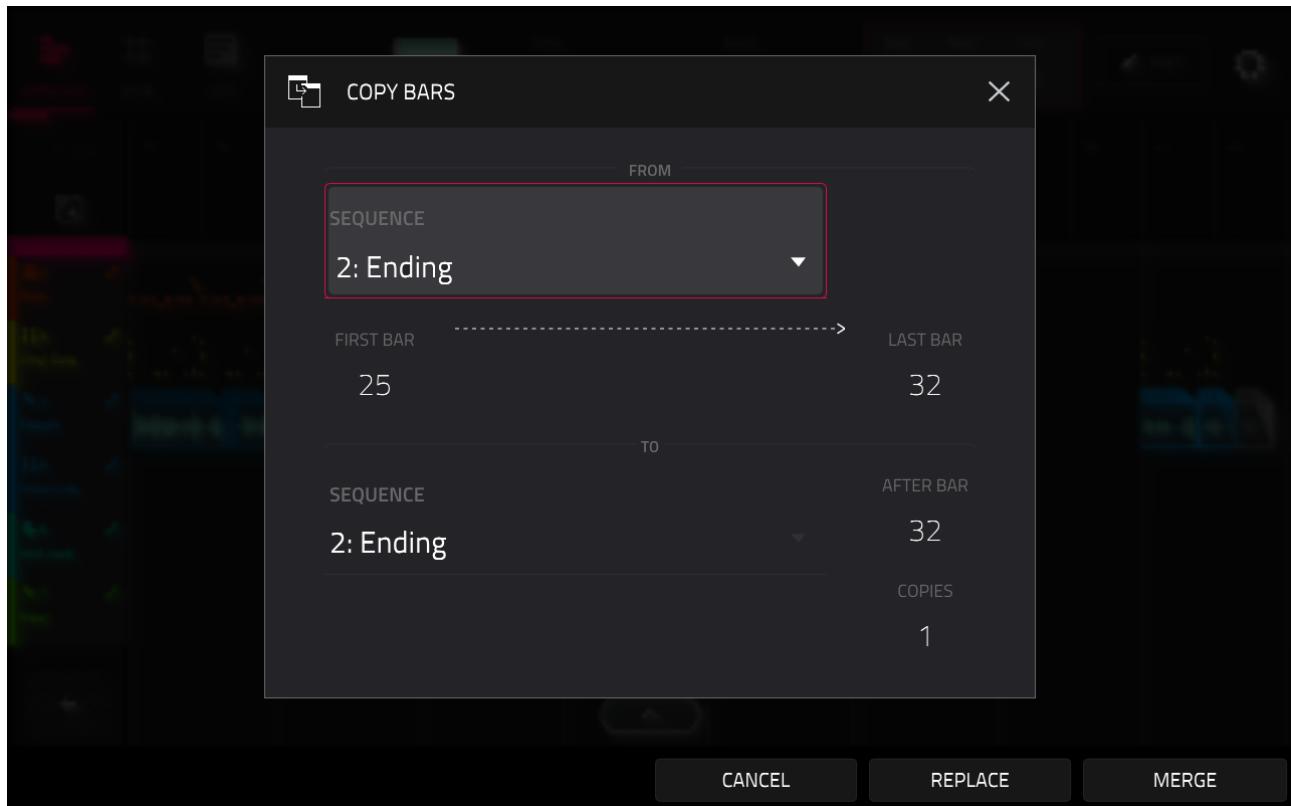


This will insert 8 empty bars into our sequence directly before bar 33. Hit **DO IT** to carry out this edit:

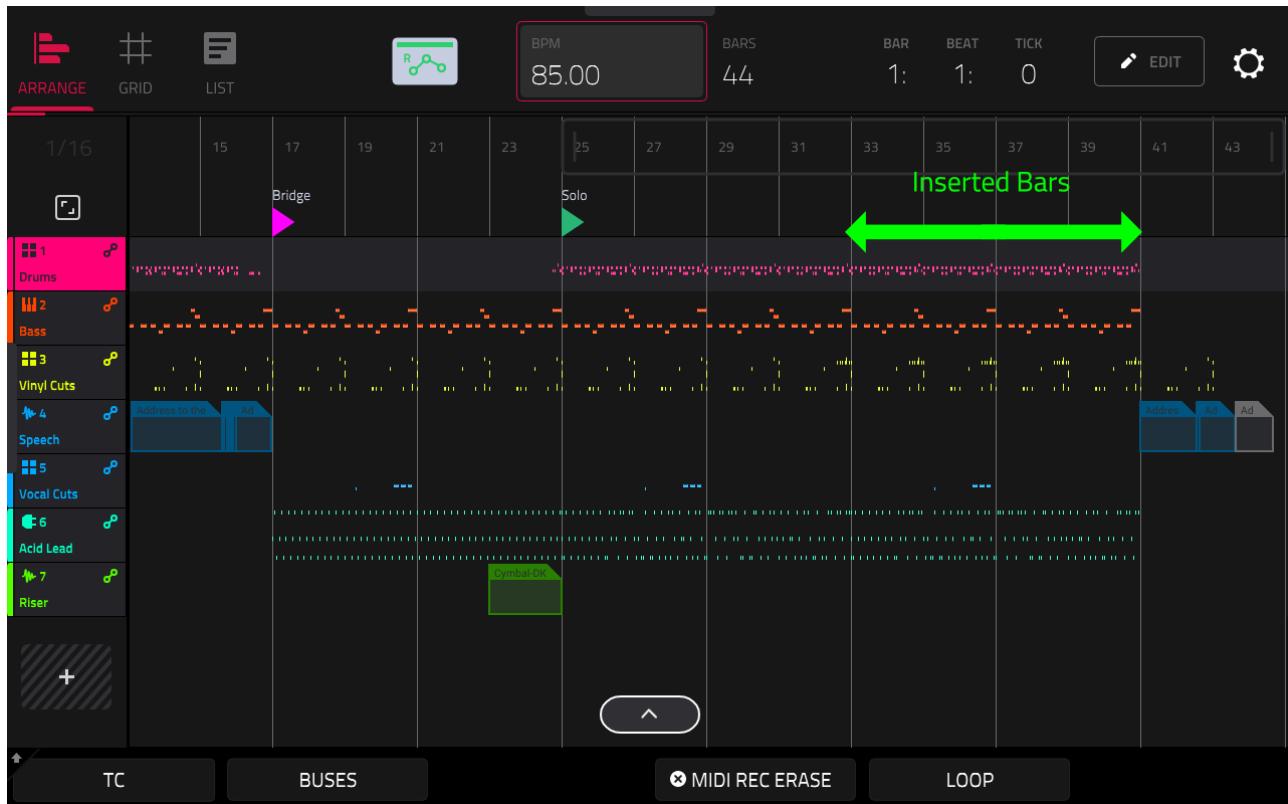
B12: INSTRUMENTAL ARRANGEMENT TECHNIQUES



Now head back to **SEQUENCE EDIT**, select **COPY BARS** and set up as follows:



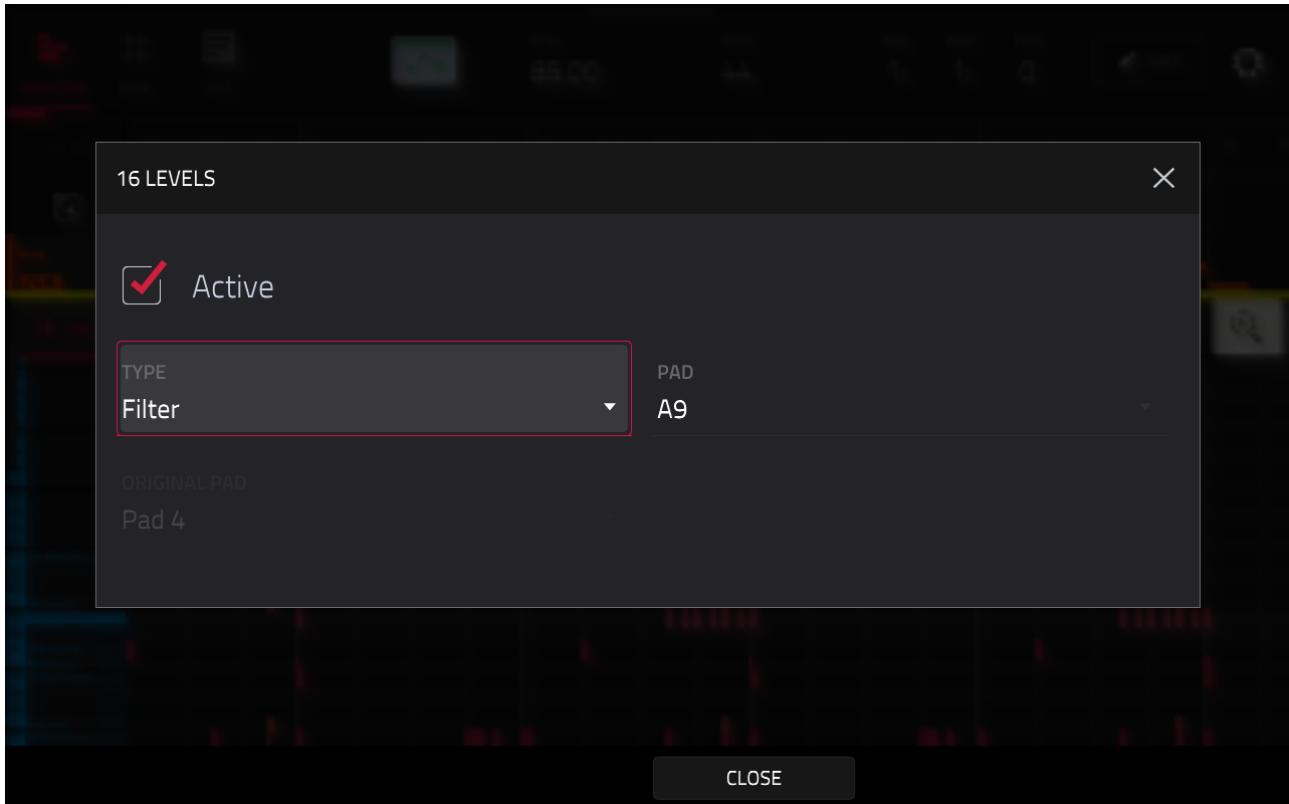
This will just place a copy the first 8 bars of the solo (bars 25 to 32) within the blank 8 bar section we created. Hit **REPLACE** or **MERGE** to carry out the operation:



USING 16 LEVEL 'FILTER'

We previously used the 16 LEVEL 'Tune' function to create melodic lines from one of our Vinyl Cuts, but there's actually several different types of 16 LEVEL that we can employ.

Tap on track 3, **Vinyl Cuts** and hit pad **[A09]**. Now tap on **[16 LEVEL]**:



This time we're going to select '**Filter**' as the **TYPE**. Now play pads A01 to A16 and you'll hear that the MPC has configured each pad to have a slightly different filter 'cutoff' setting. If you take a quick peak at the **TRACK EDIT > ENV:FILTER** page for this pad you'll remember we previously set a **Band 2** (2 pole bandpass) filter on this pad, so the 16 pads are just giving us different cutoff values for this bandpass filter.

Back in the **ARRANGER**, set your playhead to **bar 31** and hit [**OVERDUB**] & [**PLAY**] and record some additional filtered hits using 16 LEVEL – check out **sequence 3 'Extended Solo'** for my version, here I overdubbed a seven pad filter riff using the pad sequence 4, 7, 8, 11, 12, 13, 14, just before the end of every two bar block (starting at 32.3.480).

ADDING ADDITIONAL DRUMS & VARIATIONS

In ARRANGE mode, set your sequence loop back to cover the entire sequence, or just turn off **LOOP** in the bottom tool bar. Now listen through to your arrangement and think of areas where you can start adding some variety.

One way would be to overdub some additional drum fills, particularly some additional snares here and there, especially towards the end of each 8 bar section.

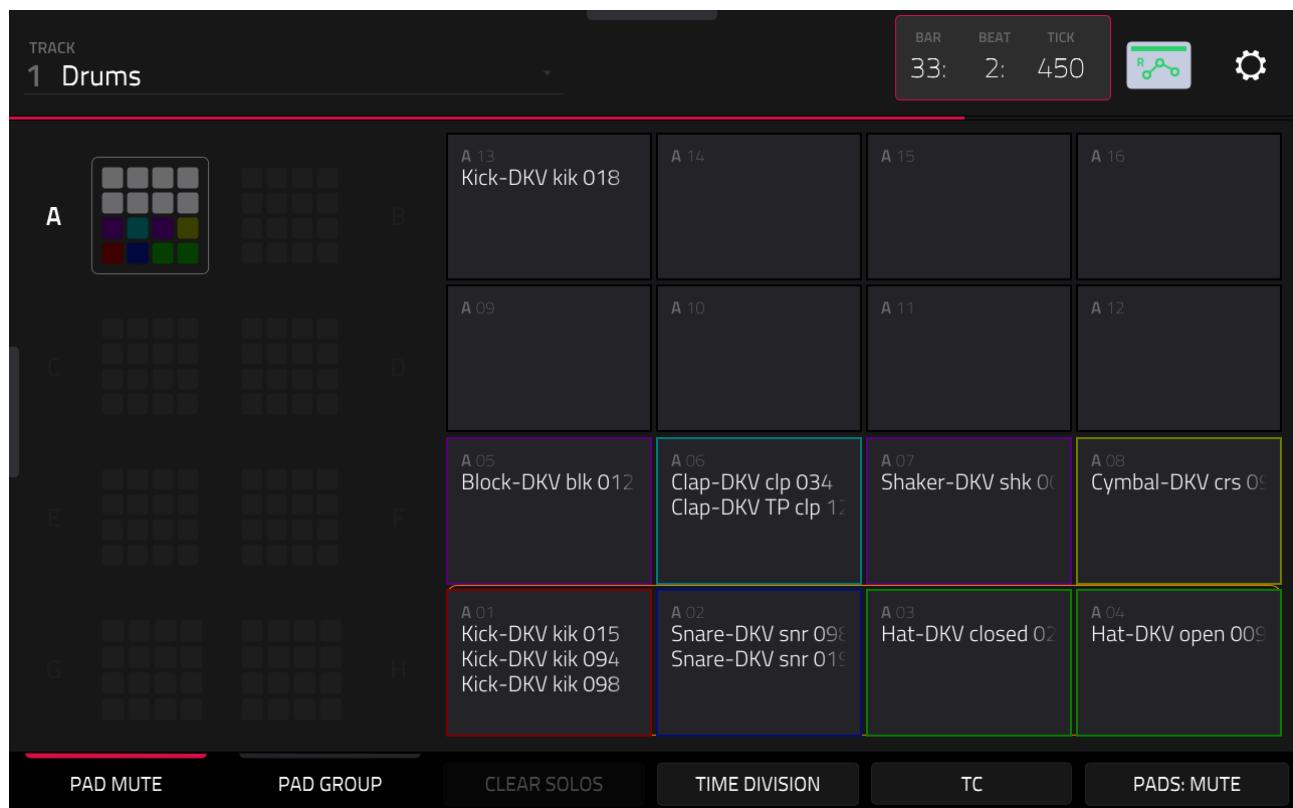
Another way would be to drop out some drums – I actually think the 'swung' snares during the solo section no longer fit with the more straight acid lead, so I used the [**ERASE**] button to take out those individual snares – alternatively use the GRID EDIT erase/delete tools.

USING PAD MUTES

I also dropped out some drums just before the second half of the solo kicks in at bar 33, this just add a little tension. However for this I used a different technique.

We previously looked at track mutes which we initially used for experimenting with possible 'subtractive' arrangements, but which could also be used as an alternative to permanently erasing events in a final arrangement.

In addition to muting an entire track, the MPC also allows us to temporarily mute individual pads within a DRUM track. Select track 1 (**Drums**) and go to [**MENU**] > **PAD MUTES**:

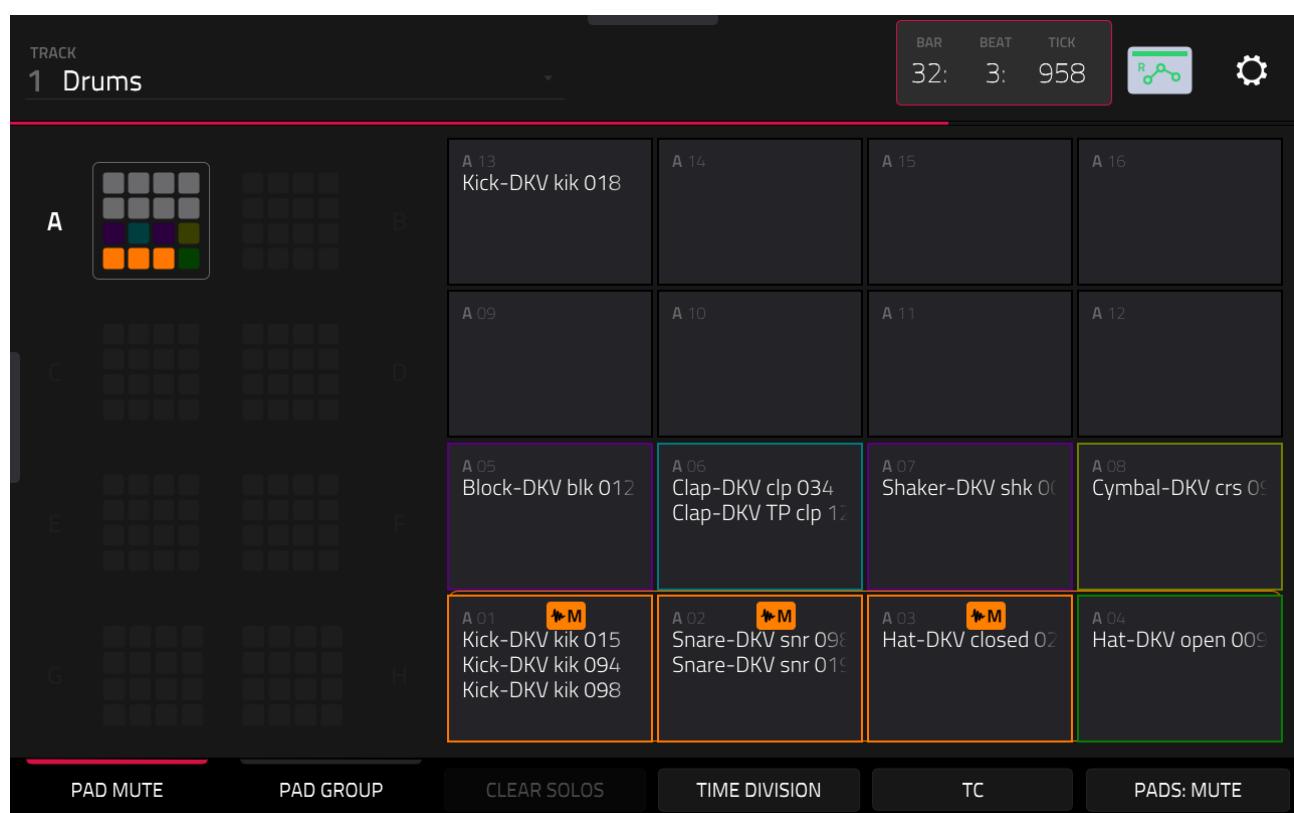


This screen looks similar to the TRACK MUTE screen, however instead of each pad representing a track within our current sequence, the pads simply reflect the actual pad structure of the currently selected DRUM track.

Go to **BAR 25** and press [**PLAY**]. Now tap pad **[A02]** and all snare events will be instantly muted; tap again to unmute. As with track mutes you can group pads so they can be muted together as well as use the **TC** and **TIME DIVISION** buttons to enable 'mute quantisation'.

One key difference compared to the TRACK MUTE screen is that pad mutes are all '**audio**' mutes, it's not possible to use 'event' style muting, so the moment you mute a pad, the audio is instantly silenced (which is typically not desirable).

You'll notice that as we approach the end of bar 32, my pad mutes appear on pads **[A01]**, **[A02]** and **[A03]**:



They are then disabled in time for the start of bar 33. Pad mute data is fully editable in **LIST EDIT**, Use **View: Track Automation**:

B12: INSTRUMENTAL ARRANGEMENT TECHNIQUES

The screenshot shows the MPC Software interface in 'Track Automation' mode. The top bar displays 'BAR 32: 3: 958' and 'TC 1/16'. The 'VIEW' dropdown is set to 'Track Automation'. The main area is a table listing automation events:

#	TIME	PAD/NOTE	LENGTH	VELOCITY	MOD TYPE	VALUE	PROB	RAT
1	001:01:000	■+ A01 (36)			Pad Mute	Off	On	
2	001:01:000	■+ A02 (37)			Pad Mute	Off	On	
3	001:01:000	■+ A03 (38)			Pad Mute	Off	On	
4	032:03:528	■+ A03 (38)			Pad Mute	Off	On	
5	032:03:531	■+ A01 (36)			Pad Mute	Off	On	
6	032:03:531	■+ A02 (37)			Pad Mute	Off	On	
7	032:04:933	■+ A01 (36)			Pad Mute	Off	On	
8	032:04:933	■+ A03 (38)			Pad Mute	Off	On	
9	032:04:941	■+ A02 (37)			Pad Mute	Off	On	
(end of events)								
EVENTS		TEMPO	INSERT	DELETE	▶	NUDGE		

The same limitations apply as with any type of mute, so while a pad is muted, it is not possible to actually play or overdub that pad into the same track as it is globally silenced. But pad mutes are fun to experiment with and can be incorporated into any part of the song building process, be it the initial compositional stages, the 'structural' stages or even as a live performance tool.

In the next chapter we'll perform some final tweaks to the mix, create a stereo mix down and also look at how we can export our song in formats suitable for carrying out additional work in a computer DAW.

B13: MIXING & EXPORTING

In this section we'll be applying some final touches to our song before learning how to create export it into formats suitable for distribution on social media or in preparation for additional work in computer DAWs or with professional mixing and mastering engineers.

TOPICS COVERED IN THIS CHAPTER

- ✓ What is mixing?
- ✓ Using the channel mixer
- ✓ Applying compression & EQ
- ✓ Using submixes
- ✓ Mixing with sends & returns
- ✓ Adding further Mix automation
- ✓ Creating mixdowns

WHAT EXACTLY IS MIXING?

Mixing is the process of creating a balanced and cohesive sound to your song. We've touched on mixing throughout the course in terms of creating a basic mix of the elements of our drum kit, but at this stage of the

process we are now looking at the entire song as a whole and how all the individual elements work together.

The mixing process you employ is not set in stone and may often vary from project to project, but for me personally it often first involves working on individual tracks (and the elements within each track), then working on multiple tracks together, then submixes and eventually the master bus. This is often referred to as '**bottom up**' **mixing**.

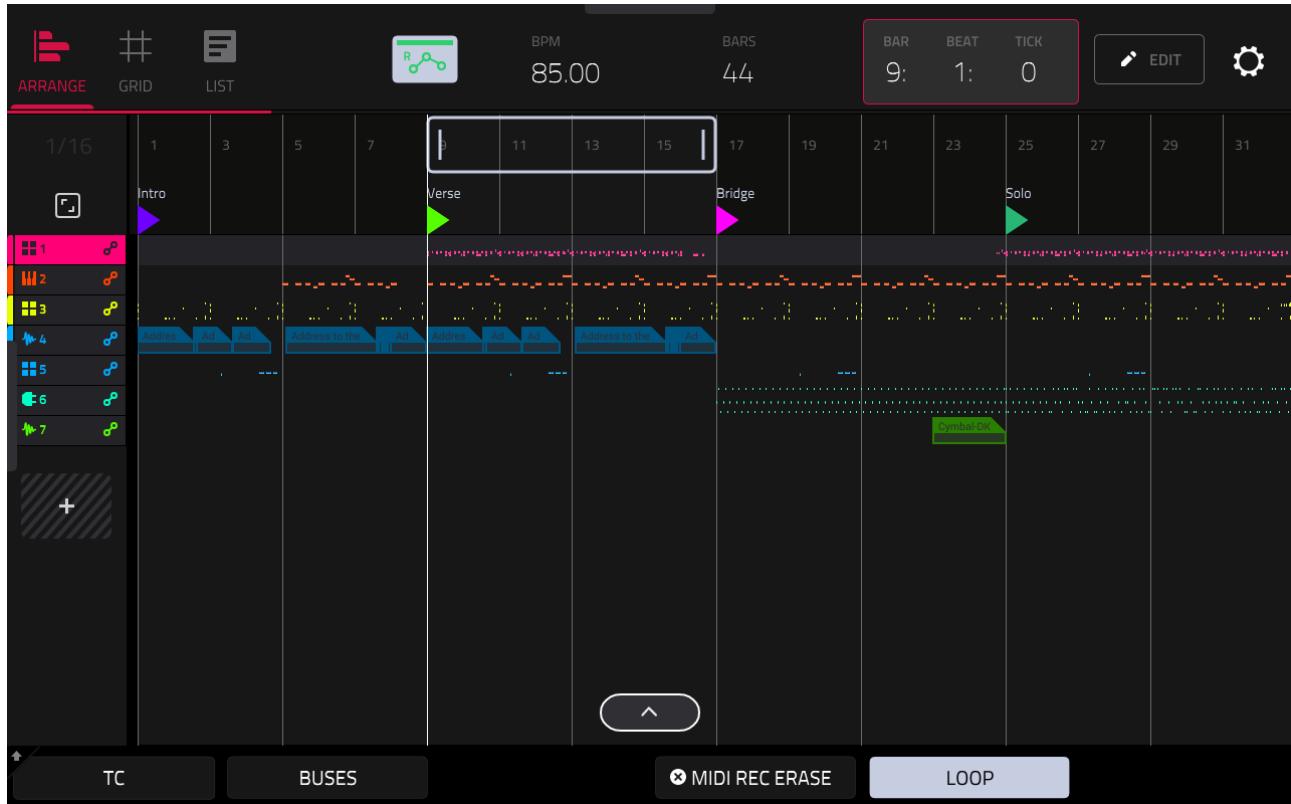
However, many people prefer to mix in the opposite direction, starting with the master buss and setting a general 'sound' to their mix, and then gradually working down to individual tracks and the individual components of those tracks. This process is called '**top down**' **mixing**.

We've already been using a broom up technique from our work in the pad mixer and XL Channel Strips, so I will continue on that path and show you a few handy mixing techniques that you can incorporate into your song workflow before you look at creating a final 'mix down'.

USING THE CHANNEL MIXER

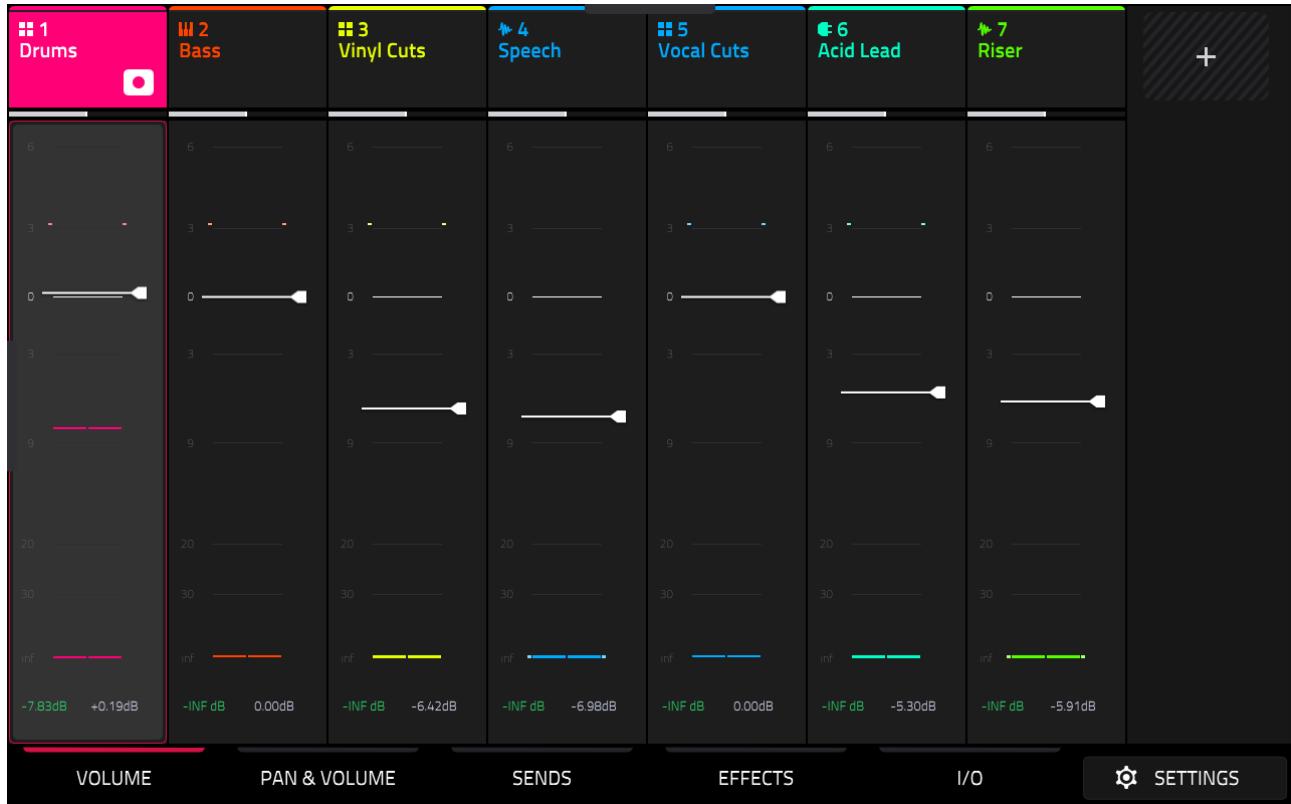
From the **B13** folder, load up the project file **B13 Mixing.xpj** and select **sequence 2, Mixing**.

Before we begin some work on the mix, head over to **ARRANGER** and set a loop region that encompasses the main hook so we have all the primary content playing in a continuous loop; bars 9 – 16 should do the trick, which also happens to be the 'Verse' section, so just hold down [**SHIFT**] and press the **VERSE** locator shortcut.



In the MPC there are two key places where we are able to 'mix' our song (and all the individual elements within it). We can use (and have been using) the **XL Channel Strips** in **MAIN** which provide access to the mixer settings on all channels, be it pads/keygroups, tracks, submits, returns and main outputs.

We can use the MPC's dedicated mixer screens; we've already seen the **PAD MIXER** screen which we previously used to apply a rough mix to our drum kit. The PAD MIXER is used exclusively for mixing individual pads, or keygroups; to adjust the mix of all the individual *tracks* within our sequence, we can use **[MENU] > CHANNEL MIXER**:



Often the environment you choose for mixing is ultimately down to your personal preferences and can also be dependent on what stage of the song creation process you are currently in - XL channel strips work well in the compositional stages, dedicated mixers are probably more useful in the latter stages.

The CHANNEL MIXER lets us see and adjust channel strips for up to 8 tracks simultaneously. If you tap on the track channel head, you'll also be selecting that track in your sequencer, so tap on the header for **track 1** and your pads will switch to the drum kit on track 1. You can double tap on the header to adjust the individual track settings (track name, colour, position etc).

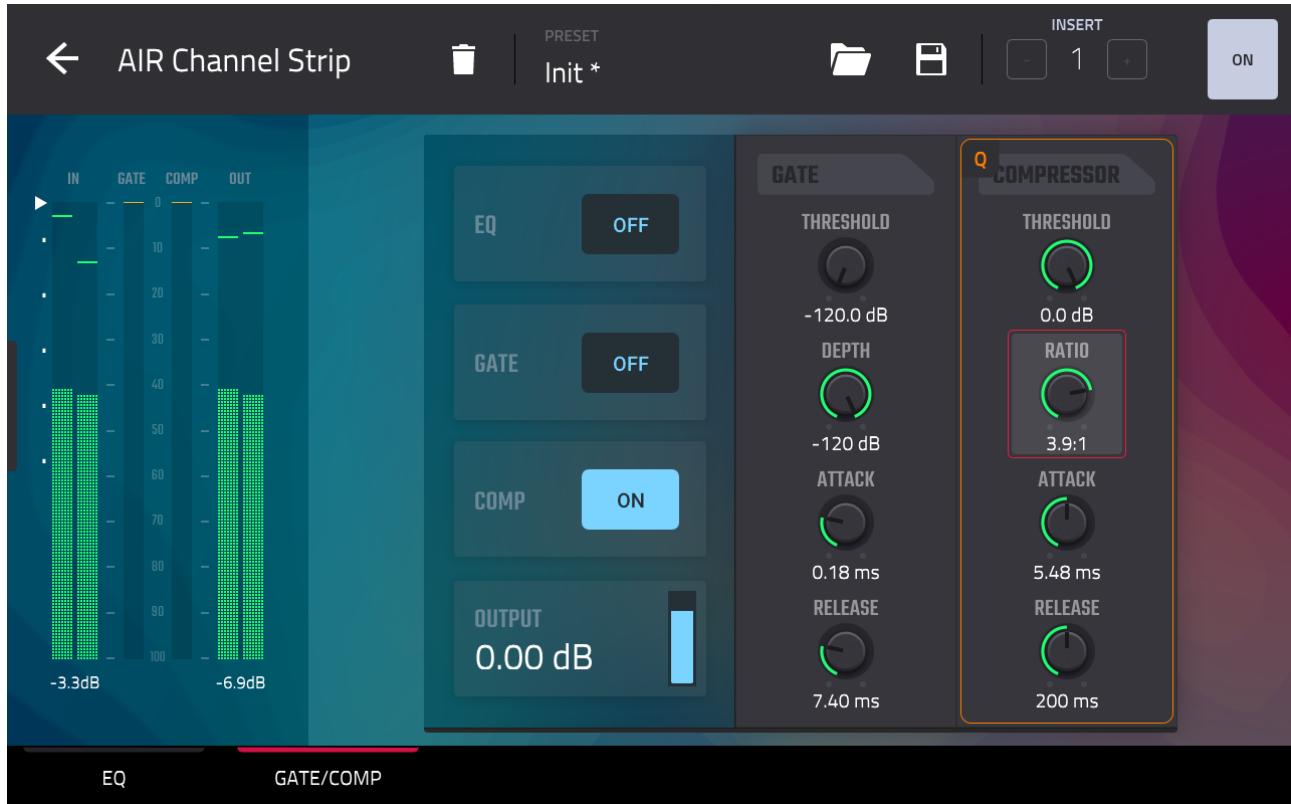
Like the PAD MIXER, the CHANNEL MIXER is divided into a number of different screens, each of which focuses on a different set of parameters. Let's add some FX to our Drums track; press on **EFFECTS**:



Press [**PLAY START**] and hit the **SOLO** button on the **Drums** track; we can now focus only on the drums. The first thing I suggest adding to a drum track would be an **AIR Channel Strip**; this particular effect can be added via its own unique the shortcut – hold down on the [+] button until an instance of Air Channel Strip appears appears:



Now single tap the **AIR Channel Strip** icon to bring up the settings:

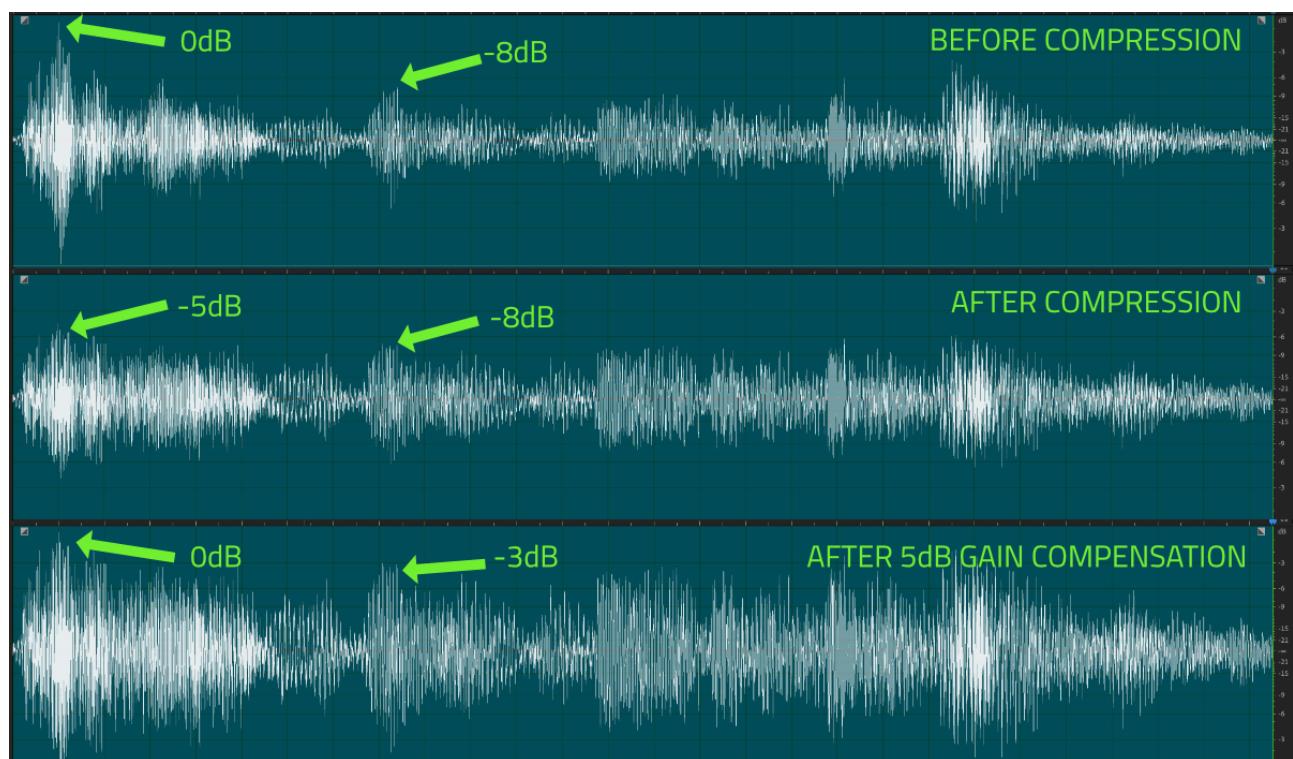


AIR Channel Strip is three FX plugins combined into one; a compressor, an EQ and a gate, so it's often the preferred choice on channel where you want to apply 2 or 3 of these FX as it's going to save you some FX slots.

First, turn off all three effects except for **COMP** and select the **GATE/COMP** tab which handles the compression (and gate) settings.

First off, what is compression? Well fundamentally a compressor is used to reduce the differences between the loudest and quietest parts of an audio signal. When a compressor detects a peak (**transient**) above a certain level (the '**threshold**'), it reduces the volume of that peak, while leaving the quieter parts of the signal untouched.

This reduces the 'dynamic range' of the signal (the difference between the quietest and loudest parts) - after reducing the peaks, the entire signal level can now be increased which in turn allows us to increase the *perceived loudness* of a track.



When used subtly, it can help give a sense of cohesion between the various instruments within the track (often called '*glue*'), which is especially useful when you have a drum kit made with drums from various different sources. When used aggressively it can completely alter the sound of a track or be used to create '*pumping*' and other dynamic effects.

Let's use the compressor to add some cohesive '*glue*' to our drums which will make the entire kit sit more comfortably in the mix. Our aim is to

provide some very gentle 'squashing' that will not have too much impact on the sound of the transients in our drum break.

The **COMPRESSOR** settings in AIR Channel Strip (far right column) are nice and simple. Let's start with some basic settings which we can then tweak to suit our specific drum kit. There are four settings which when combined give the desired effect.

The first is the **THRESHOLD**; this sets the signal level at which compressor will 'kick in' and do its thing. That 'thing' is gain reduction.

When the signal exceeds the threshold, the amount of gain reduction applied is set by the **RATIO**. Higher ratios mean very audible, aggressive compression, lower ratios provide a more subtle compression. Set a **RATIO** of **1.3:1** and a **THRESHOLD** of **-25dB**. This means for every 3dB of signal above -25dB, the compressor will only allow 1dB of signal through.

ATTACK controls the reaction speed of the compressor. A fast attack means the compressor kicks in immediately which makes it useful for controlling clipping and taming excessive transients. A slower attack means the compressor takes a little longer to react to any signal exceeding the threshold, which makes it useful when you wish to retain some initial transients. Let's start with a slow-ish **ATTACK** of **15ms**.

The **RELEASE** controls how long it takes for the compressor to stop the working on the signal. Glue compression typically works best with a fairly short release time which, when combined with more subtle compression ratio and threshold, will ensure the compression sounds natural with some dynamics still intact (short release times combined with extreme

compression will normally lead to 'pumping'). Set an initial **RELEASE** of **49ms**.

Hear how the compressor is affecting the drums. Toggle **COMP: ON/OFF** to hear the difference; an obvious change is a drop in the overall volume (this should be expected), but you should also hear that the drums sound more cohesive, the snare is especially tamed and the whole drum performance is starting to 'gel' together.

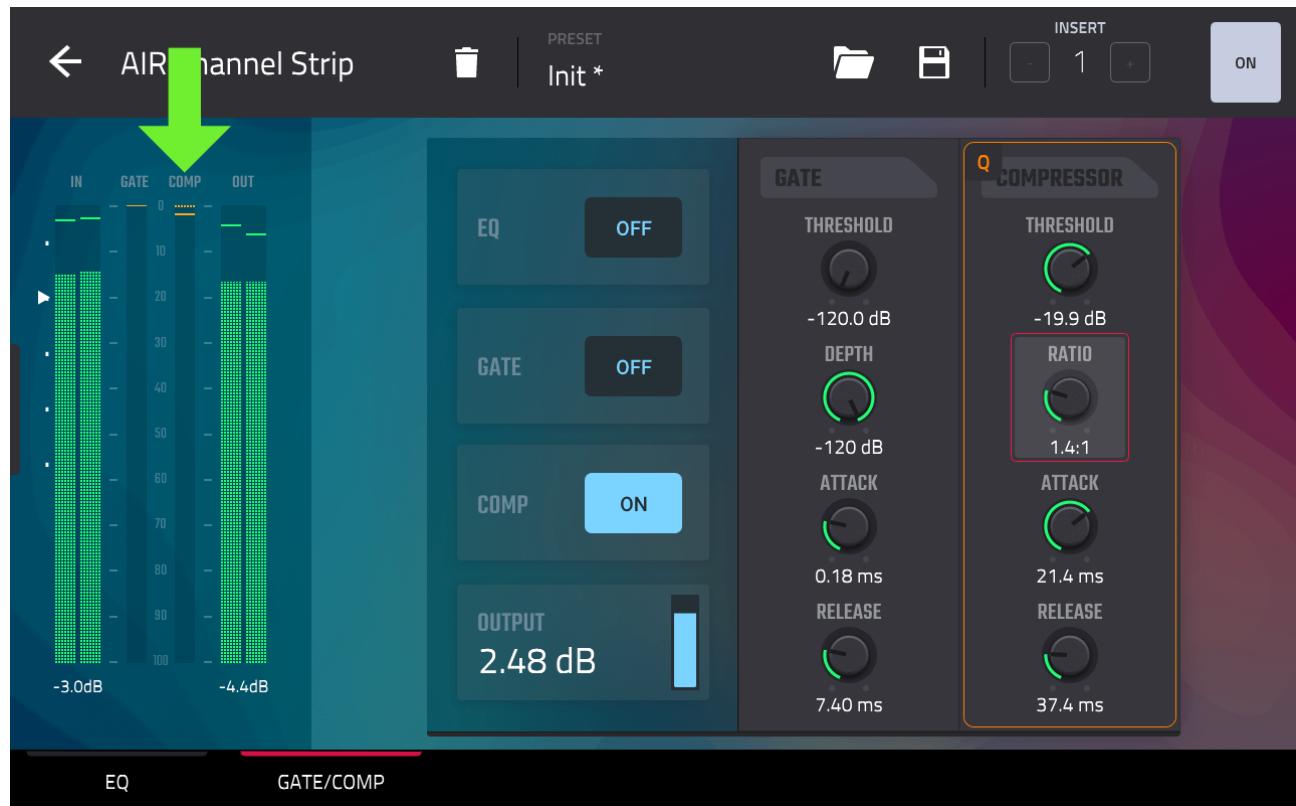
Let's experiment. Start lowering the **THRESHOLD**, too low and the drums start to sound more aggressive and unnatural. The key is to find a blend of **THRESHOLD** and **RATIO** that gives a natural sounding drum kit sound. This is simply a case of tweaking and using your ears; try a **THRESHOLD** of **-20.5dB** and begin playing with the **RATIO**. You should hear that at high ratios the compression is highly aggressive and unnatural and definitely not what we're looking for! Set the **RATIO** to **1.4:1**.

Now play with the **ATTACK** to hear how it affects the action of the compressor. This one is more subtle; at 100us, where the compressor is kicking in almost immediately, you can hear the transients being adversely affected and 'dulled'. As you increase the attack we let more of that initial transient through, so the key is to set the attack to a value that keeps the initial transient while still compressing and 'gluing' everything after it. Try an **ATTACK** of **19.7ms**.

Listen to what happens when you set a really long **RELEASE**; the compressor never stops working and it completely sucks the life out of the drums. A short release is going to allow the compressor to back off and retain some life and dynamism. As long as the overall compression is

fairly gentle, the short release is going to ensure we have a nice natural sounding glue. Set a **RELEASE** of **35.2ms**.

Watch the level meter on the left hand side:



The **COMP** column shows us how much gain reduction is in effect, approximately **3dB**. As our overall signal level has now been reduced, we can consider making up this knocked off gain – this means you can in theory raise the entire signal by 3dB so the uncompressed signal and compressed signal are outputting at the same level and hence can be compared more accurately.

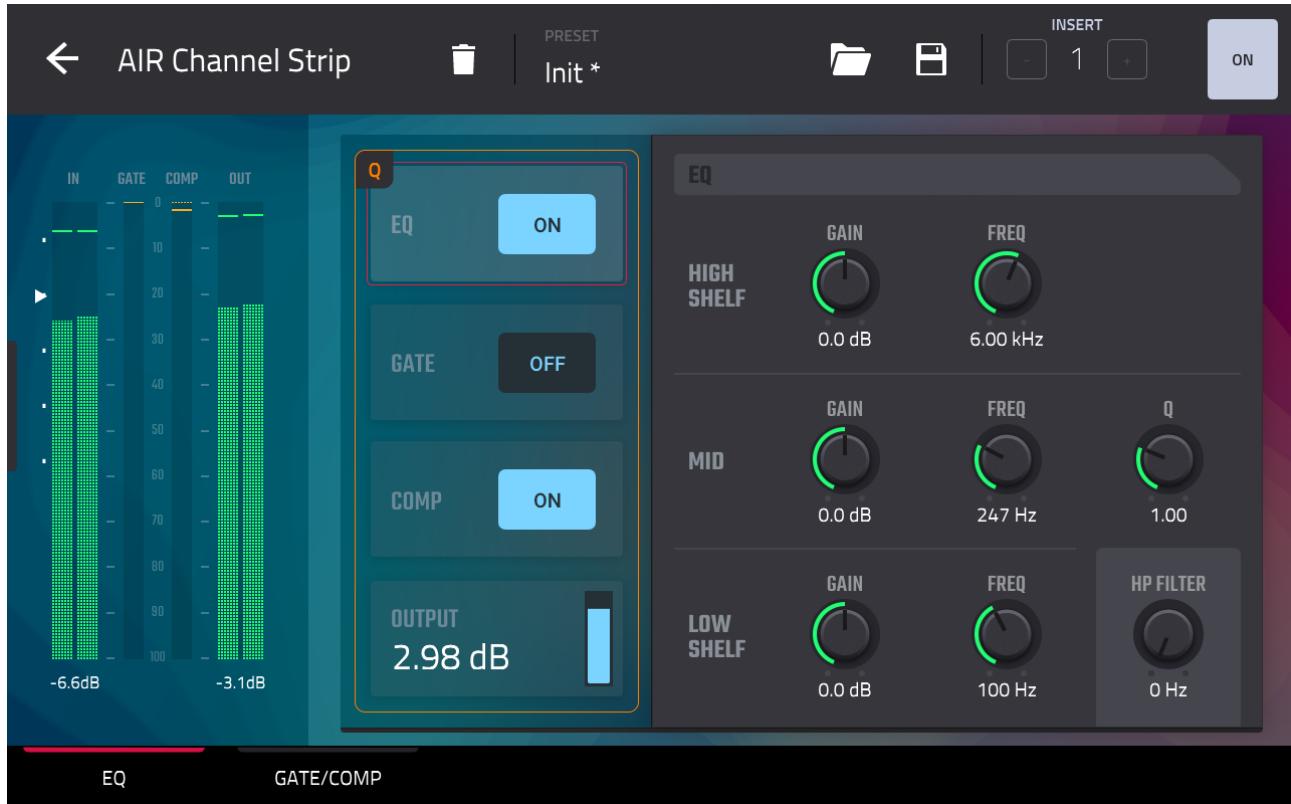
To 'make up' the drop in output level, use the **OUTPUT** parameter to increase the **OUTPUT** to **2.98dB** and toggle **COMP:ON** to hear the

differences. Remember, glue compression is subtle, it shouldn't be screamingly obvious, so listen to the transients, listen to how the drums work together, continue to tweak the compression settings until you are happy. Often you'll need to keep adjusting all four of the main parameters until you get the sound you need. Here's what I settled on:



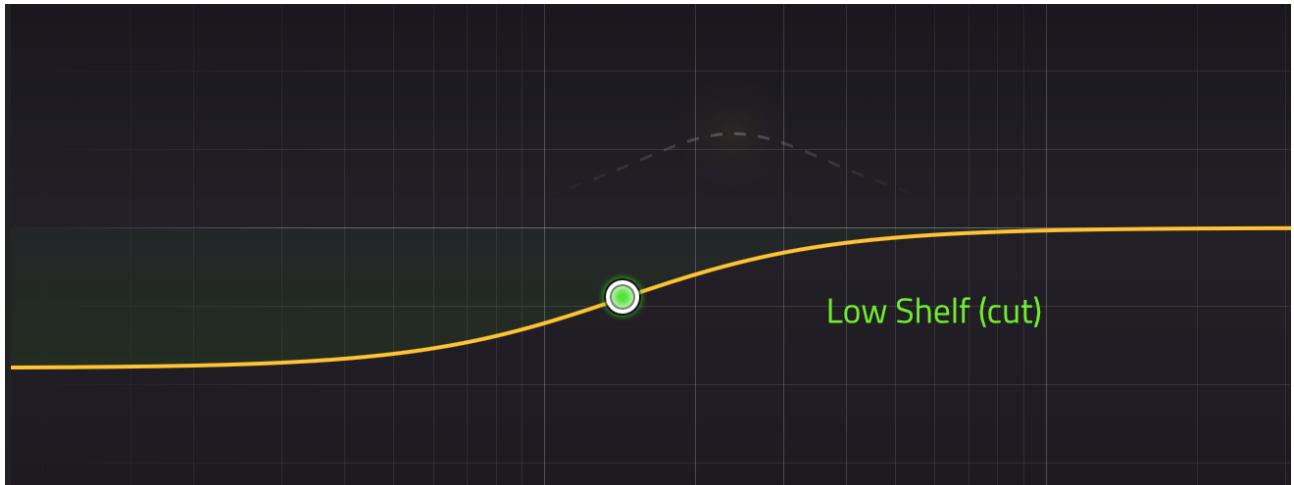
ADJUSTING EQ

Turn on the **EQ** button to activate the EQ section of AIR Channel Strip and select the **EQ** tab:



An **equaliser** provides us with a way of controlling the gain of specific frequencies in our drum track using a set of eq 'filters'. The EQ in AIR Channel Strip is designed to be fairly transparent, meaning it doesn't really 'colour' the sound in any way.

At the bottom you'll see a **LOW SHELF** control. This is a 'shelf' filter and is designed to boost or cut the frequencies on and below a specified frequency band.



The band is set using the **FREQ** dial. Let's give a general boost to the low end of drum kit, mainly for the kick – I'll normally start with a **FREQ** of around **90Hz**, increase the **GAIN** to **+8dB** so I can clearly hear what aspect of the low end I am boosting; I then adjust the frequency until I find the frequency I want to enhance and then drop the **GAIN** to a more usable level.

A shelving filter is not a 'surgical' EQ, it's designed for adding a more natural, broad boost or cut (which makes it perfect for a channel strip EQ). The aim with the boost is to just lift the bottom end without making things too muddy. I settled on a **2.9dB** boost at **85.7Hz**.

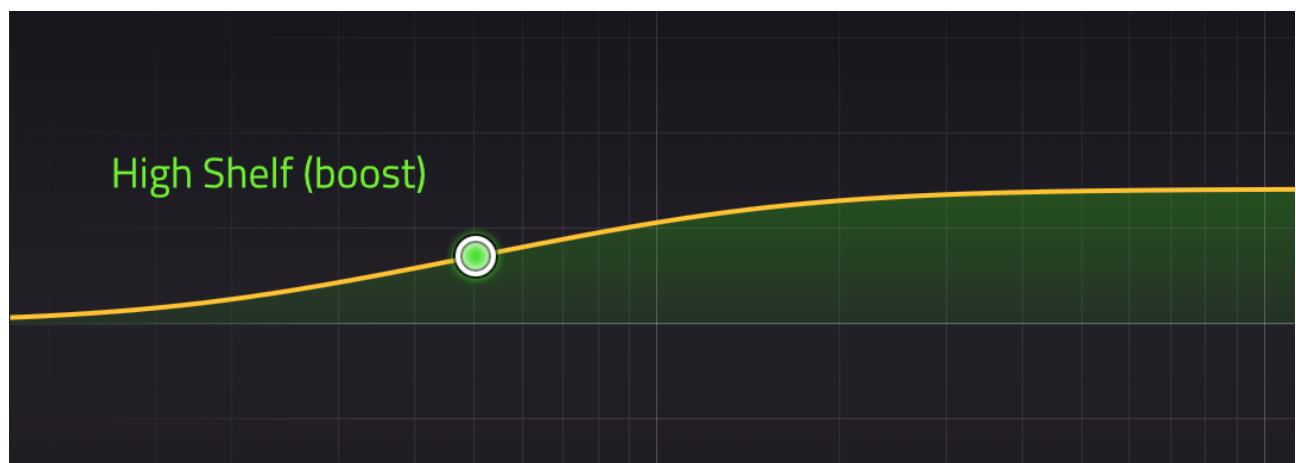
WHAT IS THE HP FILTER?

On the same row as the low shelf you'll also see the HP FILTER. This is a high pass filter which will completely cut any frequencies below a specified band. Generally speaking we would normally use the high pass filter to remove any very low frequency rumble that may have

been present on the original recordings, such as mic rumble. This is often stuff that is generally inaudible to most people's hearing but can quickly clutter up the headroom in a mix.

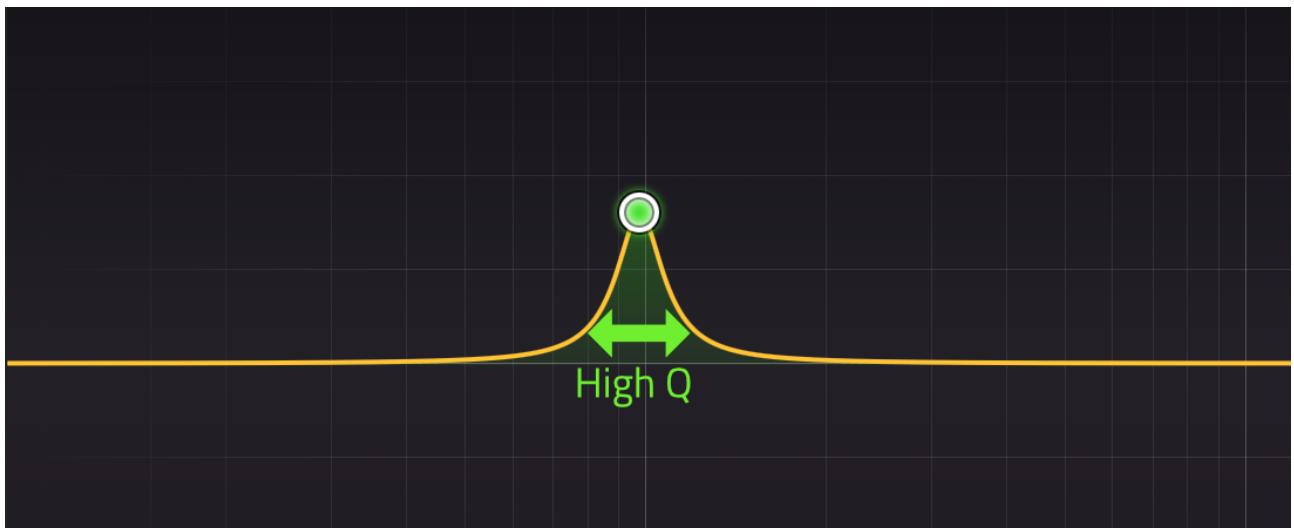
Personally I don't recommend using high pass filtering across an entire drum track, especially one made from samples. Instead I would more commonly use it on an individual instrument track from a live drum kit recording where I can tailor the frequency to suit each individual instrument.

At the top you'll see the **HIGH SHELF**. This is the opposite of the low shelf and as you might have guessed, can be used to boost or cut everyone above a certain (high) frequency.

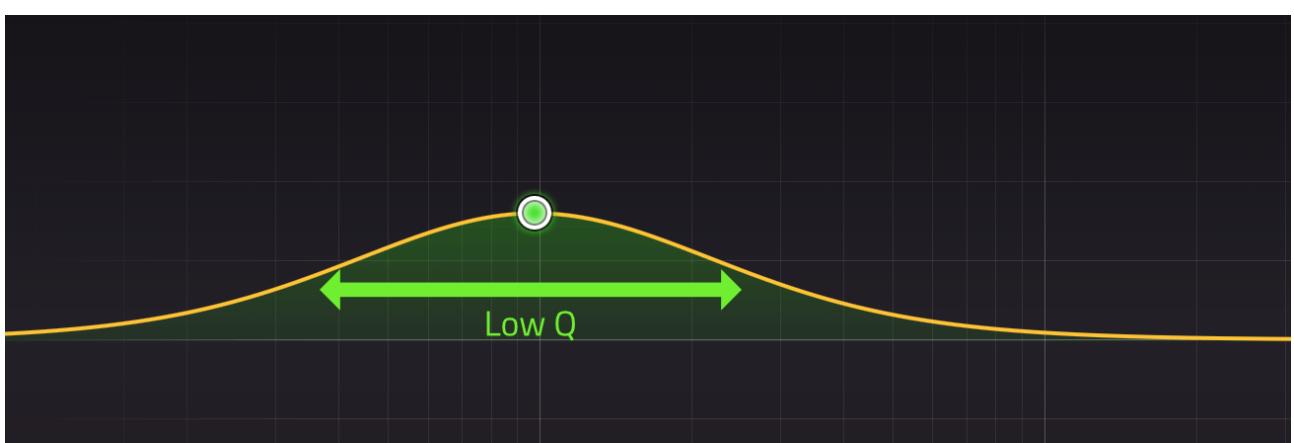


The drums as a whole sound too bright for me, so let's use the **HIGH SHELF** to make the kit sound darker. Try a **FREQ** of **8.90kHz** and a **GAIN** reduction of **-4.6dB**.

Finally we have the MID frequency control. This is not a shelf filter but a **Bell EQ**. Like a shelf, a bell EQ increases or decreases the gain at the selected frequency, but it then returns the gain back to the un-boosted value either side of the desired frequency point:



The width of the bell is controlled by the **Q dial**. A **high Q** gives a narrow bell shape and lets us make very precise and 'surgical' cuts or boosts to very specific frequencies, while a **low Q** value gives a much more broader, wider reaching boost or cut:



We could use a narrow Q to remove a nasty snare 'ring' or a nasal tone from a crash, however I would normally recommend applying these types of surgical eq operations on the individual sounds themselves (e.g. using an EQ plugin on the snare pad itself) and not when trying to apply a more broader, natural sounding channel EQ.

Instead use a channel strip EQ to target a general mid range characteristic of the kit as a whole. I set a **Q** of **1.62**, an initial **GAIN** of **8dB** and swept the **FREQ** until I found an interesting frequency to work on. I ended with a slight boost at **1.39kHz** which brought out the crunchy mids of the kit. Here's my final EQ settings:

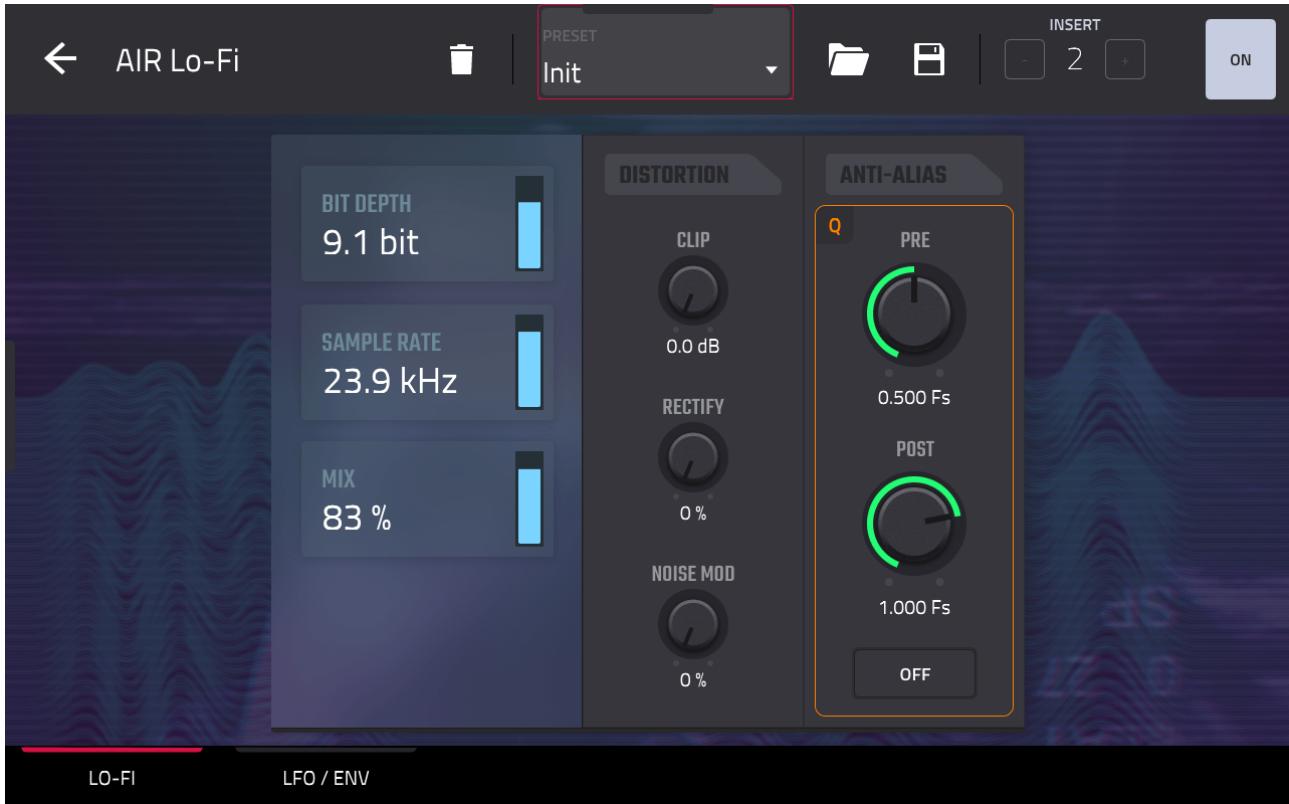


ADDING COLOUR TO THE DRUMS

There's plenty of ways to add some additional character and 'flavour' to the drums, pretty much all the FX plugins in the '**Harmonic**' section will impart new characteristics to our break. Let's look at two of my favourites.

Back in the **CHANNEL MIXER > EFFECTS**, hit the **[+]** button and add the **Harmonic > AIR Lofi** plugin.

AIR Lofi can be used aggressively to completely destroy a sound or subtly to add touches of grit and crunch. I often just use the three parameters in column one; there's no hard and fast rule here, but generally speaking I initially leave the **MIX** to **100%**, reduce the **BIT DEPTH** and **SAMPLE RATE** and then reduce the **MIX** a little to add back some of the original unaffected signal, just to help blend in the gritty version. Try the following:



On a drum break you can normally take the bit depth down to around 8 bit before things start sounding too destroyed. Reducing the sample rate has differing results depending on the instrument its being applied to, with hi hats and cymbals being really sensitive while kicks can take very low sample rates. So when applying to a complete kit, take it easy, we just want to knock off some of that modern sounding brightness.

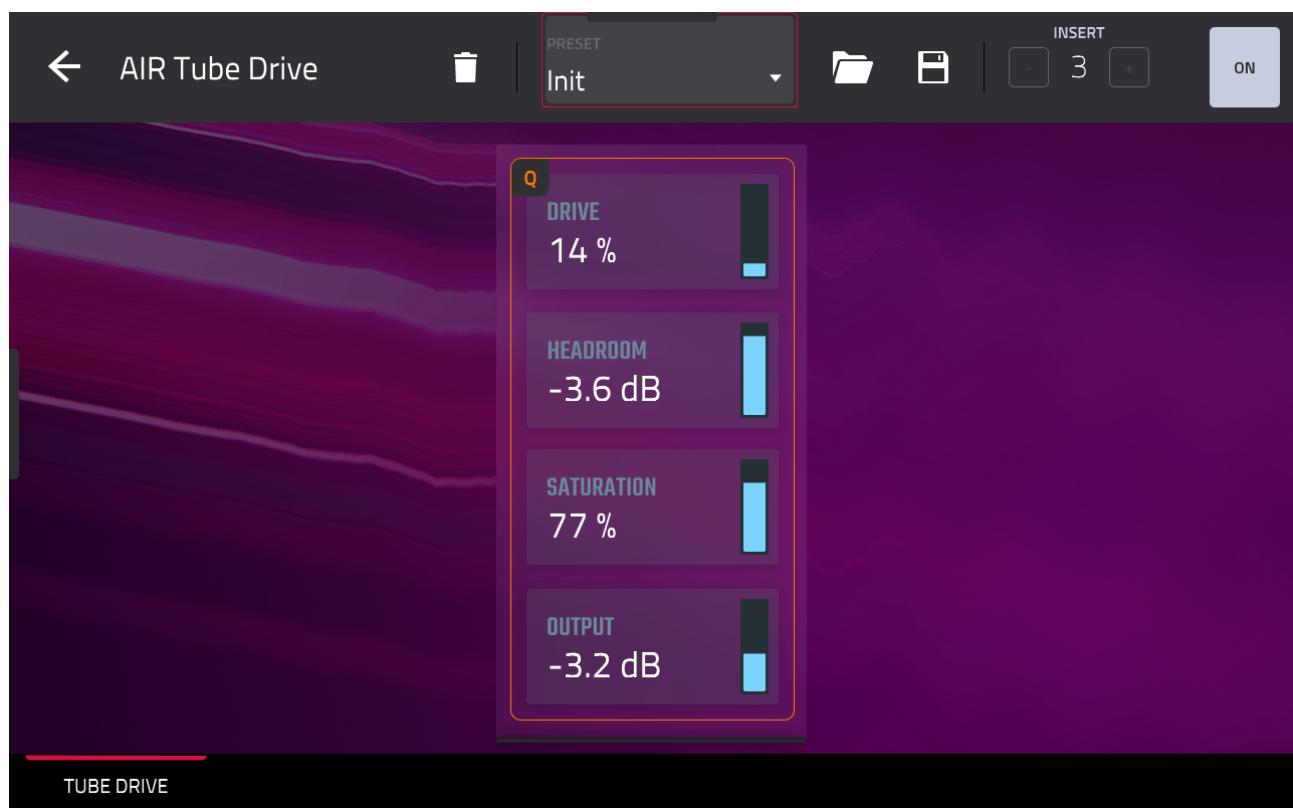
Back in the **CHANNEL MIXER**, hit the **[+]** button and add an instance of **AIR Tube Drive**. This is a great little plugin for adding saturation and distortion to a signal which when used subtly can impart lots of warmth and unique colour.

The **DRIVE** controls how far we 'drive' the signal through the virtual tubes, while the **HEADROOM** setting is similar to the threshold setting in a

compressor and controls the point at which the plugin will begin working on the input signal. **SATURATION** controls the level of tube saturation that will occur at this point; saturation is a type of distortion that adds harmonics and compression to the signal.

As with many of these types of harmonic plugins, the key is to experiment with each setting, continually tweaking until you find a nice balance. Then typically, back off the settings a little to ensure the overall effect is subtle and not overtly 'in your face' (unless you really want that type of sound of course!).

Try the following:

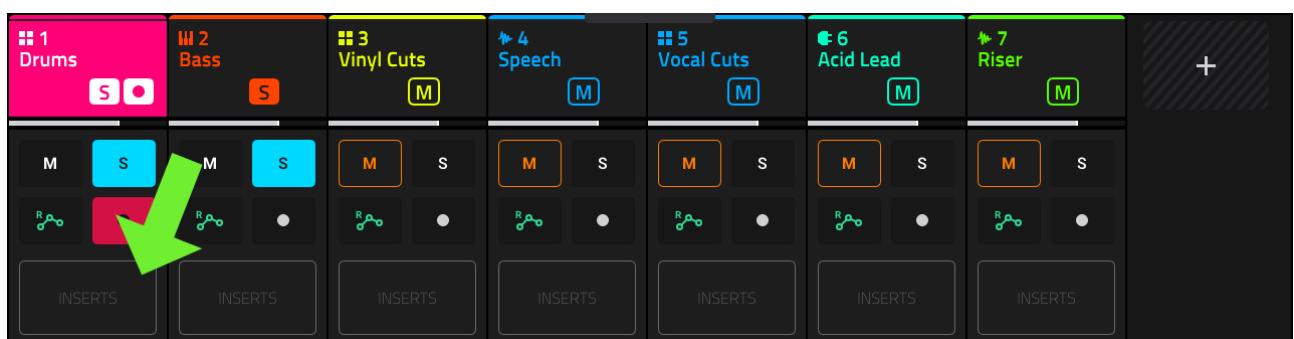


You should hear that the saturation is providing a nice warm compression on the snare transients – if you increase the SATURATION setting you should hear the transients get completely lost and the snares lose impact, so always back off to a point where you get just some gentle clipping.

Reducing the headroom too far creates an unnatural, overly compressed sound, while adding too much DRIVE creates a very aggressive sound that takes the plugin into 'guitar stomp box' territory.

Finally remember to compensate for any volume increases by reducing the **OUTPUT**. Use your ears combined with the **BYPASS** button (top right of the FX settings page) to listen to the subtle changes.

Now back in the XL CHANNEL STRIPS, tap on the **INSERTS** button.



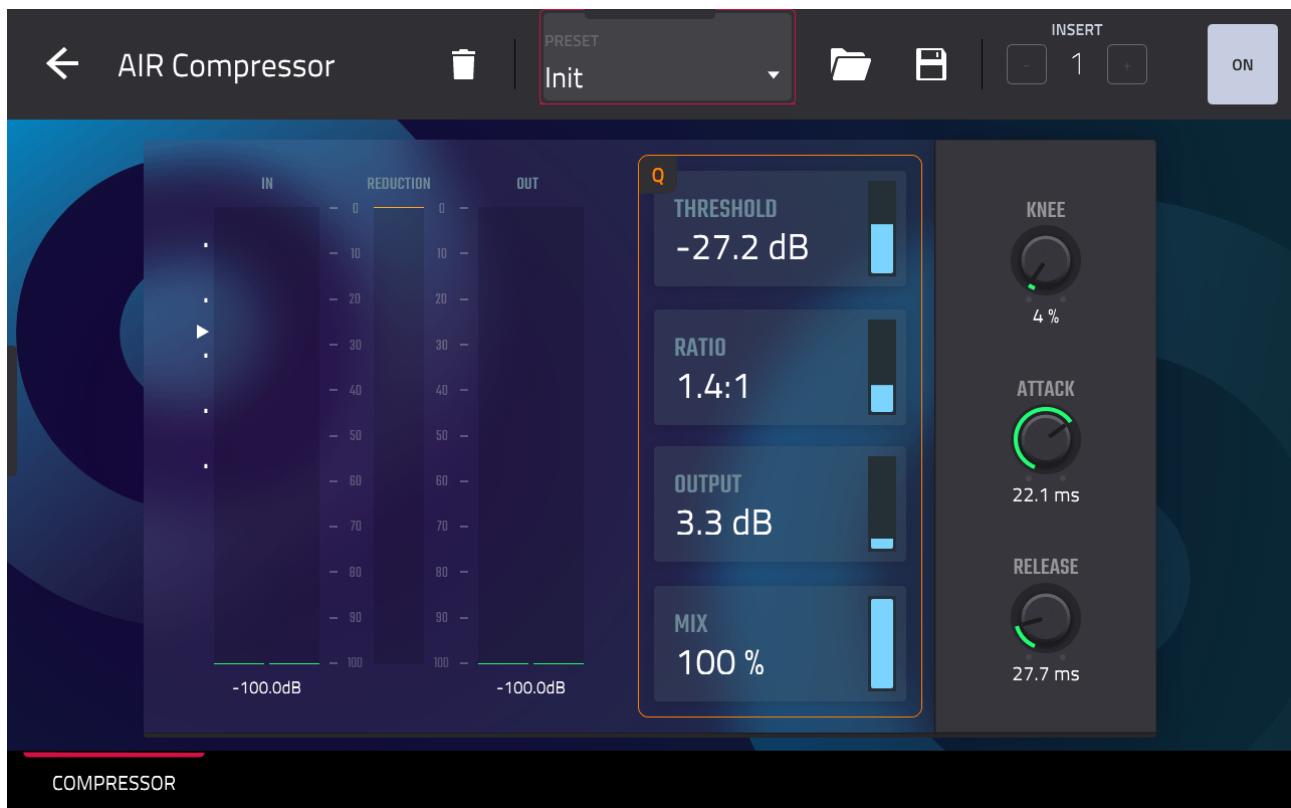
From here, use the **ALL ON** button to A/B the drums with and without all the FX combined. Hopefully you can hear that with the FX chain added the drums have more warmth and presence and just sound more of a 'cohesive' drum kit.

Finally, don't forget you can save your favourite insert FX chains as an **FX Rack** via the disc icon.

MIXING THE BASS

Let's move onto the bass which together with the drums provides the fundamental groove of the beat and as such must work together. Disable SOLO on the Drums track and instead **Solo** the **Bass** track (2).

This time let's use the **AIR Compressor** to tighten up the bass, which I find works really well for bass and also gives us some additional options compared to the Channel Strip compressor. Hit the **[+]** button in **INSERT SLOT 1** and add the **Dynamics > AIR Compressor** and configure the settings as follows:

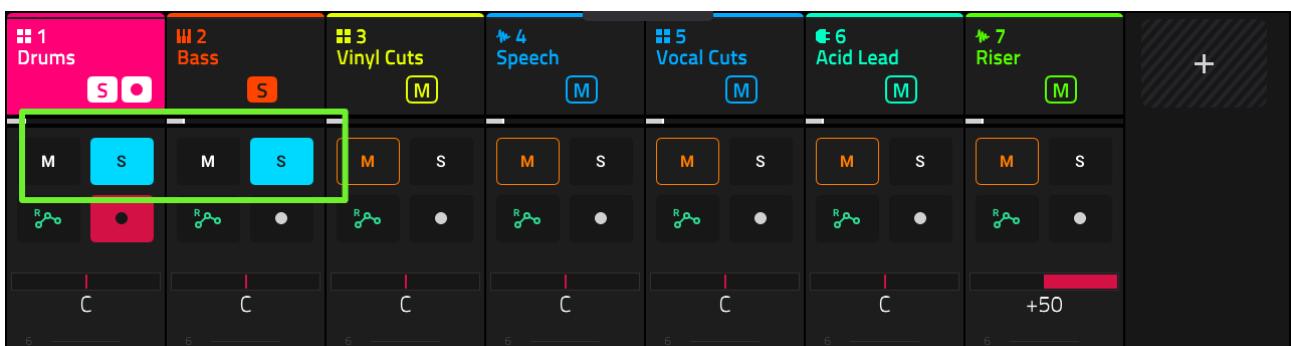


So my aim here is to try to create a little more 'snap' to the initial bass transient, so we'll set a fairly slow attack but combine this with a short release so the compressor stops acting soon after the initial transient stage. A **THRESHOLD** of **27.2 dB** combined with a **RATIO** of **1:4:1** adds a moderate amount of compression without sounding too aggressive.

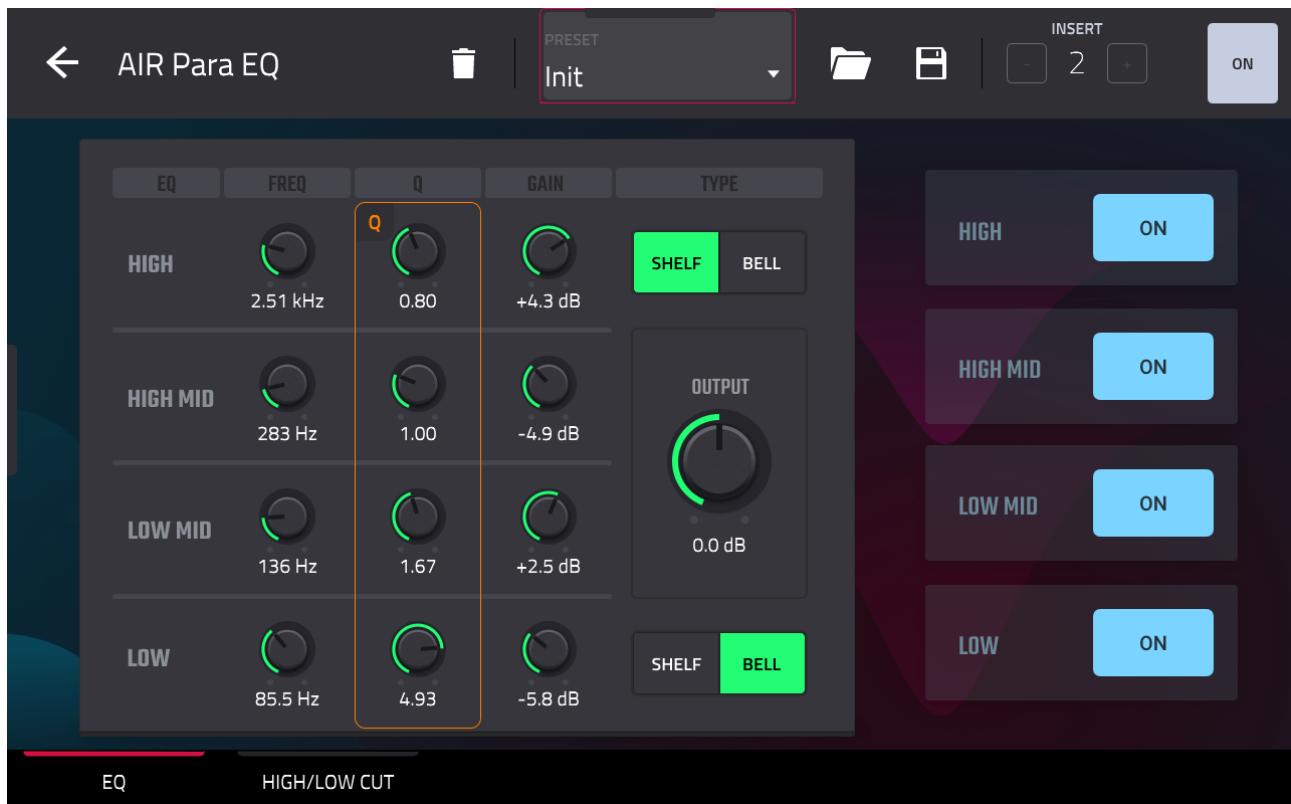
An interesting setting here is the **KNEE**. This controls the transition between compressed and uncompressed. The higher the value, the more gradual the change (referred to as 'soft knee'), while lower settings provide a more immediate change which is referred to as a 'hard knee'. I set this to quite a hard knee to help exaggerate that initial snap.

Use the **ON** bypass switch to hear the difference; suddenly that original, unaffected bass track sounds a bit soft.

Next, let's do some work with the EQ, but now I want to bring the drums back in so we can hear how they are working together. Back in **CHANNEL MIXER > EFFECTS**, hold down **[SHIFT]** and tap on the '**S**' on the Drums track header - this will solo both the Drums and Bass tracks together:



Now hit the **[+]** button on **INSERT SLOT 2** for the Bass track and add the **EQ/Filter > AIR Para EQ** plugin and single tap it to open the settings.



Here I've adjusted all four EQ bands. The **HIGH** has been boosted at around **2.51 kHz** to help some of the attack transient cut through. I could hear the bass was adding a fair bit of muddiness in the mid range so I added a cut of **-4.9dB** around **283Hz**. I gave it a bit more boost at **136Hz** which is where the 'fundamental' of the bass sits (this is the thickest sounding meat of the bass).

Finally, remember we boosted our kick at **85Hz**? I added a narrow bell 'notch' here on the bass to reduce any low end clashes between the kick and bass. Remember a higher 'Q' means a narrower bell shape, so we are only targeting a small tight frequency.

Now temporarily head over to **PAN & VOLUME** and reduce the level of the bass to help it sit nicely with our drums:



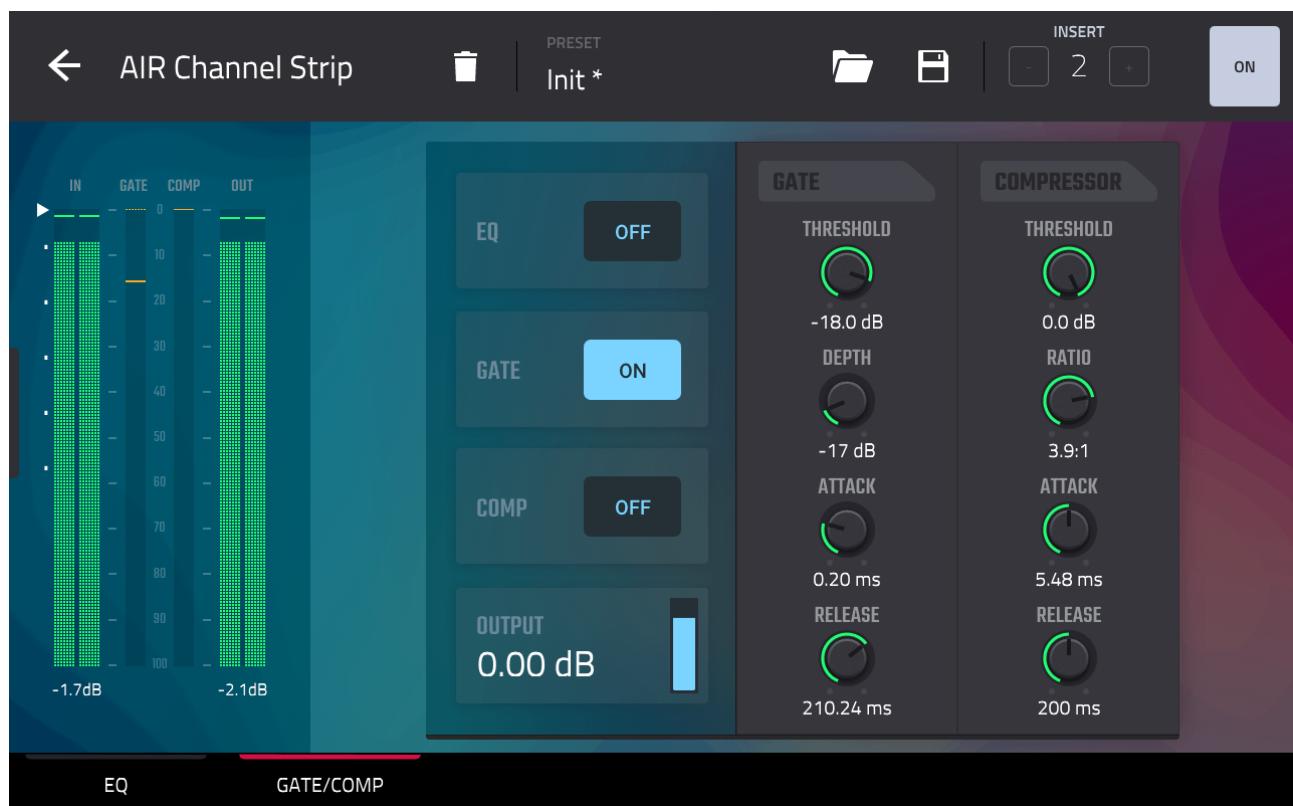
Remember you can add a shortcut to the CHANNEL MIXER To the side pull out panel by going to [MENU] and dragging the CHANNEL MIXER icon to the left hand side of the screen.

Alternatively, hold down [MENU] and hit the pad that relates to the position of the CHANNEL MIXER icon in the menu screen (this will vary for each person depending on how you've already potentially swapped icons around)

ADDING A NOISE GATE TO THE VOCALS

Now 'solo' only the Speech track so we can focus on the main vocal. I just want to clean this up a little as there's a lot of hiss in-between each vocal portion and the levels of the speech are all over the place.

INSERT 1 already hosts the AIR Stutter effect that we automated for this track, so tap and hold on the second [+] button to add an instance the **AIR Channel Strip**:



Previously we used the EQ and the compressor on our drums, this time I also want to use the **Noise Gate**.

Select **GATE/COMP**. A noise gate is a little like a compressor as it can be configured to automatically reduce the volume of an audio signal, but instead of reducing signals that exceed a threshold, it reduces the volume of any signal that is *under* the specified threshold, typically targeting the reduction or removal of background noise.

In the plugin, the **THRESHOLD** determines the level under which the noise gate will begin reducing the volume of the signal. Set this to **-18.0dB**; this means any signal lower than -18.0dB is going to be targeted by the noise gate.

The **DEPTH** determines how much reduction will occur, a setting of 0dB will mean no reduction at all. Set this to around **-17dB**.

Attack and release work similarly to a compressor. **ATTACK** determines how quickly the noise gate acts on the signal; we want to retain transients and not cut out any actual vocal sounds, so set this quite long, around 11ms. Too long and things will start sounding unnatural as you'll hear the vocal fade in and out.

We want the reduction in noise level to be as subtle as possible, so setting a suitable RELEASE will ensure the noise gate 'fades' in the changes in volume. Try a **RELEASE** of around **200ms**.

Hit [**PLAY START**] to hear how the noise gate acts on the vocal. Try tweaking **THRESHOLD**, for example set it to -8dB and you'll hear much of the vocal keeps dipping in and out, it's set too high and is catching actual vocal rather than just noise, so the key to this setting is to position the THRESHOLD just above the noise but below the vocal levels.

It is of course never going to be perfect, there has to be a compromise, normally it's to leave some noise rather than remove the actual vocal.

Playing with the ATTACK, you'll hear that once it gets too high the vocal fades in at the start of each vocal block. Too short and it can chop off some of the vocal entirely. Try an **ATTACK** of around **20ms**.

Try setting the **RELEASE** to **1ms** – the hiss cuts out incredibly abruptly. A setting of around **210ms** gives a more subtle, but brief fade out.

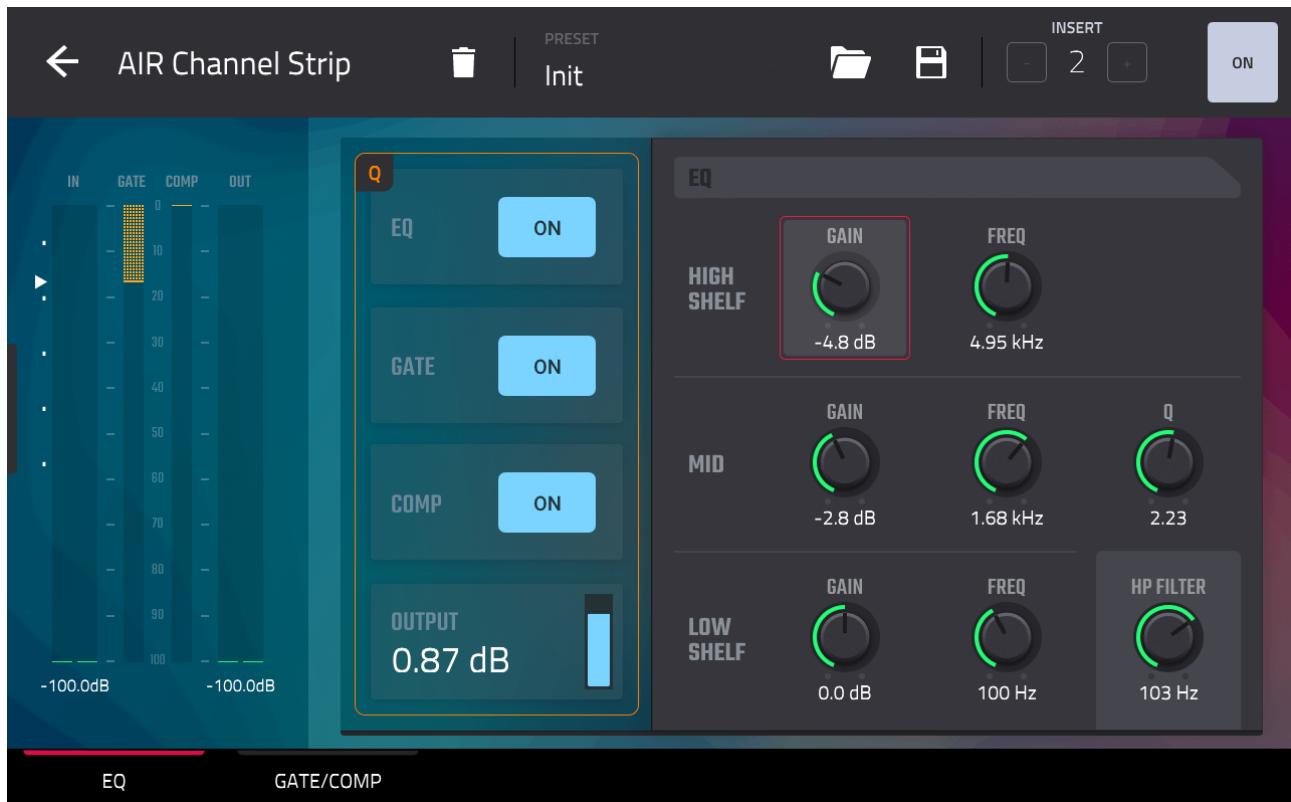
Is this a perfect 'noise reduction' plugin? No, there's no AI or spectral analysis going on here, it's no Izotope RX, but a noise gate is a good automated way of removing excessive hiss in-between vocal passages (where it sounds most obvious). The rest of the hiss will generally be masked by all the other stuff going on in your mix.

VOCAL EQ

Hit the **EQ** tab in **AIR Channel Strip**. First let's remove that rumble that runs throughout the vocal – if it helps, temporarily turn off the GATE so you can hear the noise at all times. Set the **HP FILTER** to around **100Hz** to remove all frequencies below this point. This will also free up a whole bunch of headroom in the overall mix.

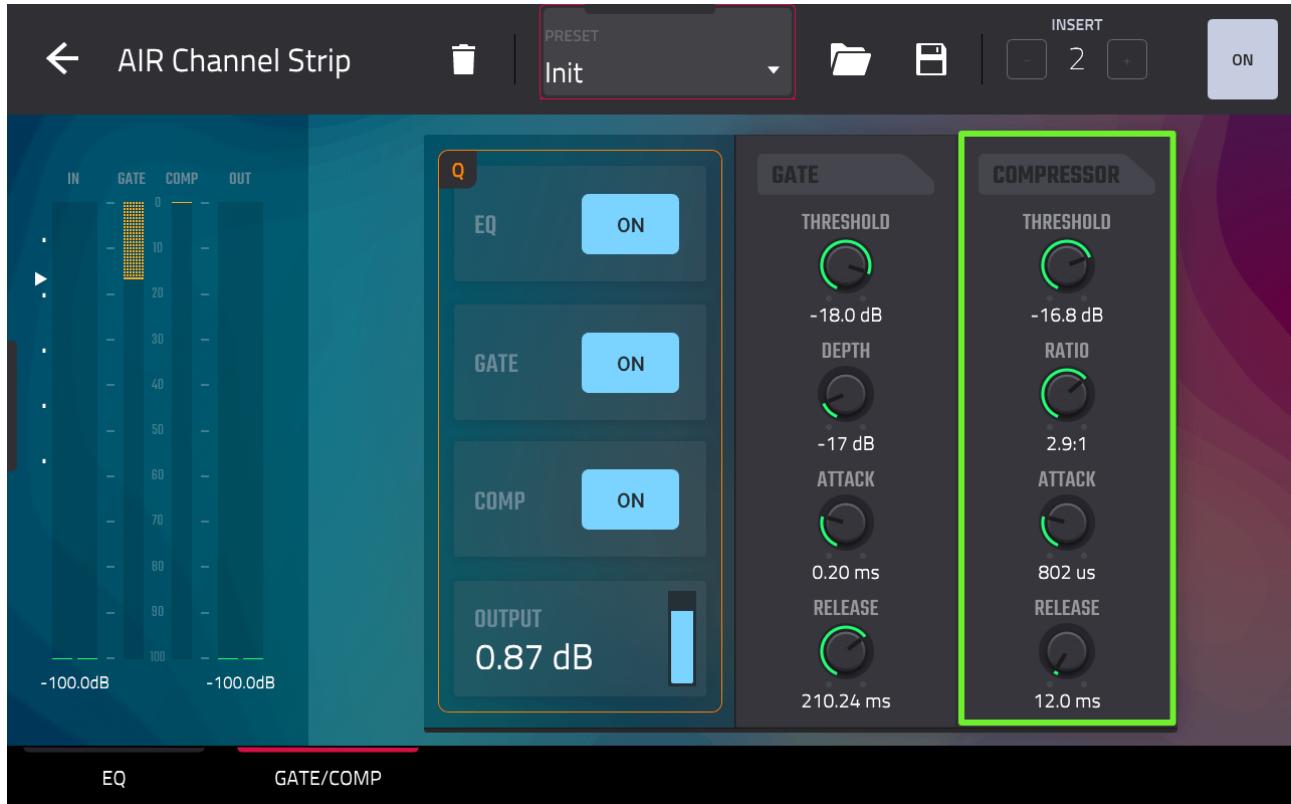
Now set the **MID GAIN** to **+12dB** with a **Q** of around **2.23** and begin sweeping through the **mid FREQ** dial until you find a spot where the vocal harshness suddenness becomes excessively exaggerated – around **1.68kHz**. Now reduce the **GAIN** to take the edge of the harshness without overly impacting the general character of the vocal. Try a **GAIN** of **-2.8dB**.

Finally, use the EQ to help tame the noise that remains 'behind' the vocal parts; cut the **HIGH SHELF** by **-4.8dB** at around **4.95kHz**.



VOCAL COMPRESSION

Let's use a little compression to gently smooth the vocal peaks and give it a little more directness. Select the **GATE/COMP** tab and configure the compressor as follows:



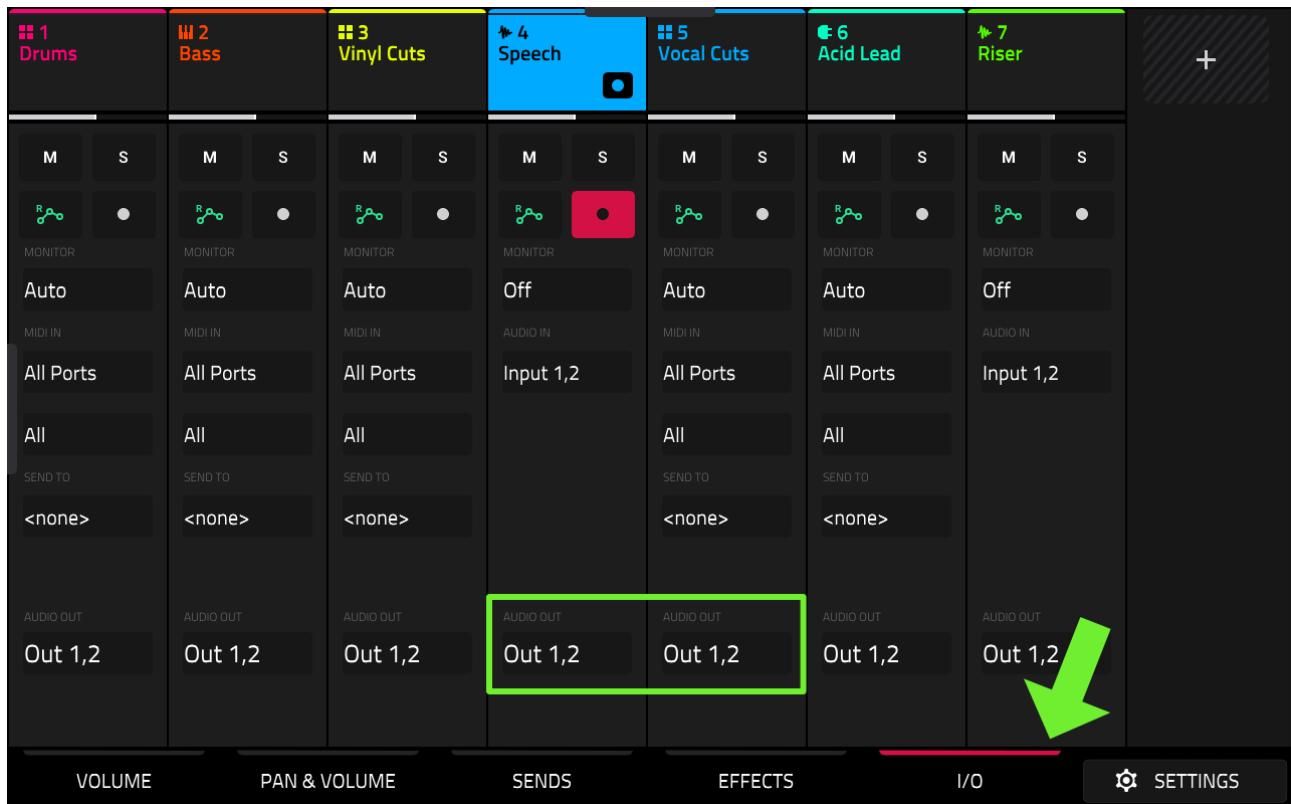
This time we're setting a fast attack to ensure we continually capture all the vocal peaks, along with a fast release to allow the vocal to breathe. A fairly high compression ratio combined with a mild threshold ensure the compression remains transparent.

CREATING A VOCAL SUBMIX

Now, strictly speaking our 'vocal' actually comprises of two separate tracks; the '**Speech**' audio track and the '**Vocal Cuts**' drum track.

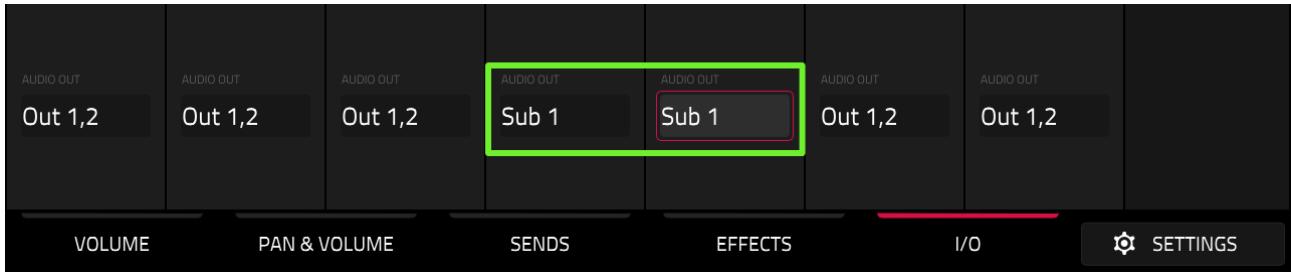
Now we could continue mixing these two tracks separately, but now that we've performed some fairly surgical processing on the main vocal, a sensible option would be to group these two vocal tracks together and

apply any additional mixing to the resulting 'group'. In the MPC, we achieve this using '**SUBGROUPS**'. Select the **I/O** section:

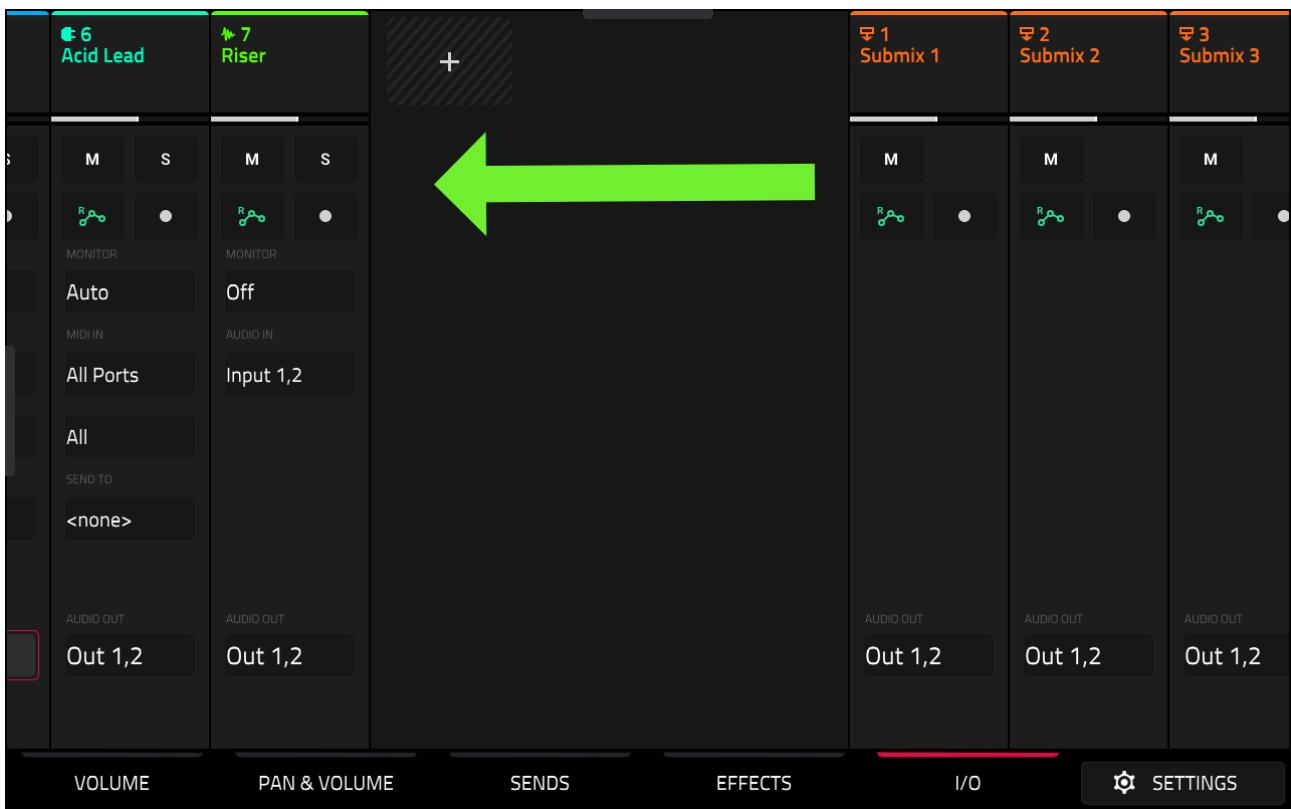


At the bottom of each channel strip you'll see the **AUDIO OUT** parameter. By default all channels are routed directly to the main audio outputs of your MPC; **Out 1,2**. This refers to the physical outputs '1' and '2' on the back of your MPC unit, which on many MPC models are actually labelled as the **MAIN OUTPUTS 'L & R'**.

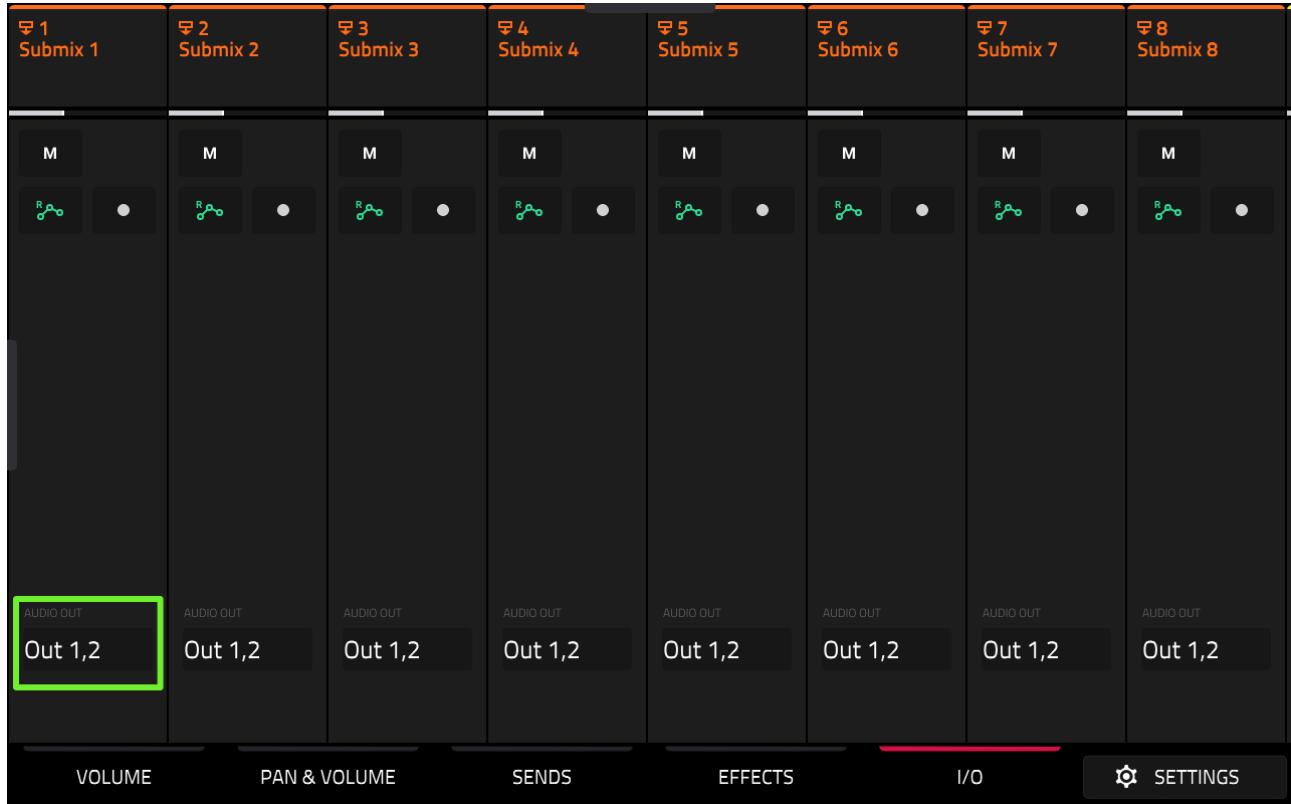
Tap to select this parameter on the '**Speech**' track and turn your (DATA WHEEL) anti-clockwise and you'll see that you can route this track through any one of 8 'Subs' (subgroups). Set the output for the '**Speech**' track to **Sub 1**. Now repeat this for the **Vocal Cuts** track:



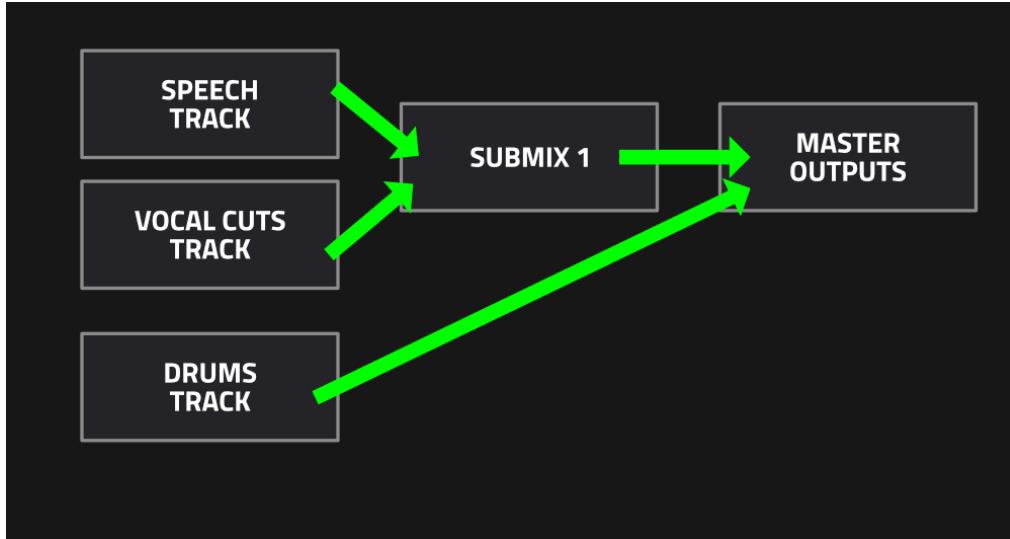
This means that both these tracks are now first being routed to the same subgroup (subgroup 1) – hit [**PLAY START**] and you'll not hear any change to our song. Why is this? Well, first, let's take a look at the I/O page for our subgroups. To access these, tap and drag your finger from the far right side of the screen to move to the next set of tracks:



You should now see all 8 subgroup channels:

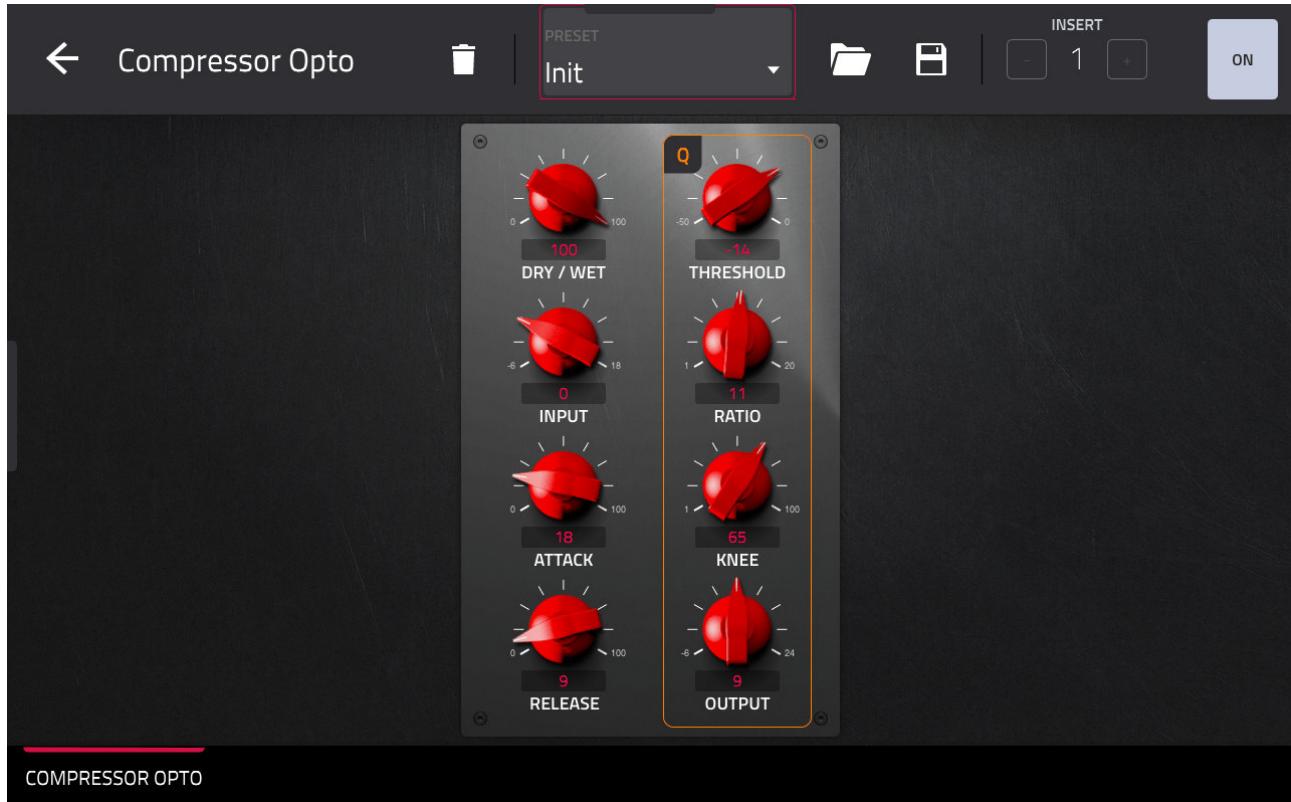


As you can see, each subgroup is set to **AUDIO OUT: Out 1,2**. So ultimately our vocal tracks are all still being sent out of outputs 1 & 2, however, the route they now take is as follows:



Now any changes we make to SUBMIX 1, such as volume, panning and FX changes, will affect both vocal tracks equally. Let's apply some 'character' compression to our submix, which in turn, will add compression to both our vocal tracks.

Tap on the **EFFECTS** button and this time you'll be given the FX channels for our 8 submixes. Tap on the first **[+]** button for **Submix 1** and add an instance of **Dynamics > Compressor Opto** and configure as follows:



A fairly quick attack and release help keep the two tracks glued and in check, with a fairly high ratio to give the vocals additional 'directness'.

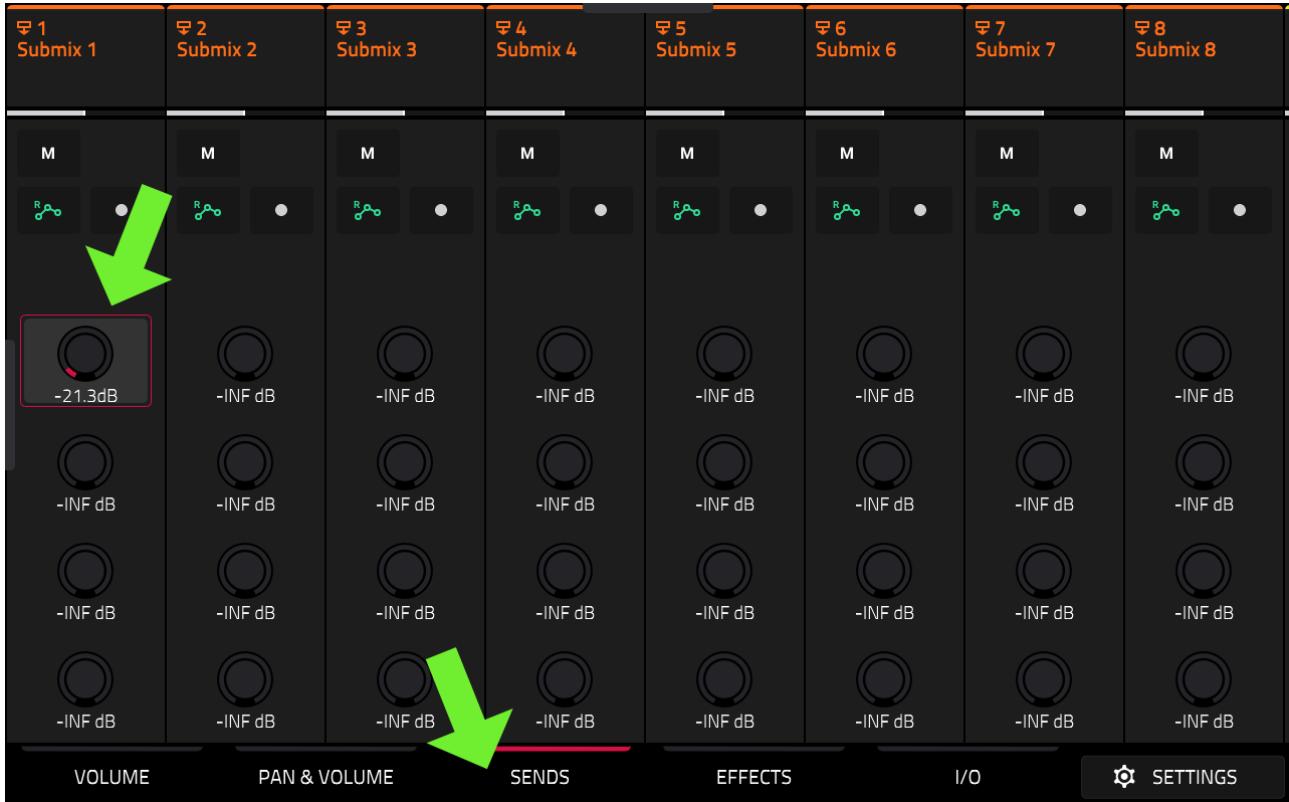
Head over to [**MAIN**] and make sure the **Speech** track is enabled:



You can see that the right hand strip is no longer the main 1/2 outputs, instead it has automatically changed to show the most relevant channel strip for our Speech track; **Submix 1**. Tap on the **track level** and adjust the volume, holding down **[SHIFT]** for more accurate changes.

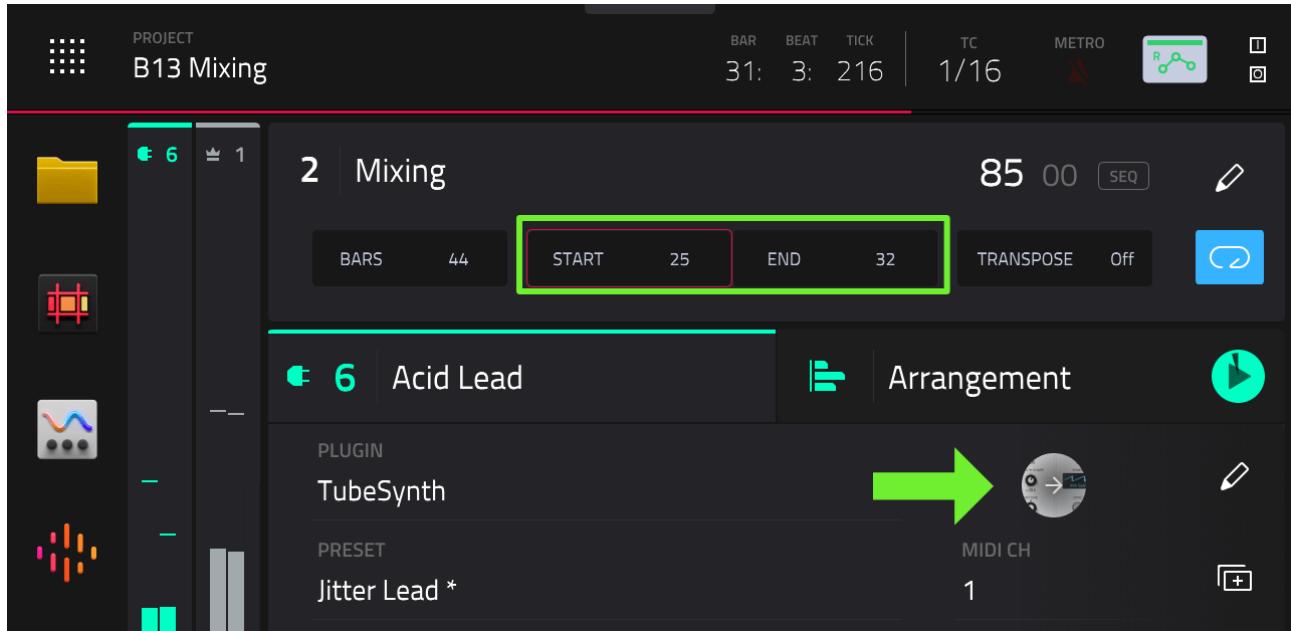
Changing the volume of submix 1 will change the volume of both vocal tracks simultaneously. However don't forget that you can still select each track individually to make any individual track changes that you may need.

Select the **SENDS** page. Remember we previously configured a reverb on SEND 1 which we used with the Riser track? Let's use this same send to add some subtle reverb to both vocal tracks. Set **SEND 1** for **Submix 1** to approximately **-21dB**:



MIXING THE LEAD

Go to [MAIN], select the **Acid Lead** track (6) and change the sequence **START** and **END** to **25** & **32** respectively to isolate the first 8 bars of the main part of the solo:



Tap on the **Tubesynth** logo to open the plugin settings and tap on the bottom right arrow button to reveal the second menu bar – select the **REV/COMP/HYPE** tab:



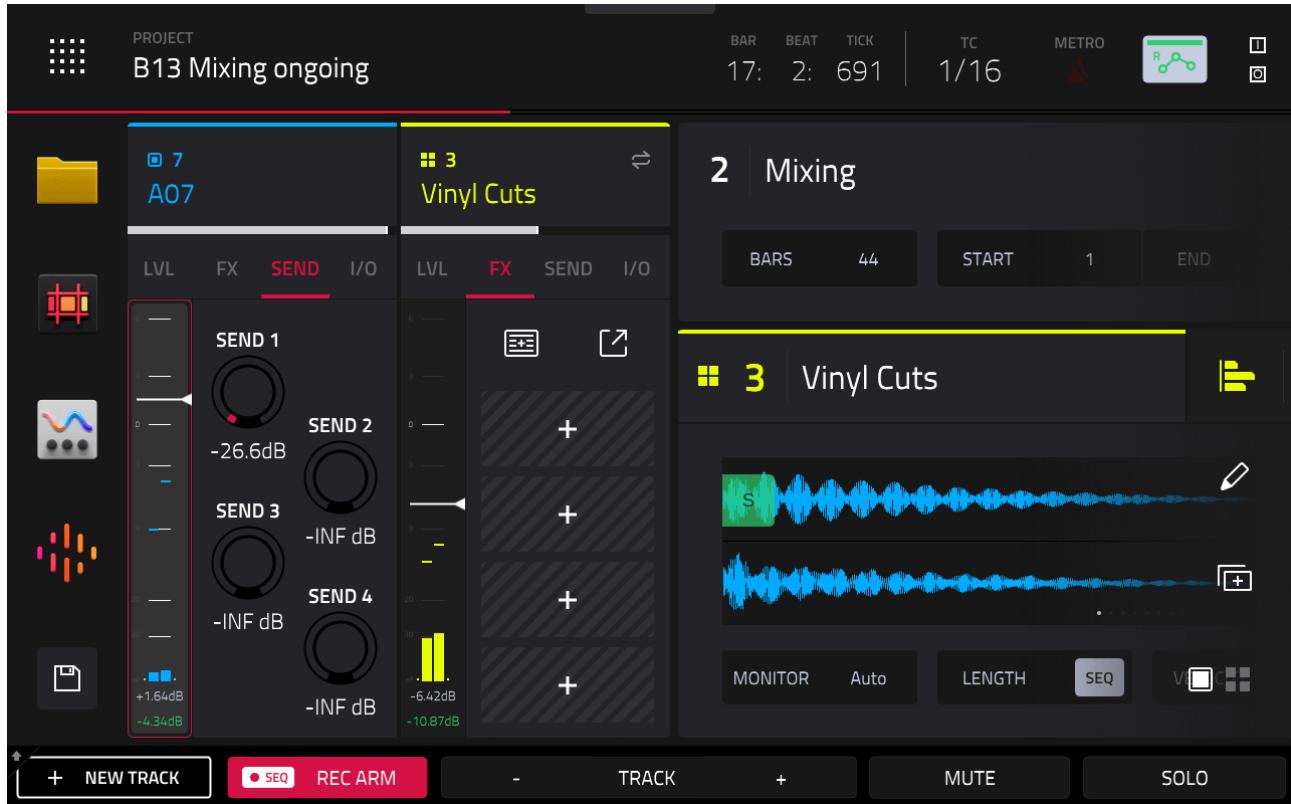
All I want to do here is disable the reverb that is added automatically to this preset. To do this, tap on the blue circle at the top right of the **REVERB** section so it turns grey.

Back in **[MAIN]**, open the **XL Channel Strips** and adjust **SEND 1** for the Acid Lead track to add some of the same reverb we've used on the other tracks. This will help give the mix a more cohesive sounding ambience. Try a **SEND 1** value of around **-20.6 dB**.

MIXING OPTIONS FOR THE 'MELODIC' DRUM TRACKS

Unlike most of our other tracks, the '**Vinyl Cuts**' track features many individual melodic samples, each potentially requiring some additional mixing work. As these are each, effectively, all isolated sound sources, adding track FX and carrying out entire track mixing is unlikely to be appropriate.

Instead we can just use the **PAD MIXER**; be it via the dedicated PAD MIXER screen or from the XL Channel Strips. In **MAIN**, tap on the 'pad' icon at the bottom right of the screen to change the left hand channel strip to a pad strip. Tap on pad **[A07]**:



Each pad strip allows us to change pad volume, panning, insert four FX to that pad and to add additional FX via the pad's own sends.

Select the **SEND** tab and add some reverb to this sound by increasing **SEND 1** to around **-26.6 dB**. Use the **LVL** tab to adjust the **PAN** to **-28** and adjust pad volume to taste. I'd suggest previewing in context, but set the sequence **START** to **1** so you can hear this sample in one of the more quiet sections.

Repeat for any other pads, tweaking the pan and volume levels, reverb, maybe even add some **SEND 2** delay as well. It's a process that you will inevitably have to continue tweaking across all tracks and pads until you are happy (or never completely happy...!).

AUTOMATING PAD VOLUME

During the bridge, I'd like to increase the volume of the **Walt UFO** sample on pad **[A02]** in the **Vinyl Cuts** track ('It's real'), just to make it more present and upfront.

We can simply do this at the pad level. First set the sequence to **START** at bar **16**; this is just before the 'It's Real' sample is launched in bar **17**. Hit the **automation write** button and with the **[A02]** pad strip selected in the XL Channel Strips, tap on the **LVL** meter to select it.

Hit **[PLAY START]** and just before the Walt UFO sample is triggered, use the **(DATA WHEEL)** to increase the **LVL** for pad **[A02]** up to around **-2.5dB**.

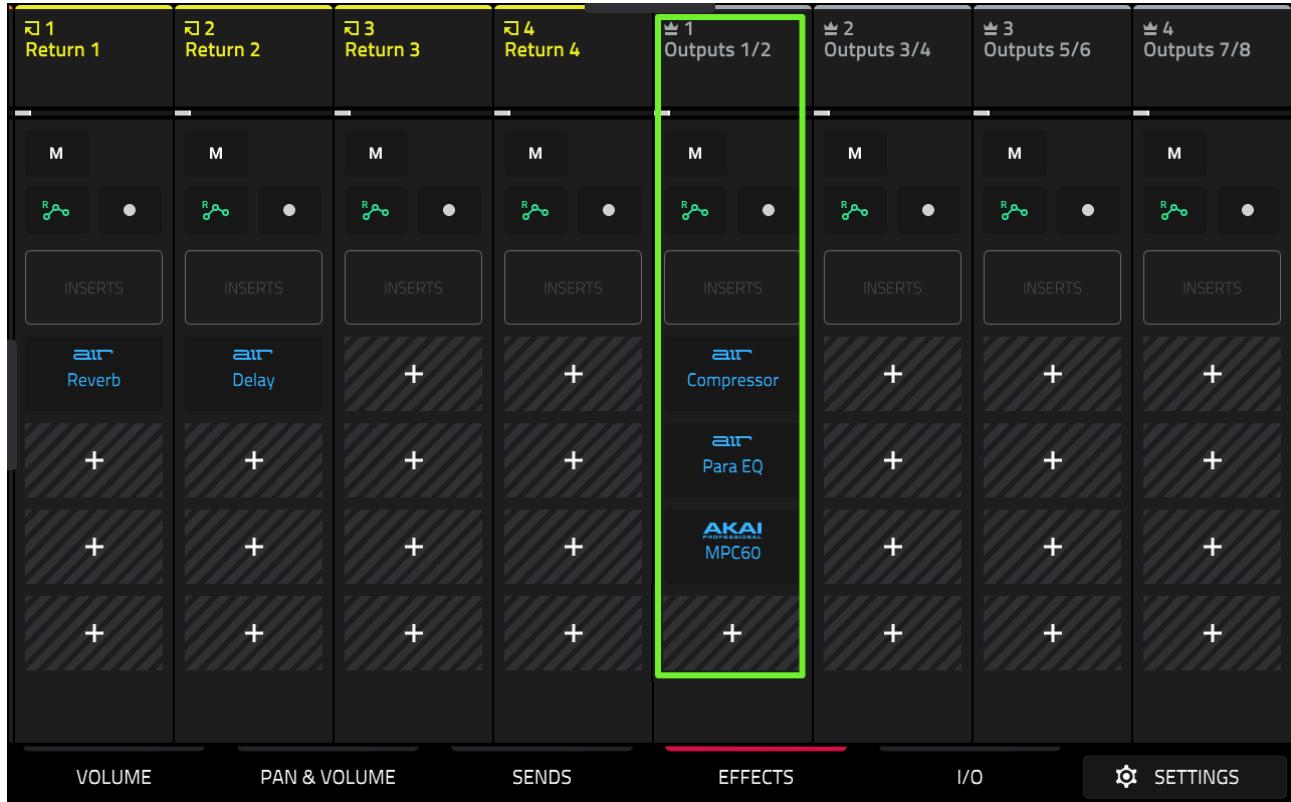
You can press **[STOP]** now if you wish as this will set the pad volume at **-0.78dB** for the remainder of the track – the MPC will automatically add an automation event to ensure the volume is set to the original LEVEL setting you used earlier throughout the track (which was -4.33 dB for me). You can view this by going to **LIST VIEW** (double tap the Arranger window to go to **GRID** and then select the **LIST VIEW** icon). Select Track Automation:

#	TIME	PAD/NOTE	LENGTH	VELOCITY	MOD TYPE	VALUE	PROB	RAT
1	001:01:000	■+	A02 (37)		Level	-4.33dB		
2	016:03:749	■+	A02 (37)		Level	-4.09dB		
3	016:03:891	■+	A02 (37)		Level	-3.61dB		
4	016:04:065	■+	A02 (37)		Level	-2.92dB		
5	016:04:199	■+	A02 (37)		Level	-2.47dB		
6	016:04:475	■+	A02 (37)		Level	-1.82dB		
7	016:04:819	■+	A02 (37)		Level	-1.19dB		
8	017:01:060	■+	A02 (37)		Level	-0.99dB		
9	017:02:596	■+	A02 (37)		Level	-0.78dB		
(end of events)								
EVENTS			TEMPO	INSERT	DELETE	▶	NUDGE	

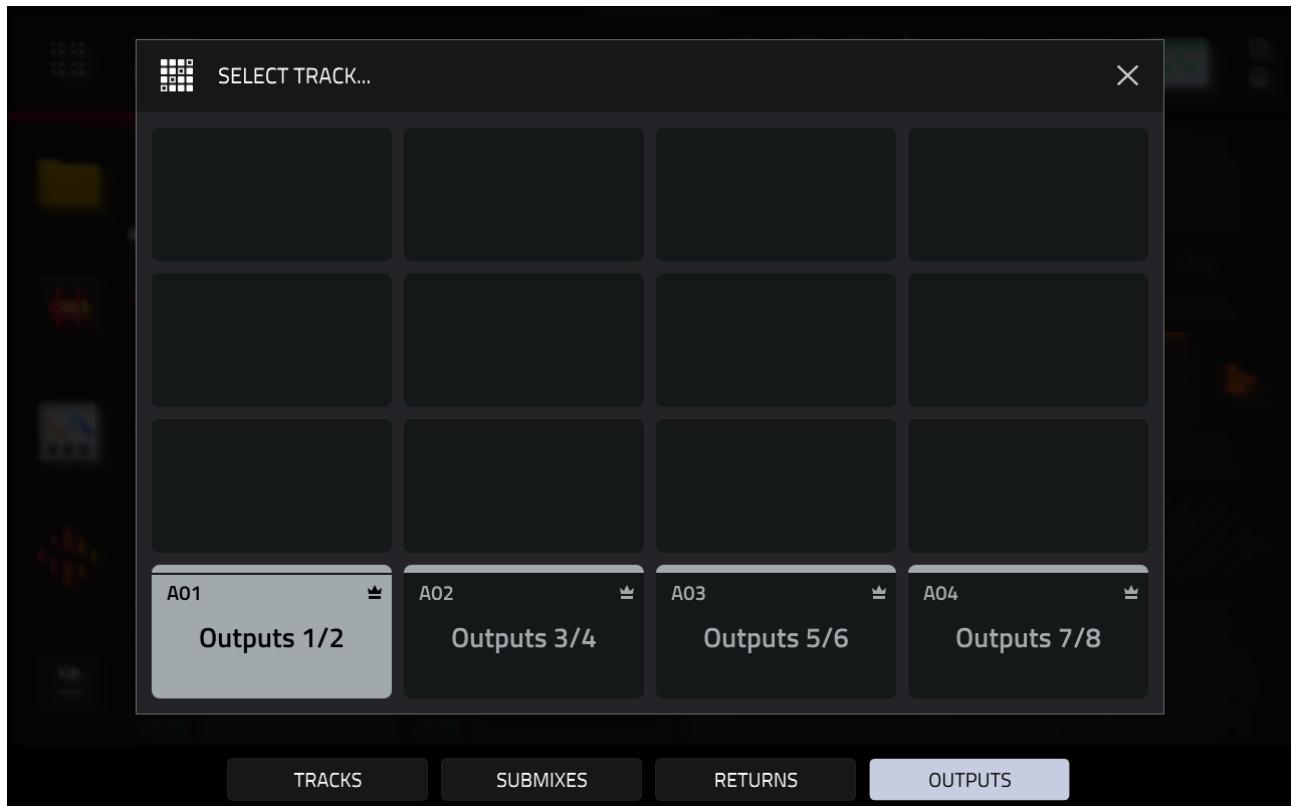
At this point I would suggest you set your sequence START and END back to the full length (1 to 44) and listen through with the CHANNEL MIXER open, tweaking and adjusting FX, panning and levels across all channels as you see fit. Switch to the PAD MIXER or XL CHANNEL STRIPS if need be.

ADDING MIX BUSS FX

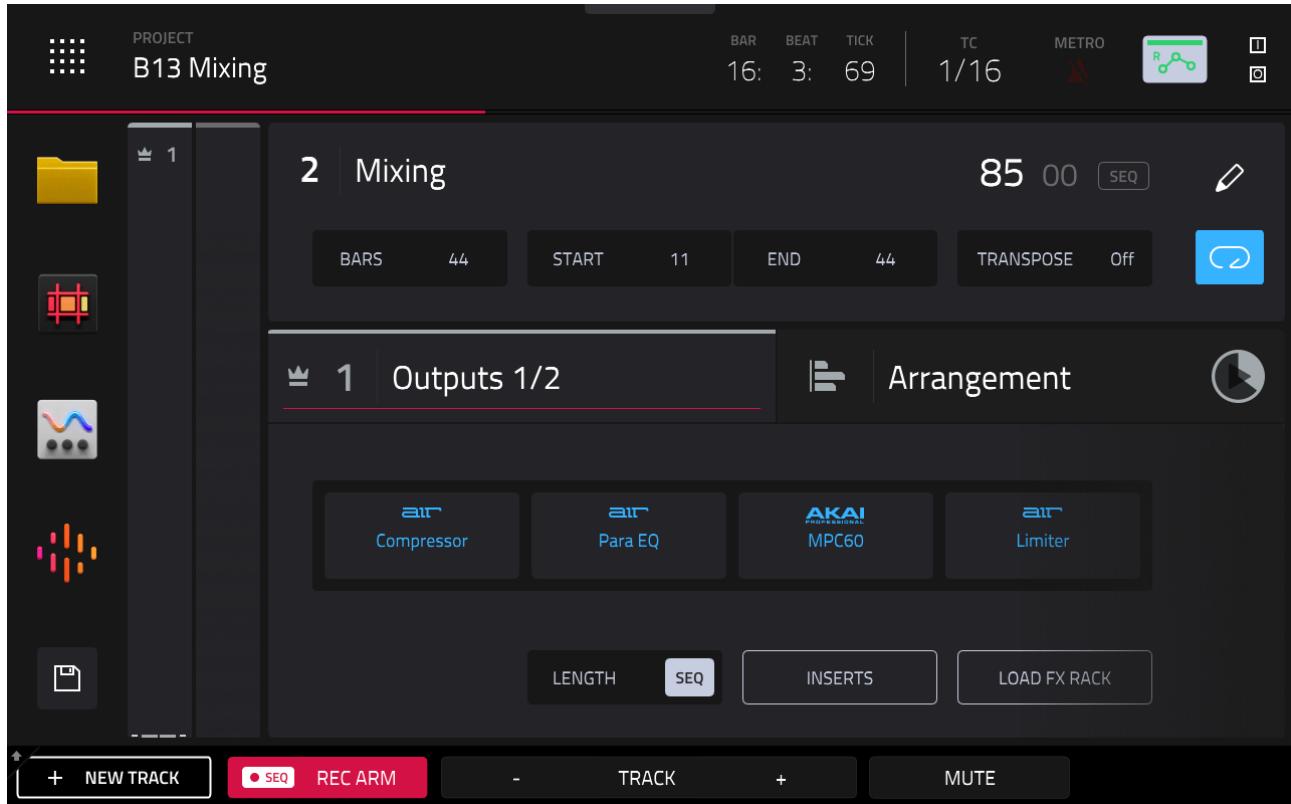
You can also apply FX across the main outputs of your song (Outputs 1,2), which is often referred to as the **Mix Buss** – plugins inserted across your mix buss will affect your entire mix and can be useful for adding some some light 'glue' compression or some subtle EQ fixes. It can also be used to add further character to your song. The main output channel strip can be accessed from the **CHANNEL MIXER** by dragging the screen to the left:



Alternatively you can access it from MAIN. Hold down the [**MAIN**] button and select OUTPUTS and hit pad [**A01**] to select **Outputs 1,2**:



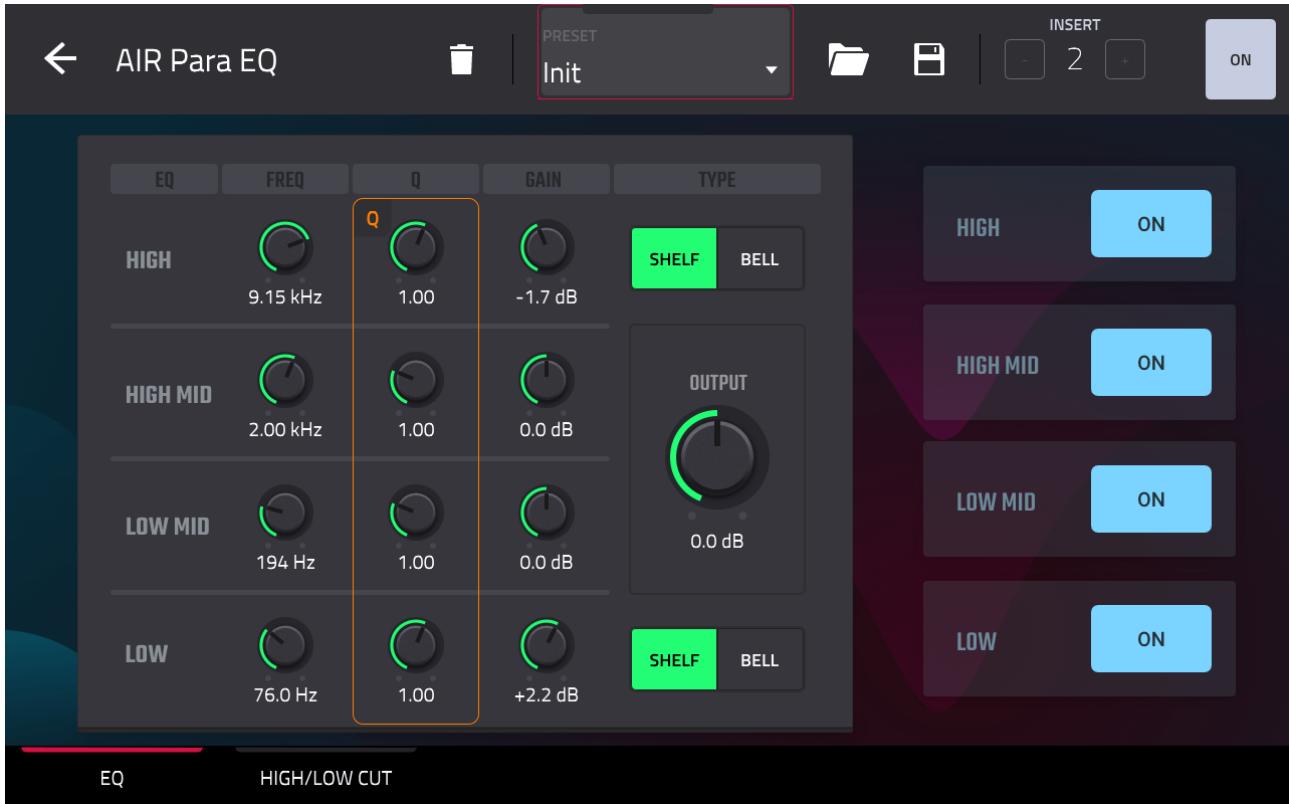
Here's what the output track looks like in **MAIN**:



Here I've added an instance of **AIR Compressor** to apply some subtle 'glue' to the entire mix, just to help everything meld together:



This is followed by **Air Para EQ** to add a small amount of boost to the bottom end of the mix, as well as take a touch off the higher frequencies to give the mix a slightly warmer feel.



I then added an **Vintage Effects > MPC60** to add some vintage sampler warmth to the mix, but here you could add any 'flavour' effect such as another vintage plugin or one of the harmonic effects such as AIR Tube Drive or Air Flavor.

On the final slot you might want to add an instance of AIR Limiter or even an AIR Maximiser if you want to try producing a much louder sounding mix, although generally I feel mastering is a job best performed in a computer (using the mix down you'll create in the next section).



Mastering is beyond the scope of this particular course, but if it's something you want to look into yourself I highly recommend you check out Conan Manchester's YouTube channel ([The Crates](#))

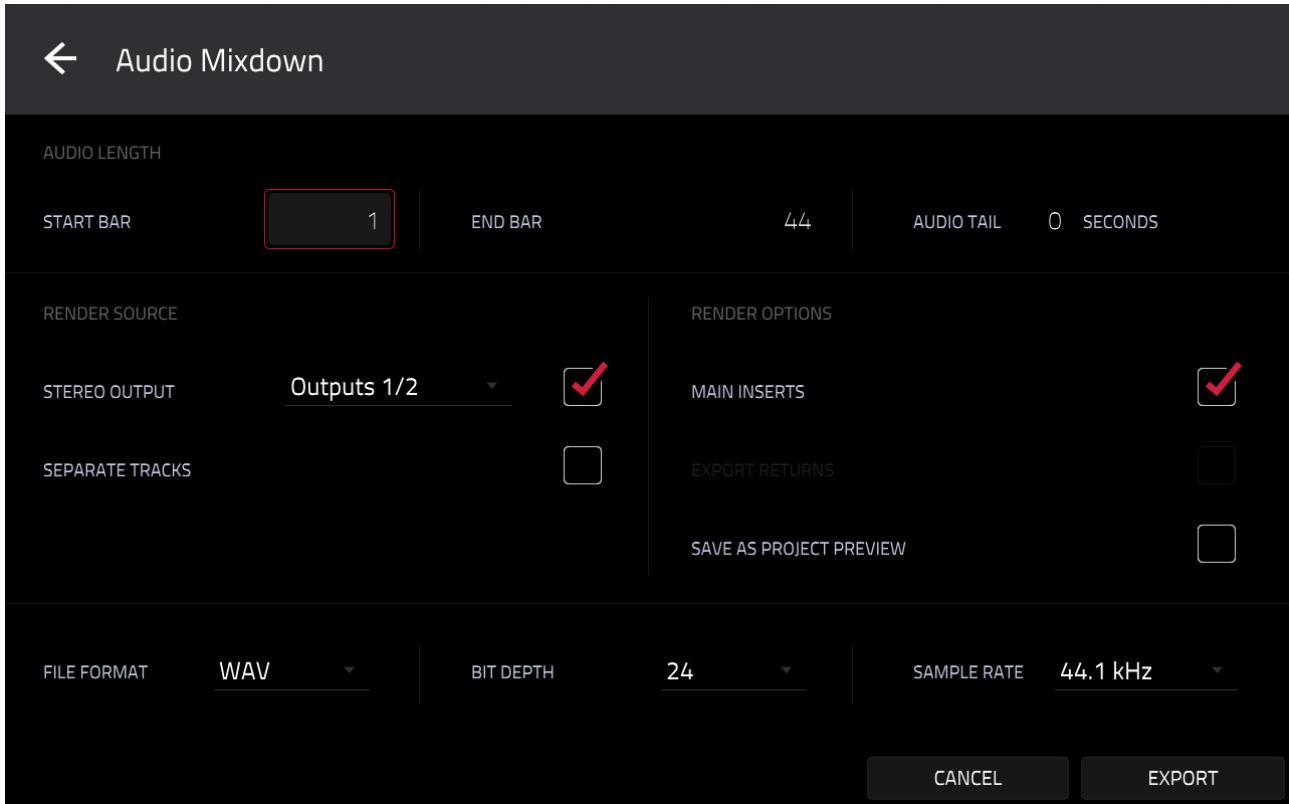
[Motel](#)) for a wealth of mixing and mastering tips, many of which can be carried out in an MPC.

Load up my mix, sound in sequence 2 (Draft Mix 1), **B13 Mixing Final.xpj**.

CREATING AUDIO MIXDOWNS

It's very easy to convert your MPC 'song' into a distributable stereo file which you can upload to social media, send to clients, or use to test your mix in other environments (e.g. car stereo, phone speakers, studio monitoring systems etc).

Tap on the [**SAVE**] icon ([**MENU**] > **SAVE**) and select **Audio Mixdown**:



The default settings on this screen will produce a two track 'stereo' mix down of the currently selected sequence; here the MPC effectively internally 're-samples' the main audio outputs of your MPC (Outputs 1/2) to create a stereo recording of all the tracks in your sequence.

This would be perfect for creating an audio file for distribution on social media and sites like Soundcloud or Bandcamp. Generally speaking you can leave all the default settings 'as is' – let's look at each one in more detail.

First you have **AUDIO LENGTH** which will default to covering your entire sequence from start to finish, so only change this if you'd prefer to export the audio between a specific set of bars.

AUDIO TAIL is useful if your sequence ends with long reverb or delay tails, as these will continue to play for some time after the sequence ends. With AUDIO TAIL set to 0 those reverbs will be cut off dead. Our current sequence does feature some lingering sample tails and ambience although they have completed playing by the end of bar 44, so in this instance you can leave AUDIO TAIL at 0.



Another way to counter this is to extend the length of your actual sequence back in MAIN or the ARRANGER, effectively adding some empty bars to cover any reverb tails.

Under **RENDER SOURCE** we choose which outputs we want to (internally) record. In our sequence we are only using **Outputs 1/2** so leave this as is. Well look at SEPARATE TRACKS soon.

Under **RENDER OPTIONS** you can choose whether to include any insert FX that you may have placed across your main outputs. If your mix is heading off for further mastering you might want to completely disable any master FX, preferring to add this within the final mastering environment instead. Otherwise, leave this 'Checked' - you can also go back to the 'Outputs 1/2' track in CHANNEL MIXER and directly disable any individual FX that you don't want including in a mix down (such as a LIMITER or similar).

FILE FORMAT determines the audio file type and there's several options to choose from. **MP3** and **OGG** are 'lossy' audio formats which degrade sound quality to reduce file size. Generally speaking these should be

avoided unless the destination service for your beat requires it to be specifically in one of these formats.

WAV, AIFF and FLAC are 'lossless' audio formats so are normally the preferred option. WAV files are probably the most universally accepted type of lossless format but FLAC files are much smaller. A service such as Soundcloud will accept any of these formats.

BIT DEPTH for a distributable audio file would normally be 24 bits for maximum compatibility.

SAMPLE RATE is just one of those decisions that no one can agree upon; many insist 44.1 kHz is just fine, others argue that 48kHz is the new 'standard', others say use 96kHz if you have the disk space. I personally always use **44.1kHz**.



Feel free to melt your brain reading thousands of different opinions on this topic on [Gearspace](#).

Hit **EXPORT**, give your mix down a name and choose a saving location. You should definitely export to one of your connected disks so you can easily copy the export file to a computer. You can repeat this process each time you create a different version of your beat (e.g. different mixes, different arrangements and so on) - just make sure you select a unique, descriptive name for each different mix.

And if you were wondering, there is an option on the mix down page '**SAVE AS PROJECT PREVIEW**' - if you check this box and hit **EXPORT** you don't get

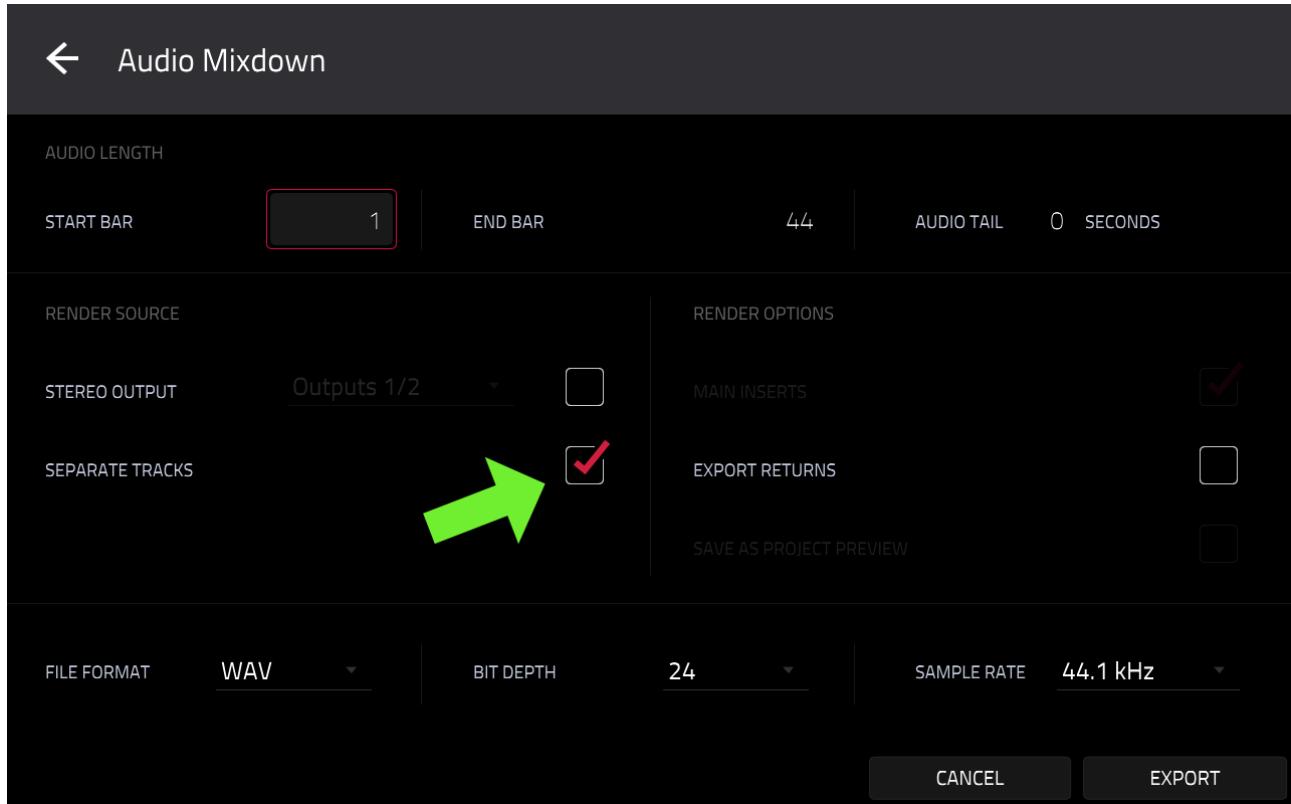
to choose an export location or file name, instead the MPC places your export file in a hidden folder alongside your project file. Now when you single tap the XPJ file in the [BROWSER] you'll hear your mix as the 'browser audition' (requires AUDITION > AUTO enabled).

SEPARATING TRACKS

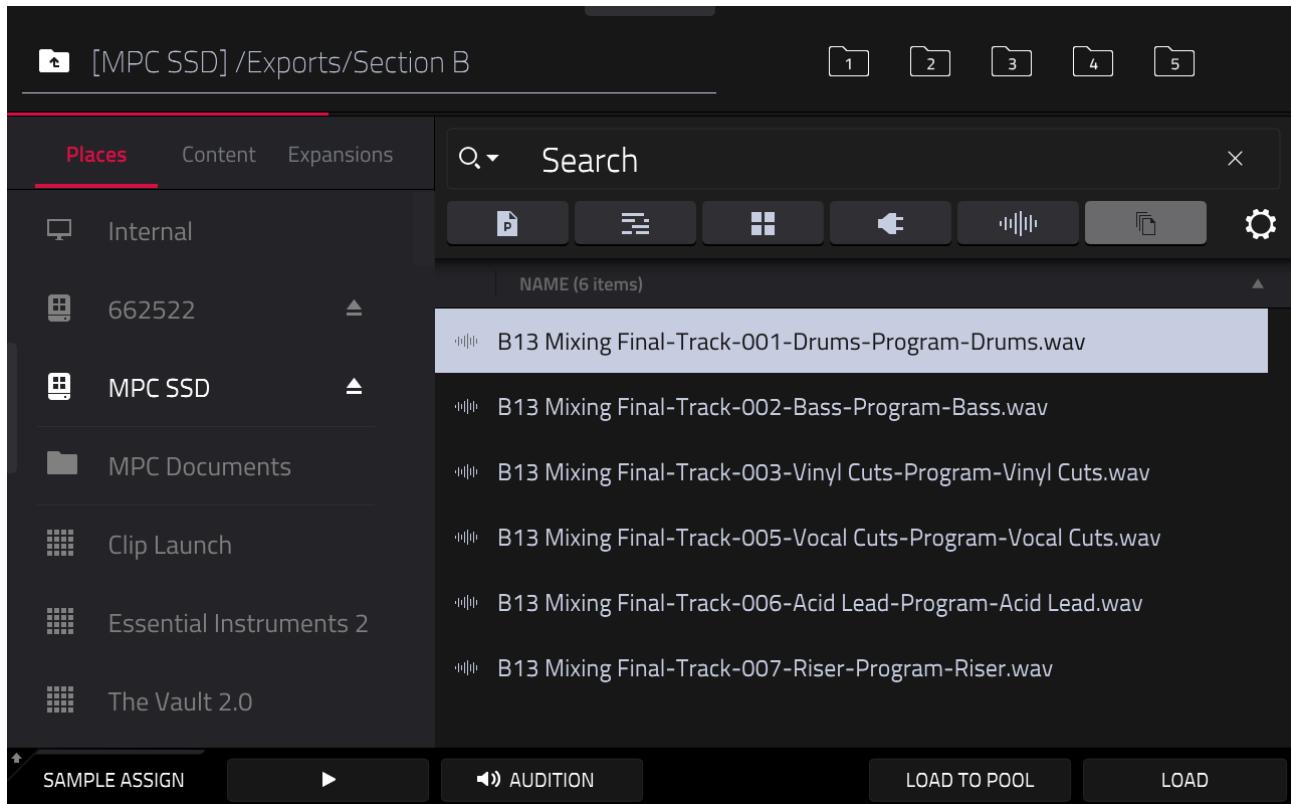
The effects and mixing options in an MPC are great, but at some point you may need to send your song over to a professional mixing engineer, or you may just prefer to complete the final mix yourself in a computer environment where you'll have access to higher quality mixing tools and FX.

The best way to achieve this is to export our MPC song as a collection of individual audio tracks rather than as a stereo mixdown.

From the **SAVE > Audio Mixdown** screen, tap on the '**SEPARATE TRACKS**' checkbox:



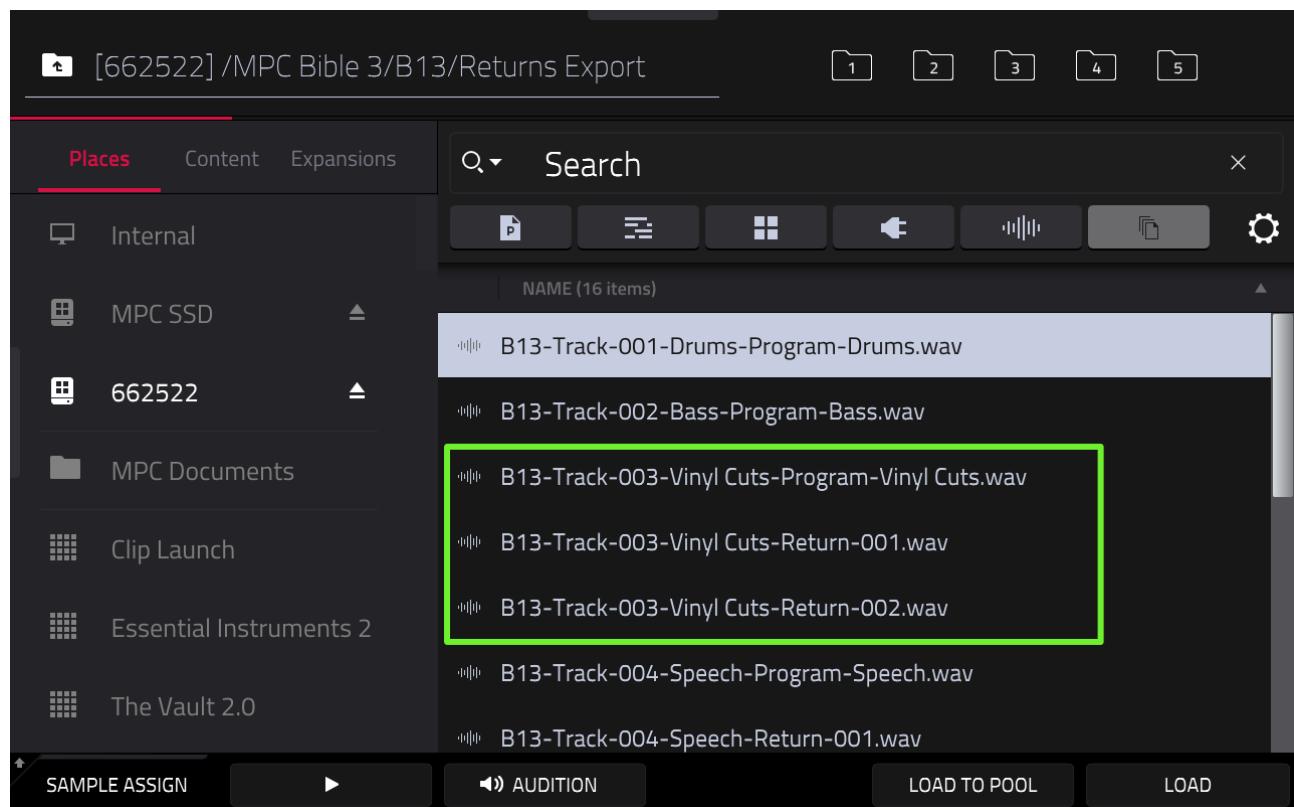
Now when you hit **EXPORT** the MPC will create a separate bounced audio file for each track in your sequence, naming each one after the track they were created from.



Unlike the stereo mix down we made previously, by default, any effects you have added to any track via the 'send and return' system will be **excluded** from each exported multi for that track. Those tracks will still include any FX added via the track 'inserts', but for example, the delay added to the 'Speech' track via SEND 2 will not be included at all.

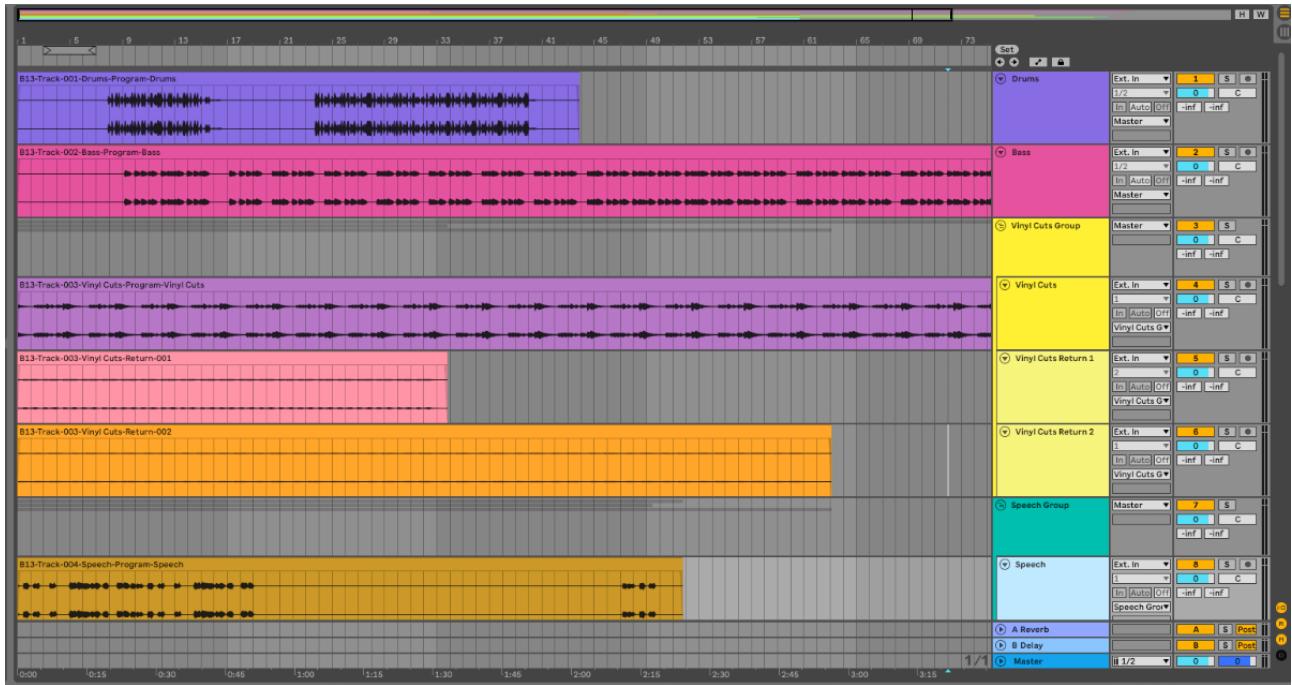
Why are send FX excluded from separated bounces? Well you might want to use the MPC reverbs (which are universally recognised as fairly middling quality) only as a rough guide while working within the standalone MPC environment, but when moving over to your DAW you can use the higher quality reverb and delays available in the DAW environment as the send FX.

If you do however plan to use your MPC's return FX in your final DAW mix, make sure you check '**EXPORT RETURNS**'. Now the MPC will create additional 'returns' audio tracks for each track that uses sends. These return tracks contain nothing but the 'wet' effected signal that came from each return.



With your separated tracks created you can connect your MPC disk your computer and drag the various audio files directly into audio tracks in your DAW project, effectively recreating the track structure of your MPC song directly within your DAW where you can mix with all your favourite VST plugins.

B13: MIXING & EXPORTING



SECTION C

INTERMEDIATE & ADVANCED TECHNIQUES

It's now time to begin delving deeper into the capabilities of the MPC as we explore more advanced techniques and workflows. A solid understanding of everything covered in Section B is definitely recommended!

C01: WORKING WITH LOOPS

In Section B we built kits and melodic instruments using 'one shot' samples, but another popular file format for beat making is rooted in the 'loop'.

TOPICS COVERED IN THIS CHAPTER

- ✓ Creating simple drum loops
- ✓ How to use loops in sequences
- ✓ Changing loop tempo
- ✓ Looping embolic loops
- ✓ Dealing with problematic loops

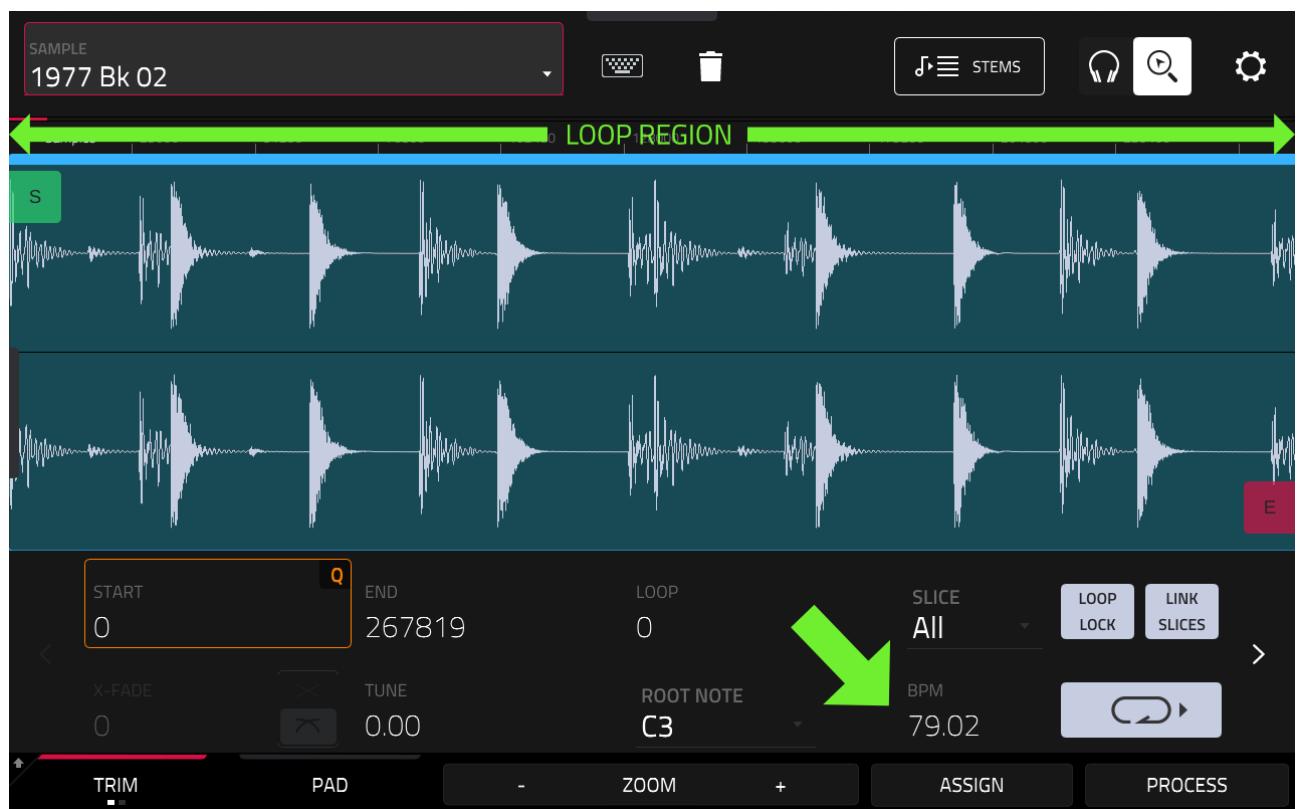
WHAT IS A SAMPLE LOOP?

We've already come across the concept of a loop when we 'looped' our sequence so it played continuously between two bars.

A 'sample loop' refers to a portion of an audio file that has been made to 'sustain' seamlessly and indefinitely between two points within the file. An example of one of the simplest types of looped sample is a drum loop – let's load an example.

Create a new blank project ([**MENU**] > **NEW PROJECT**). Now go to the **BROWSER** > **Expansions** > **C01**, tap on the **Breaks** folder, hold down [**SHIFT**] and hit **LOAD ALL** to load all our example breaks into the sample pool.

Now go to [**SAMPLE EDIT**] and select the '**1977 Bk 02**' sample:



Hit pad [**A01**] to perform a one shot '**Play From Start**' preview of the entire sample from beginning to end. As you can hear it's a nice and simple two bar drum break (where each bar is a count of '1-and-2-and-3-and-4').

To hear the sample played as a loop, hit pad [**A16**]. Now the sample will play from the '**START**' point (the green '**S**') all the way to the **END** point (the red '**E**') and then it will jump directly back to the start (**S**) and continue

playing in a seamless loop for as long as we need. The looped region is shown by the light blue bar above the waveform.



While 'sample loop' technically refers to the looped portion itself, it is also used interchangeably to describe collections of samples that contain looped regions, as in, 'I have a huge folder of drum loops on my hard drive'.

An important setting for any loop is the **BPM** parameter which tells us the tempo of the loop – this shows us that our 1977 Bk 02 sample has a tempo of **79.02 BPM** and we'll be able to use this information when using our loop within a sequence.

The easiest way to understand sample loops is to learn how to make one; we'll then learn how to use loops in a sequence.

CREATING A DRUM LOOP FROM A BREAK

In **SAMPLE EDIT** tap on the top left sample name and use the (DATA WHEEL) to select the '**1977 Bk 306**' sample:

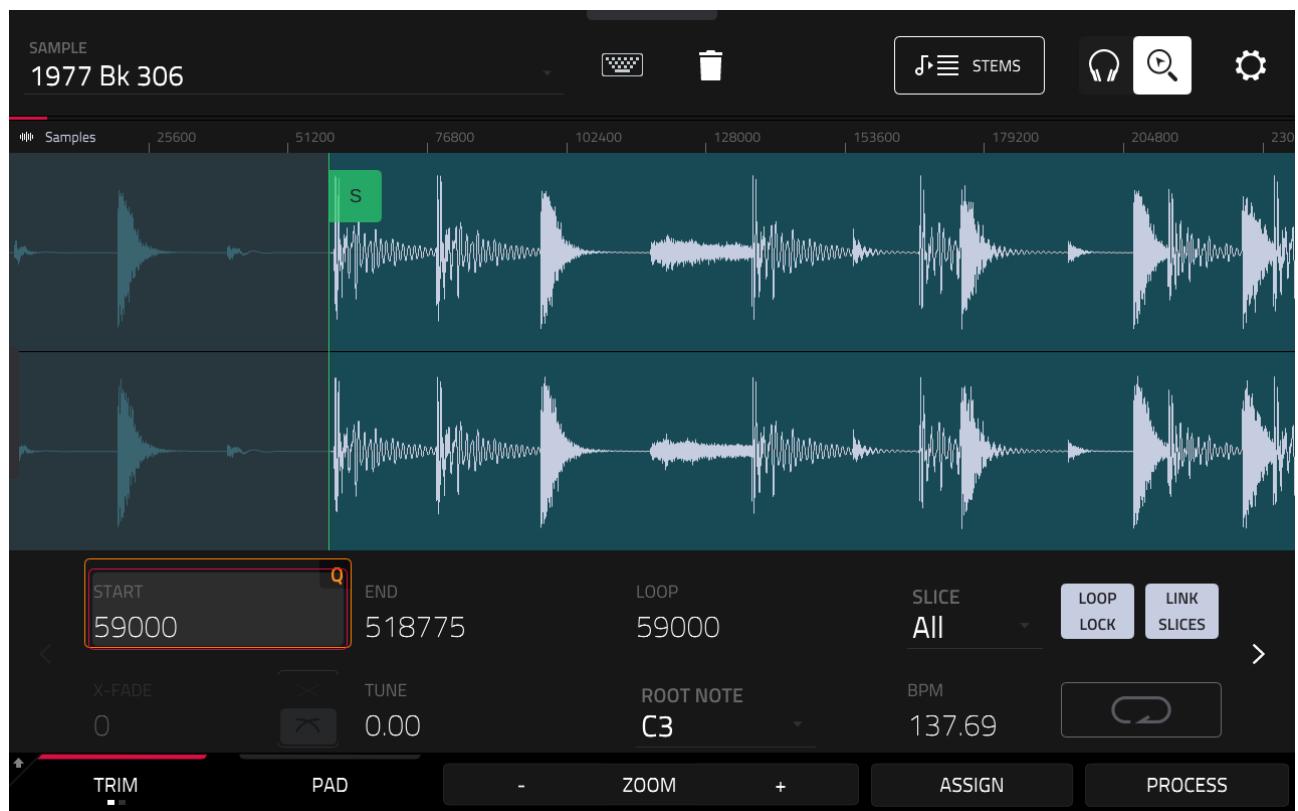


Hit pad [A01] to perform a one shot 'Play From Start' preview of the entire sample. As you can hear it's a different variation of the previous drum break - same drum kit, but much slower tempo. The MPC has analysed its tempo and believes it is **137.69 BPM**, which is incorrect, but we'll look at fixing this a little later.

Most importantly at this stage is that this break is not a 'loop' and contains no looped region. Typically when creating a drum loop we'll loop it for a number of 'whole' bars (i.e. 1 bar, 2 bars, 3 bars etc). This break contains a short section of drums at the start, a 2 bar section and then an extra kick at the end. We'll need to isolate that 2 bar section.

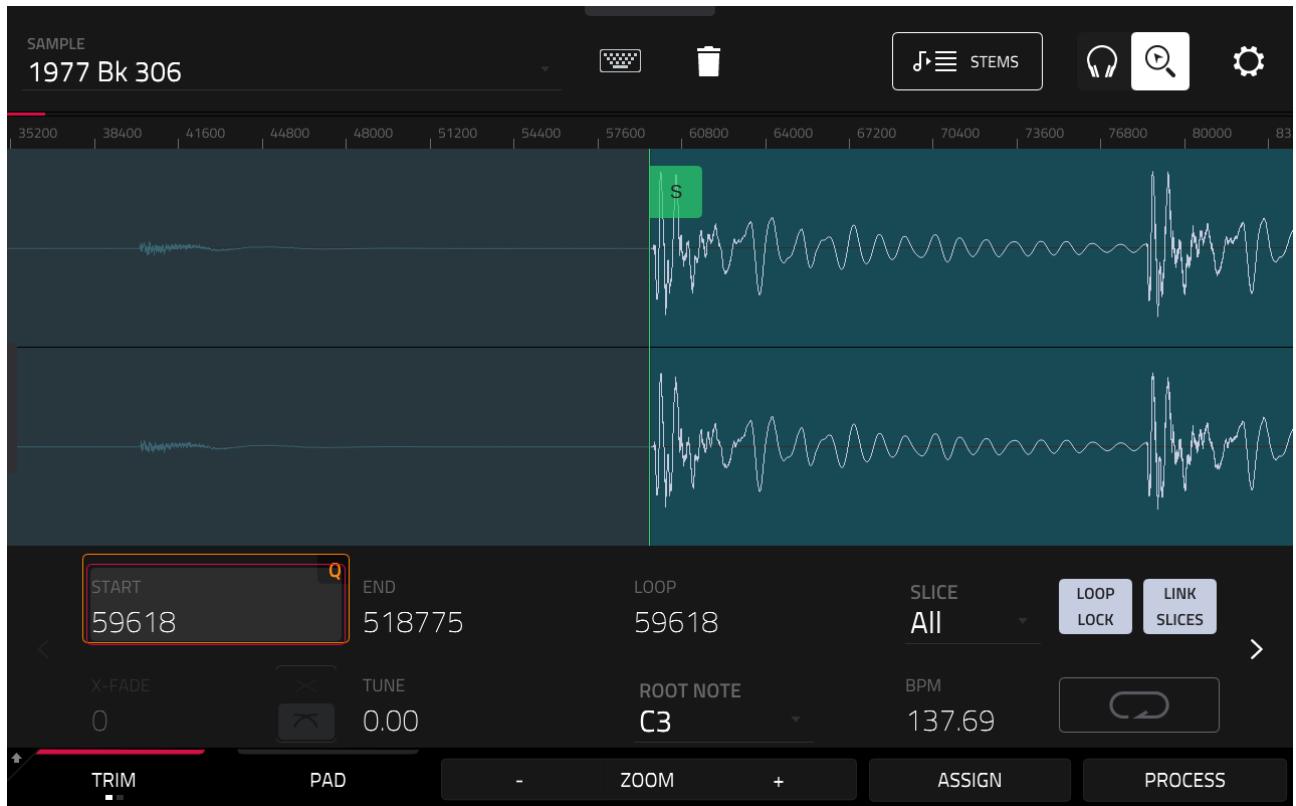
To create a loop from this break we first need to define the 'start' point of the loop. First hold down **[SHIFT]** and select **0 SNAP** to ensure our edits fall on a zero crossing point.

Now tap on the **START** point parameter to set the zoom focus point. Select **[Q-LINK BANK 1]** and use (Q-LINK 13) to move the **START** point to approximately **59000**:

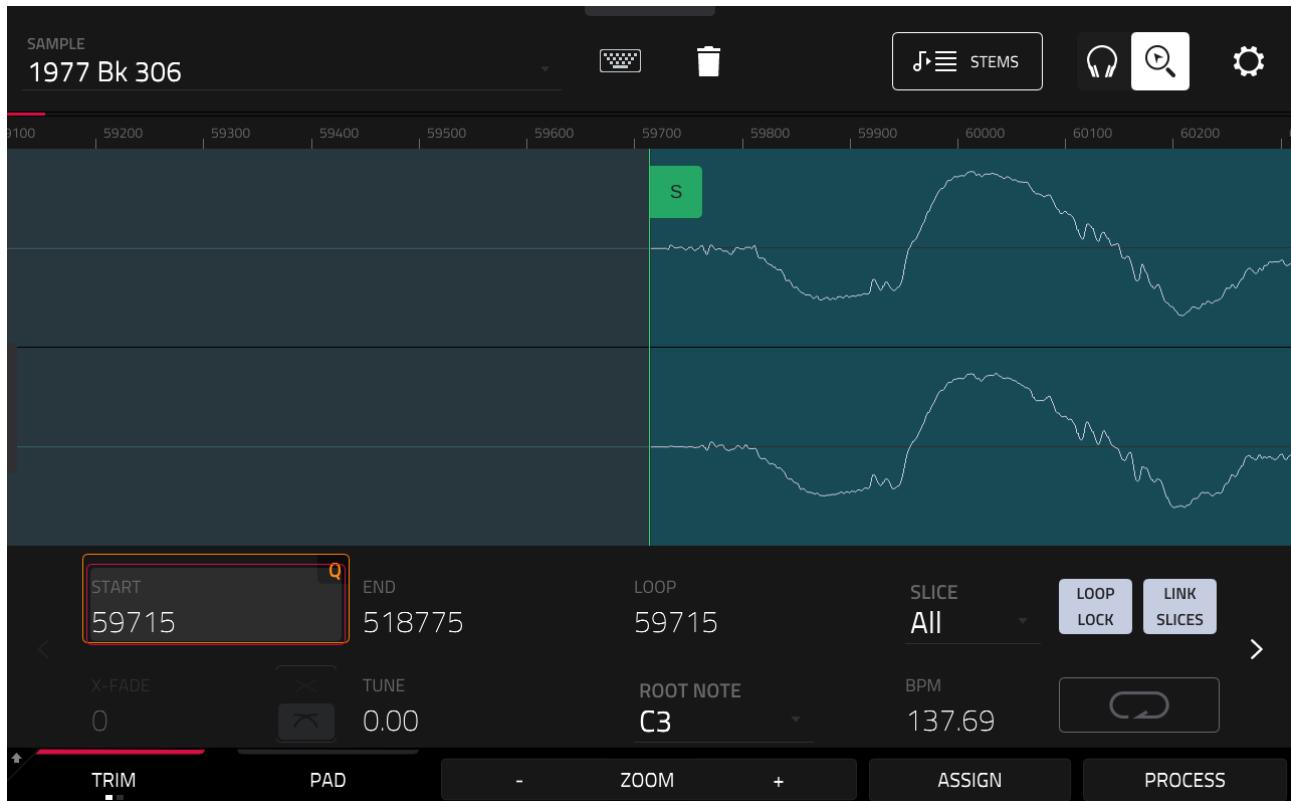


Press the **ZOOM+** button twice to magnify a little or 'pinch and zoom' on the touchscreen. Now move the **START** point using (Q-LINK 5) to around **59618**:

C01: WORKING WITH LOOPS

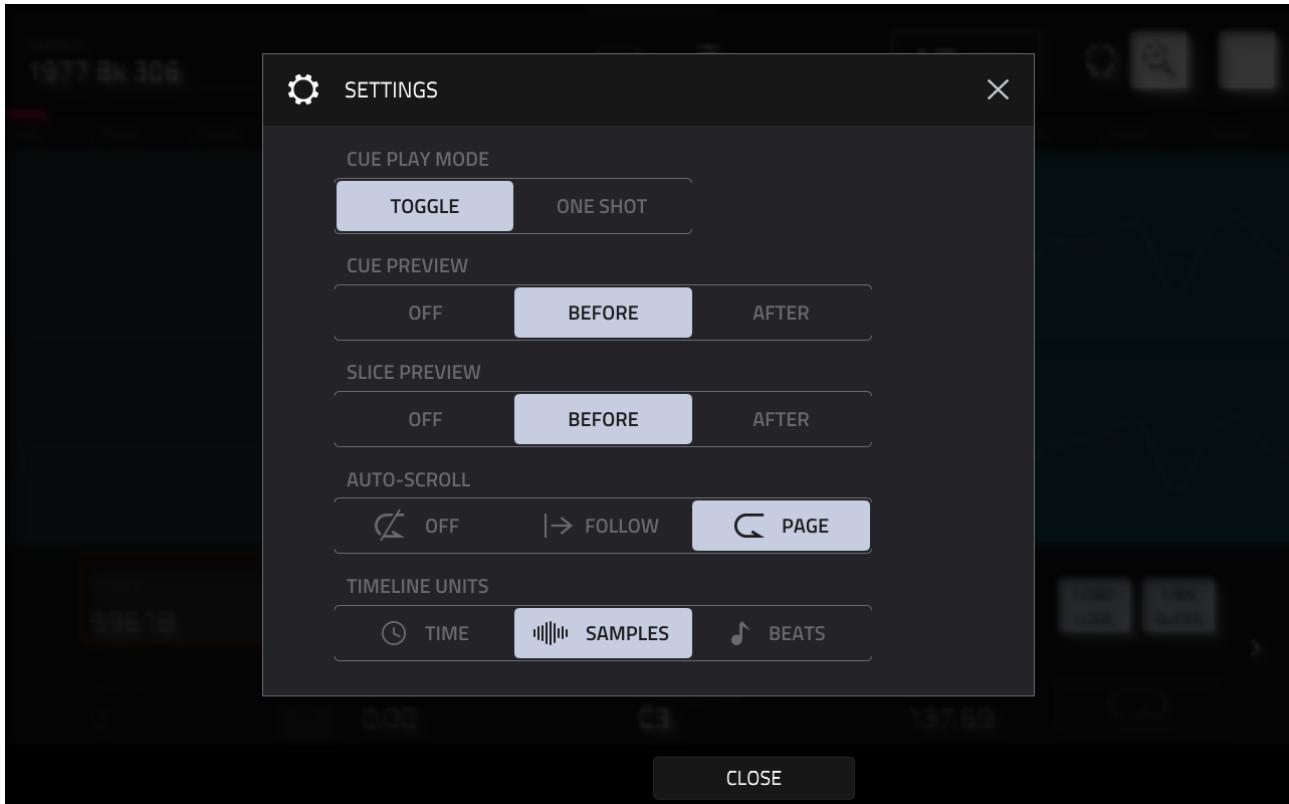


Press **ZOOM+** twice again and begin to finalise your START point using the (DATA WHEEL) or (Q-LINK 1); zoom in even closer if you wish. I decided on **59715**:



If the edit point focus gets randomly lost (which at the time of writing, happens all the time) a quick press of a ZOOM+ or ZOOM- button normally 're-focuses' the screen back to the currently selected edit point.

Remember, use the **GEAR icon** in the top right of the screen to turn control how **SLICE PREVIEW** functions when changing any edit points in this screen:



If you like to preview the edit in real time, consider setting this to **BEFORE** and as soon as you hit the true start point you'll hear the faintest of clicks, so then back off slightly. Or just set **SLICE PREVIEW** to **OFF** and use your eyes.

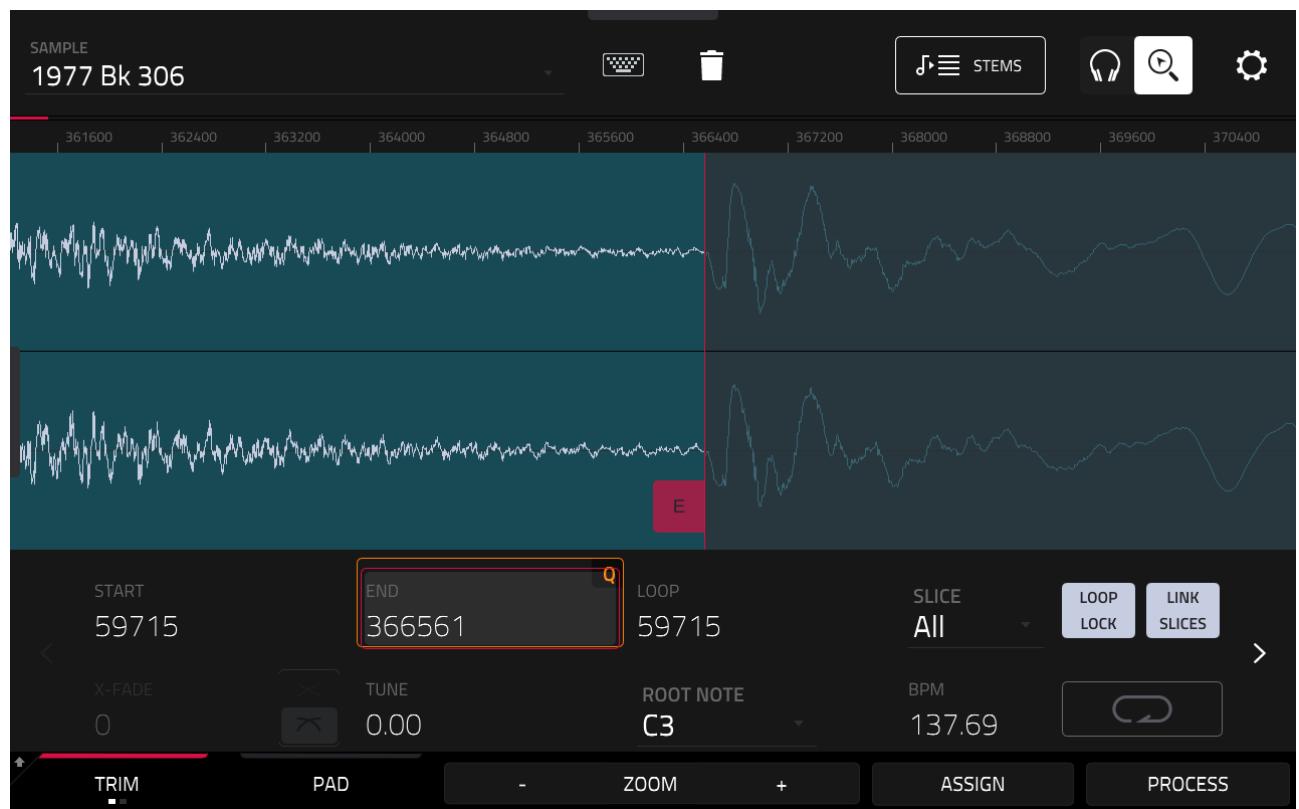
Press and hold pad **[A05]** for a 'note off' preview from the start point; if ever you hear a 'click' when previewing the start of a loop, back off the START point a little more by turning (Q-LINK 1) anticlockwise.

You can also use pad **[A06]** to preview the audio just *before* the start point; in this instance you should hear silence - if you near a click, back off the START point a little.



Do be aware that 0 SNAP edit points seem to vary by maybe +/- sample points depending which direction you approach them from. It never seems to affect the end result either way, but do be aware that sometimes my recommended edit point may not be possible to achieve using 0 SNAP in your MPC 'in that moment in time'! If this does happen, just pick the 0 SNAP point nearest to my recommendation.

Now tap on the **END** parameter and repeat the process – remember, if using the Q-LINKS the END point is controlled using the second Q-LINK column (Q-LINKS 14, 10, 6 and 2). Set an **END** point of **366561**:



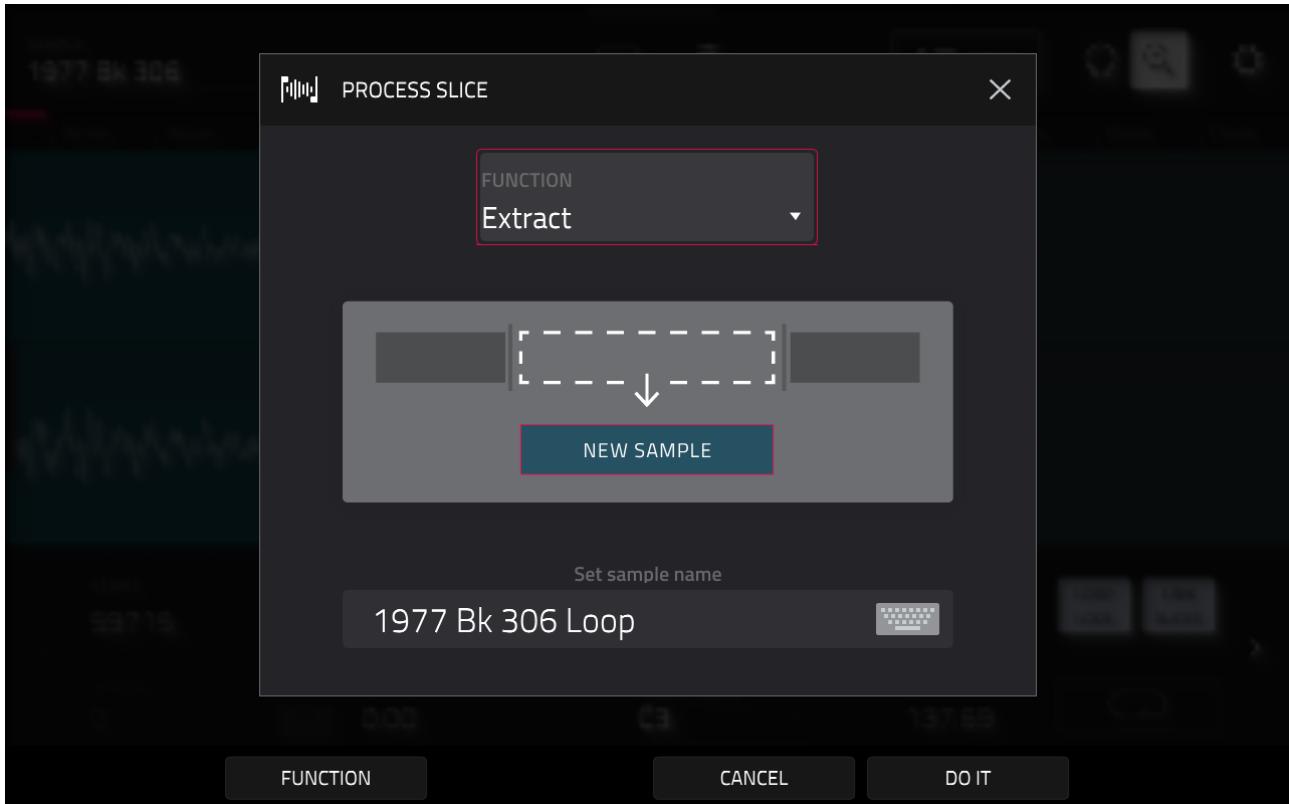
Use pads [A07] and [A08] to preview the audio either side of the END point to ensure everything is sounding clean.

TO DISCARD OR NOT TO DISCARD? THAT IS THE QUESTION

Generally speaking I'm a big fan of using 'non-destructive' techniques whenever possible as they afford more flexibility (tweaking edit points at a later date, retaining access to the currently disabled parts of the audio etc) so I generally tend to avoid automatically discarding the unwanted content either side of the START and END point.

However one advantage of discarding unused sample data is that the MPC will normally make a more accurate calculation of the sample's tempo, and this is going to be important to know when using the loop in our sequences.

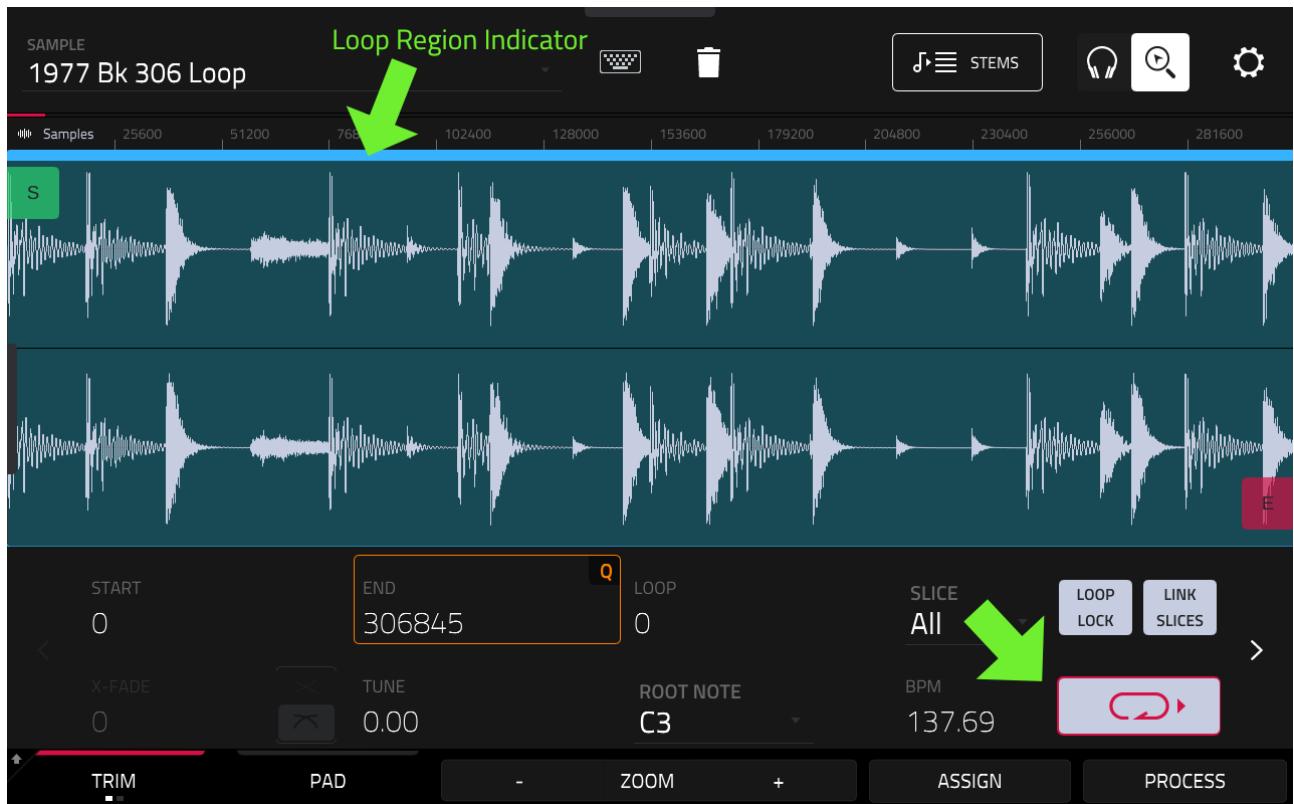
One option is to use '**PROCESS > Discard**' to remove the unused data either side of the START and END points. However I generally prefer the alternative; '**PROCESS > Extract**':



This will create a completely new sample from the data within the START and END points, while keeping the original sample 'as is'. This way we retain the original sample within our project and create a separate, perfectly looped sample to use in this tutorial. The disadvantage is this method uses more memory, albeit negligible in this case, so I'm not concerned in the slightest.

Give the extracted sample the name '**1977 Bk 306 Loop**' and hit **DO IT**. The MPC doesn't automatically select the extracted sample, so tap the current sample name in the top left of the screen and turn the (DATA WHEEL) to select the newly created '**1977 Bk 306 Loop**':

Now we tell the MPC what type of loop this is; just tap on the **LOOP** icon once:



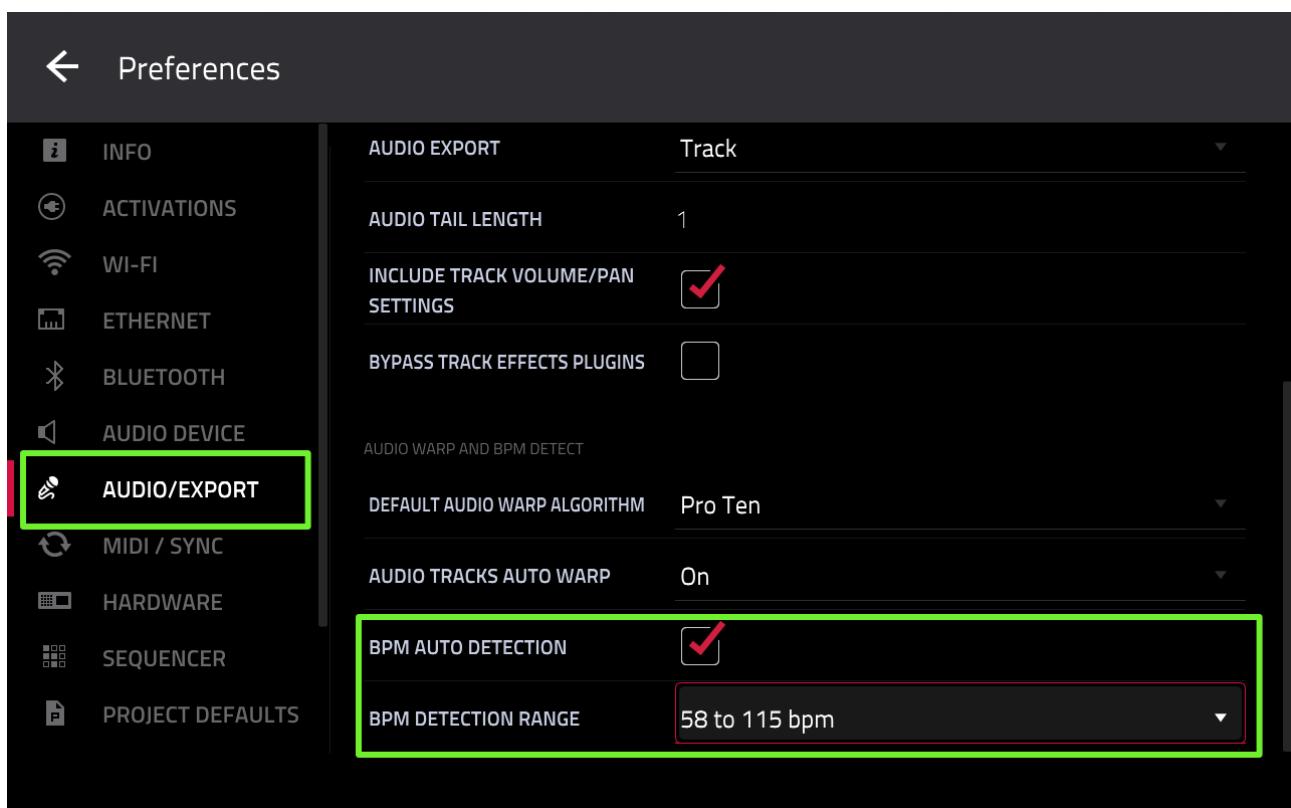
This tells the MPC that this is a 'forward' loop (which is generally considered the 'standard' type of loop). A forward loop is designed to play from START to END and then jump back to START and repeat continuously (until you tell it to stop). Notice that once 'loop' was turned on, a blue bar appears above the looped region.

This blue bar is another indicator that you are dealing with a looped sample. To hear the loop in action, hit pad [A16] and it will loop until you hit [A16] again (or press and hold pad[A13]).

LOOP TEMPO

Whenever you load or create a sample, the MPC automatically attempts to detect the tempo and the accuracy does depend on whether or not the source material was rigidly quantized or a 'live' human performance. I also find that the detected tempo can change after editing the length of a sample (shorter samples tend to give more accurate results).

In an attempt to improve tempo detection results, the MPC has a preference option that allows you to optimise the detection algorithm. Go to **[MENU] > PREFERENCES > AUDIO/EXPORT > BPM DETECTION RANGE:**

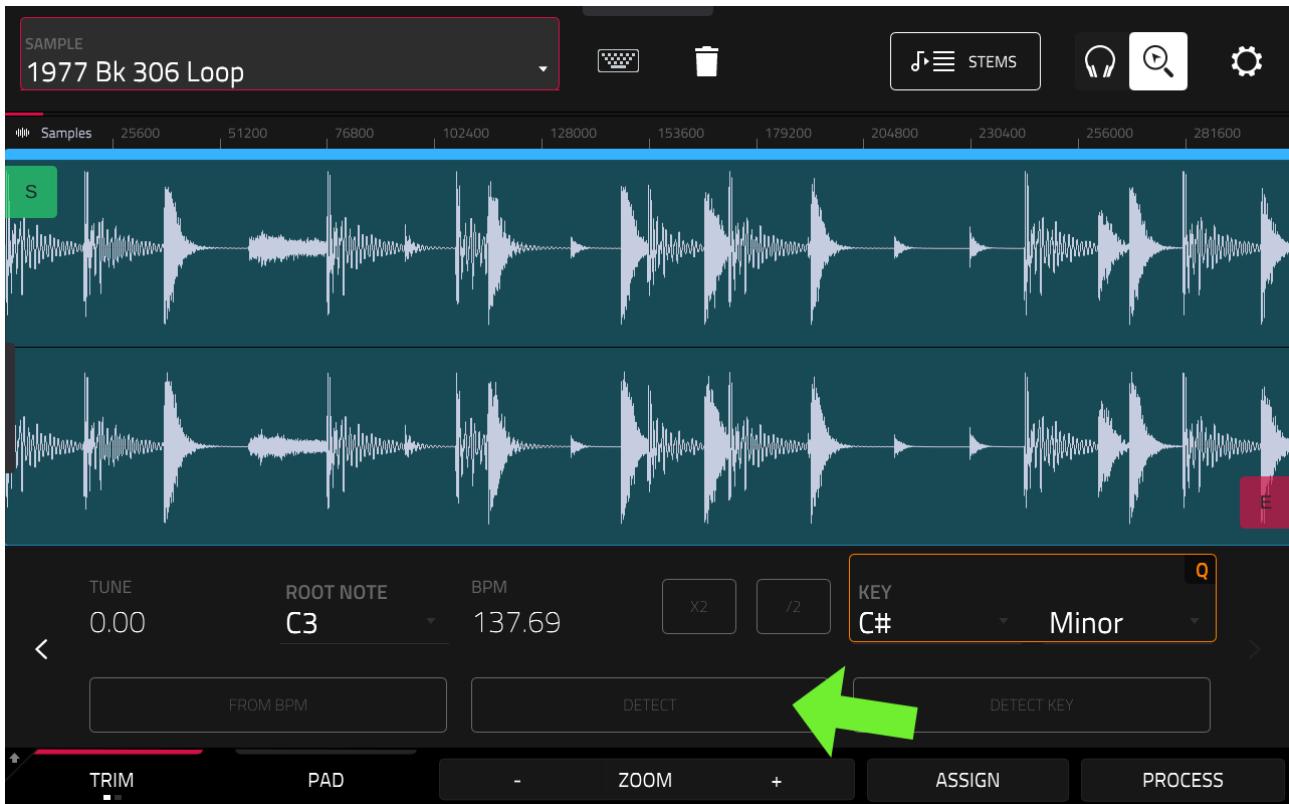


There's a number of different tempo ranges available here which can be used to tailor the BPM detection algorithm to the kind of tempos you might usually work in. The default setting here is **78 to 155 BPM** which is quite broad and in my experience often leads to the MPC stating tempo is actually 'double' the true value.

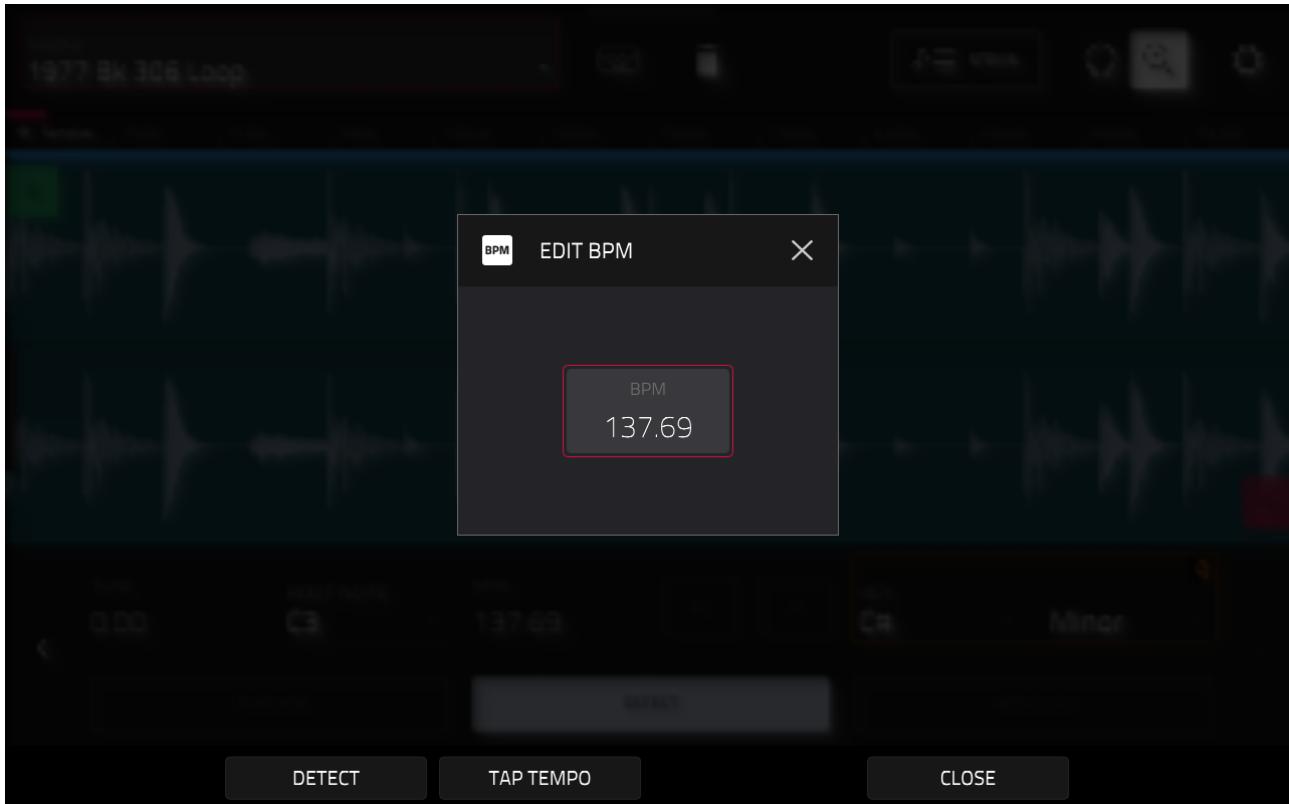
In my experiments, I've actually found the '**58 to 115 bpm**' setting tends to be the most reliable (even for tempos outside that range), so that would be my recommend option here, but you might have to tweak this to suit the type of tempos you tend to work with. It's not ideal, but it is what it is!

After looping and extracting your new looped break, you'll see the tempo is like showing as 137.69, which I can assure you is very much incorrect. So at this point I recommend you force the MPC to re-analyse the new shorter break as it will almost certainly give a truer tempo calculation.

In **TRIM**, hit the **right hand arrow** to reveal the **secondary SAMPLE EDIT** screen (I normally call this the 'detect' screen):



Here you have a few options in regard to the tempo, but to force the MPC to re-analyse, hit **DETECT**:



Here in the 'EDIT BPM' screen, press **DETECT** again to have the MPC perform an on-demand analysis of the tempo. It will tell you the tempo is **68.99**, which is definitely more accurate.



To get a guide to the true tempo, hit pad [A01] while in the EDIT BPM screen and hit the TAP TEMPO button in time with the beat - this will change the BPM value to match the tempo you are tapping at.

Hit **CLOSE**. Now, sometimes the detected tempo might be 'double' the true tempo - this normally means the BPM range you chose in preferences needs changing, but as a quick fix you can just hit the **[/2]** button to halve

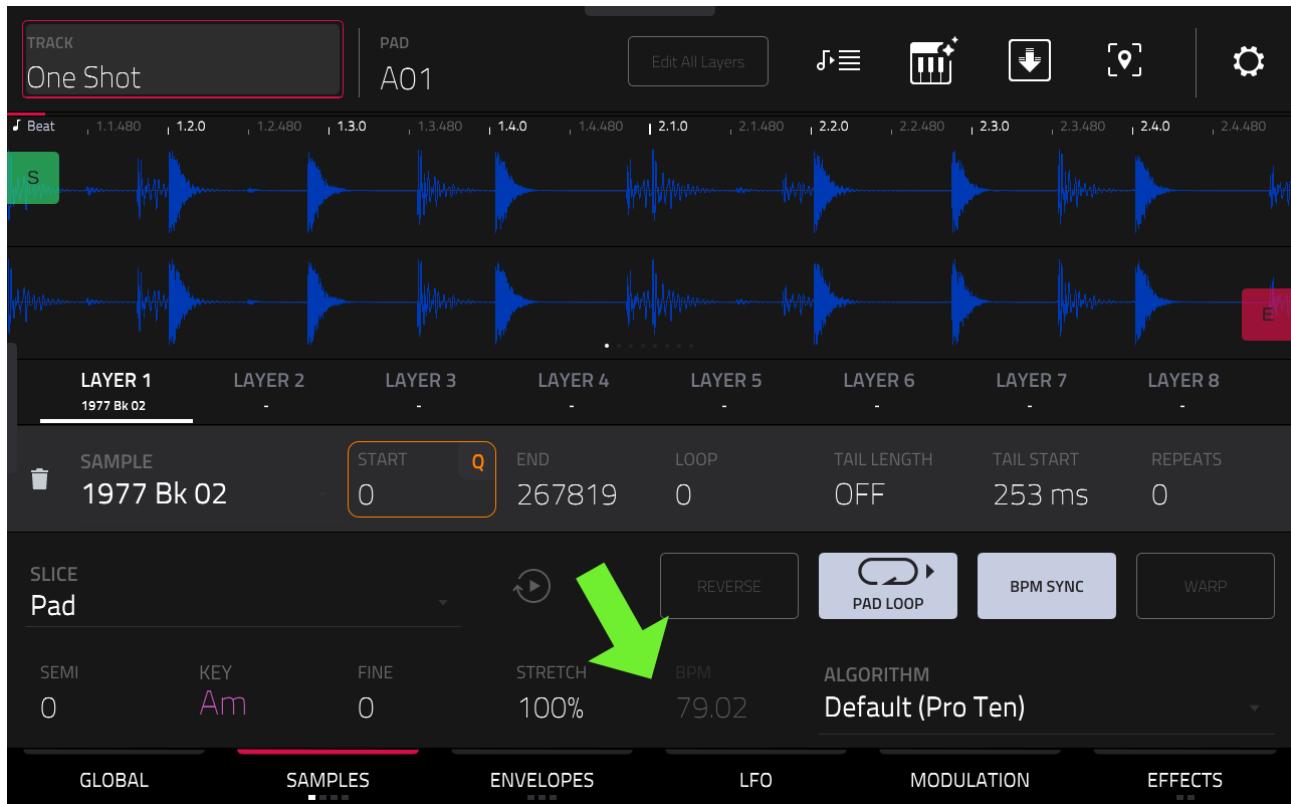
the given tempo. You can also override the MPC's automatic calculation by simply entering your own custom tempo in the BPM field.

HOW TO USE SAMPLE LOOPS IN SEQUENCES

There are fundamentally two ways we can incorporate these types of looped samples in a project; we can trigger the loops from a pad in a DRUM track, or we can assign them to an audio track.

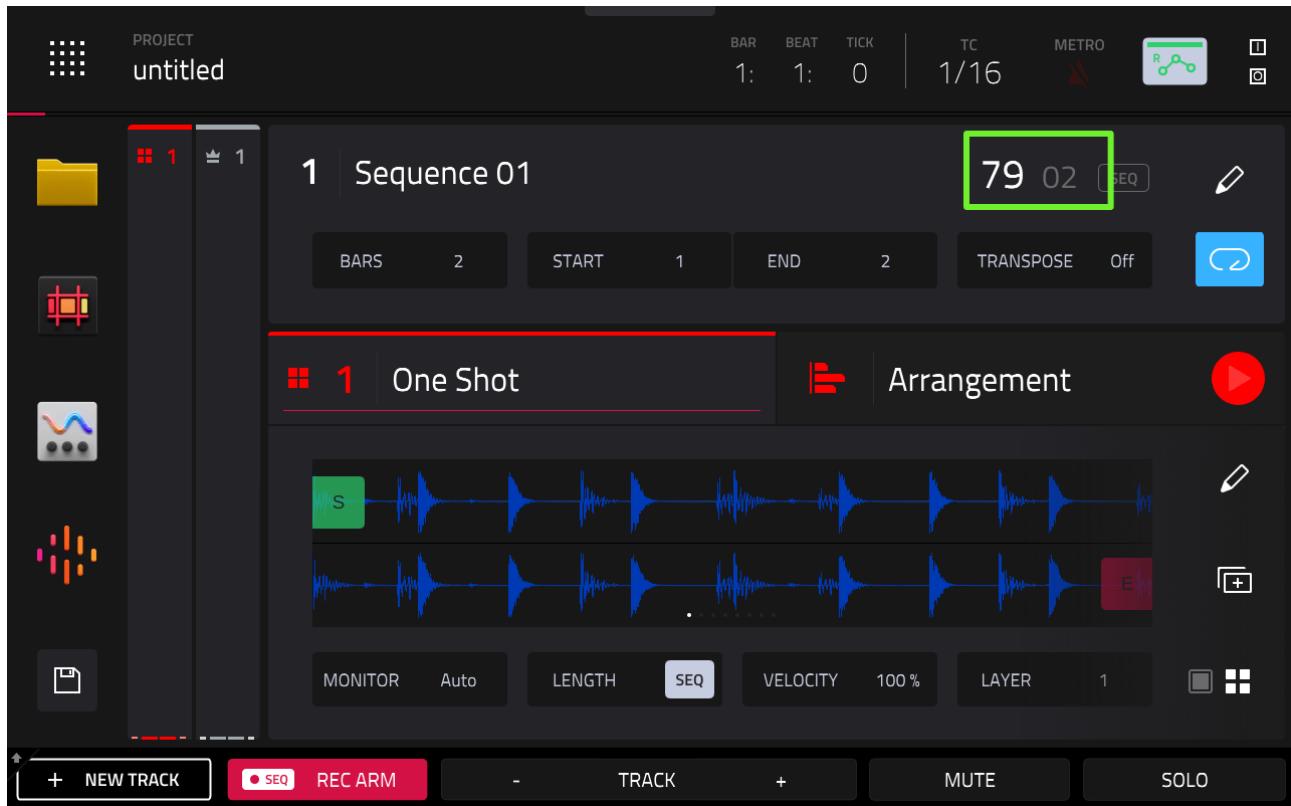
Go to [**MAIN**] and set **track1** a '**DRUM**' track – remember just single tap the track icon to bring up the track type options. Now press and hold on the track name and rename the track to **One Shot**.

Go to **TRACK EDIT > SAMPLES**, select pad **[A01]** and assign the **1977 Bk 02** sample to **LAYER 1**:

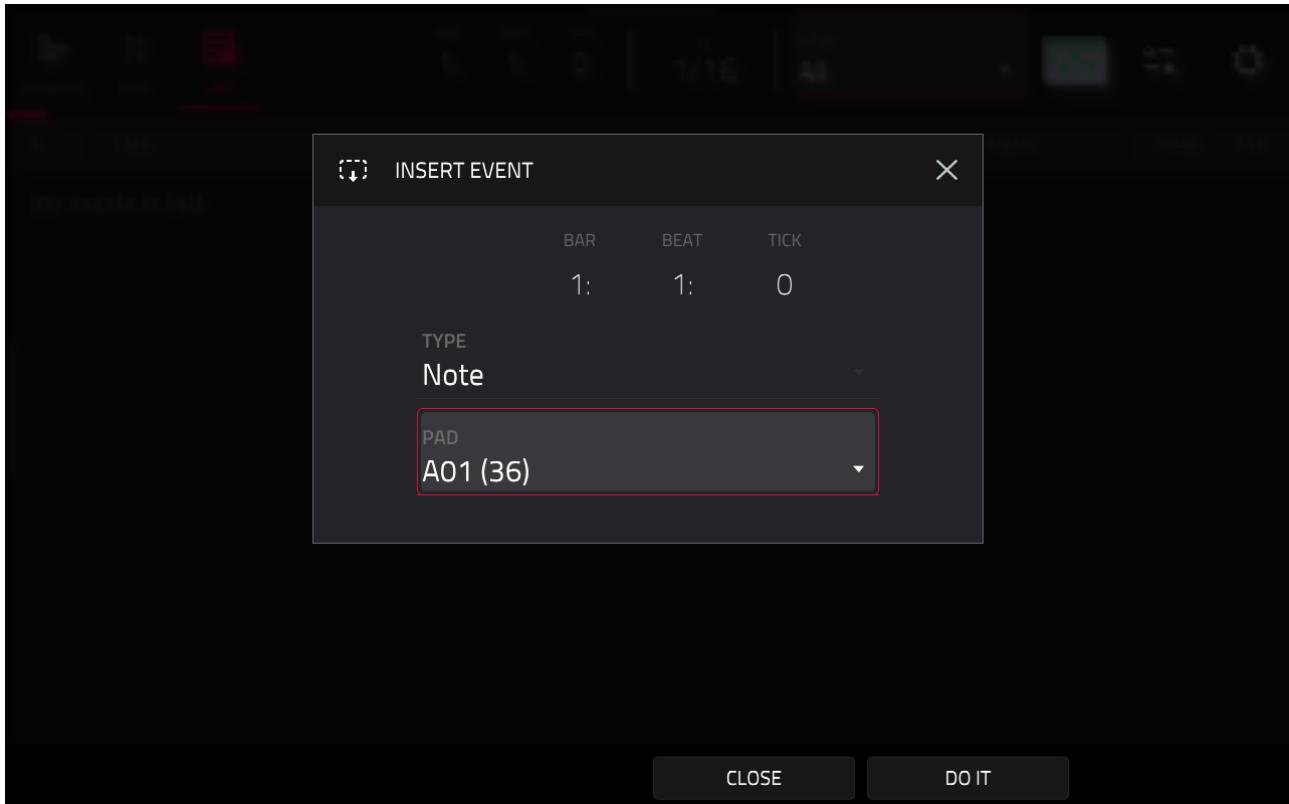


Hit pad [A01]; our drum loop plays from start to end in a 'one shot' style – let's record this 'one shot' trigger as a MIDI event on the track.

Notice the sample's detected tempo of **79.02 BPM** is also shown on this page, albeit greyed out. Go to [MAIN] and set a sequence tempo of **79.02 BPM** and a **BARS** length of **2**. Remember to hold down [SHIFT] to change the the sequence tempo in 1/100ths of a bpm.

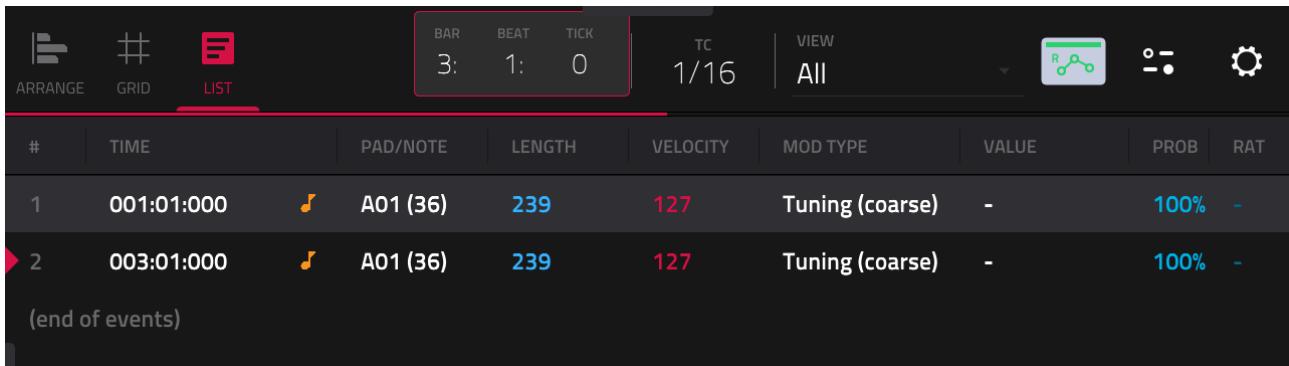


Now hit [**REC**] and [**PLAY START**] and after the countdown hit pad [**A01**] to enter a pad A01 event at **1:1:000**. Alternatively you could enter this event via **GRID VIEW** or in **LIST EDIT** using the **INSERT** button:



Press [**PLAY START**] – the drum break plays continuously in a 2 bar loop. Want to make this a 4 bar sequence? Go back to [**MAIN**] and change **BARS** to **4** and hit [**PLAY START**]. You'll hear that the break stops playing after two bars, the sample itself is not looping. This is because when a pad is set as a 'one shot' it simply plays the sample from start to end and then stops playback. To create a four bar loop from just this break we'll need to fire off another one shot at the start of the third bar.

So as before, insert a pad [**A01**] event into the track, this time at **3:1:0:**



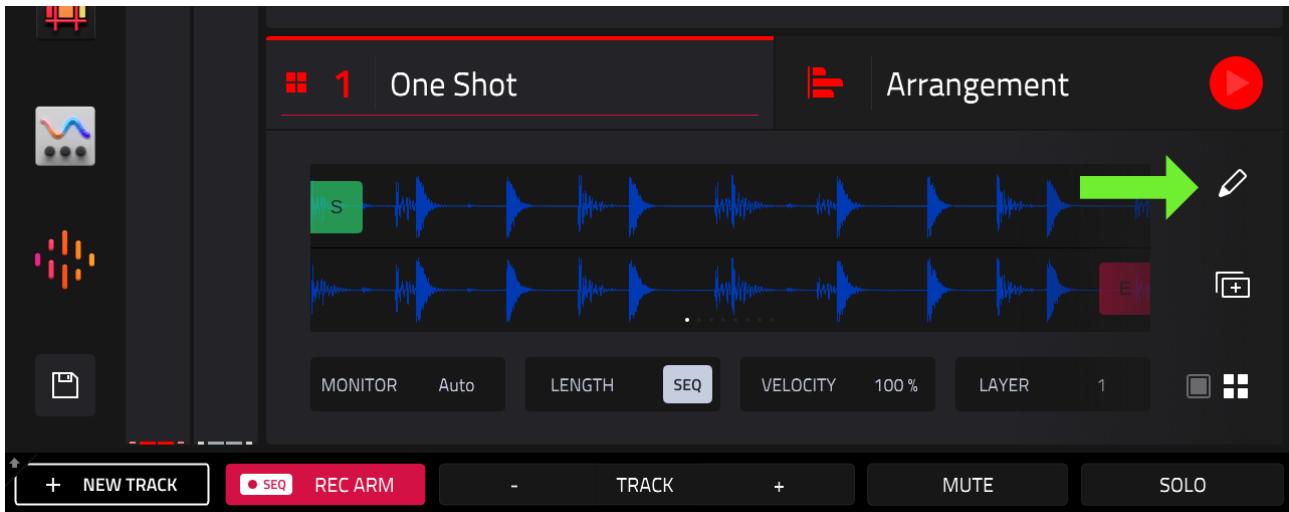
Press [**PLAY START**] to hear our continuously looping four bar drum performance. Working with loops set as 'one shots' is simple but also quite limiting. As a one shot, each event triggers a 2 bar break every time; what if we'd like the break to play for just one bar? There's no 'dynamic' control over this beyond directly changing the end point on the pad or re-editing the sample.

Also note that when you press [**STOP**] at any point during the sequence you'll notice that even though the sequence has stopped, the break continues playing until it reaches the end of the sample (you have to wait or **double tap [STOP]** to force it to stop playing).

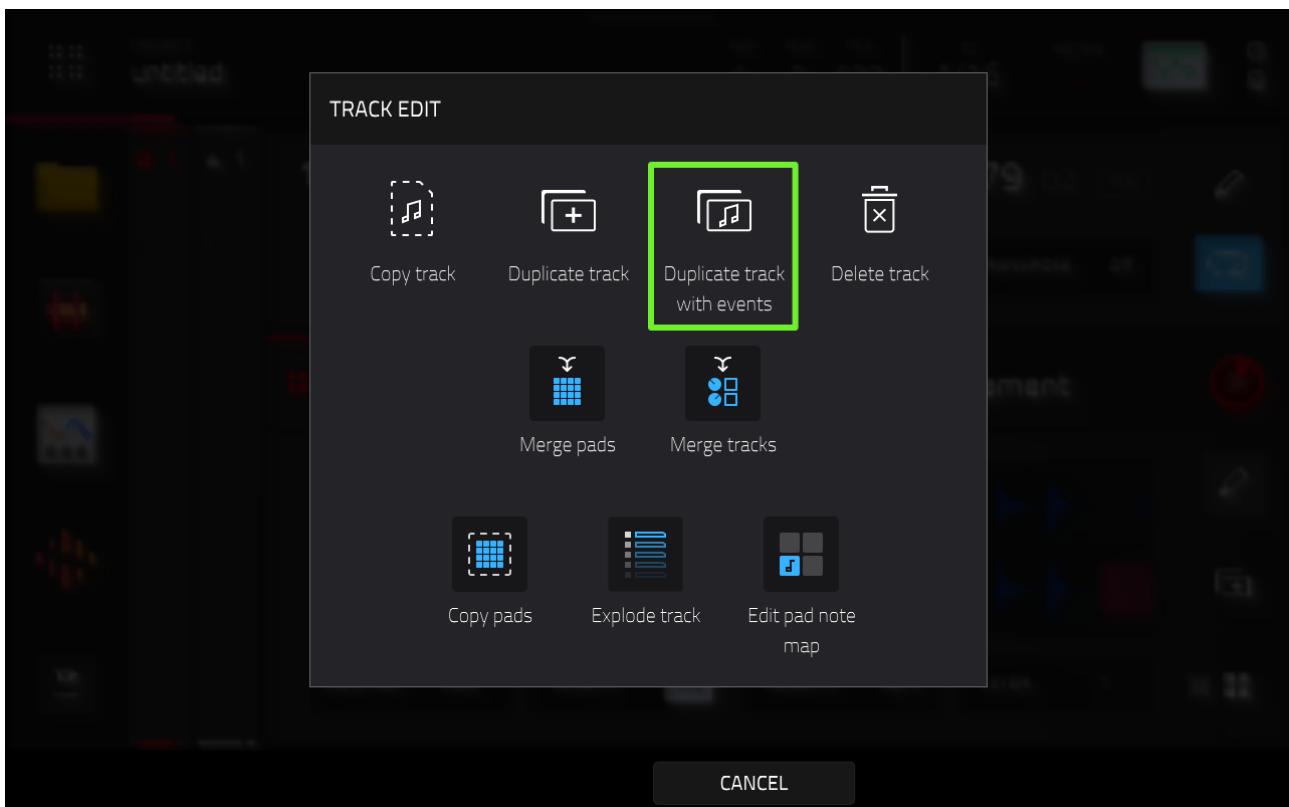
'NOTE ON' LOOPS

One shots have their use, but within a recorded sequence we typically want to have control the playback length of our drum loop so we can have each event trigger a drum break of any duration we wish, be it for 1 bar, 5 bars or even '2 and a bit' bars, but this isn't really possible with one shots.

In [**MAIN**] tap the **pencil icon** along the right hand side of the screen:

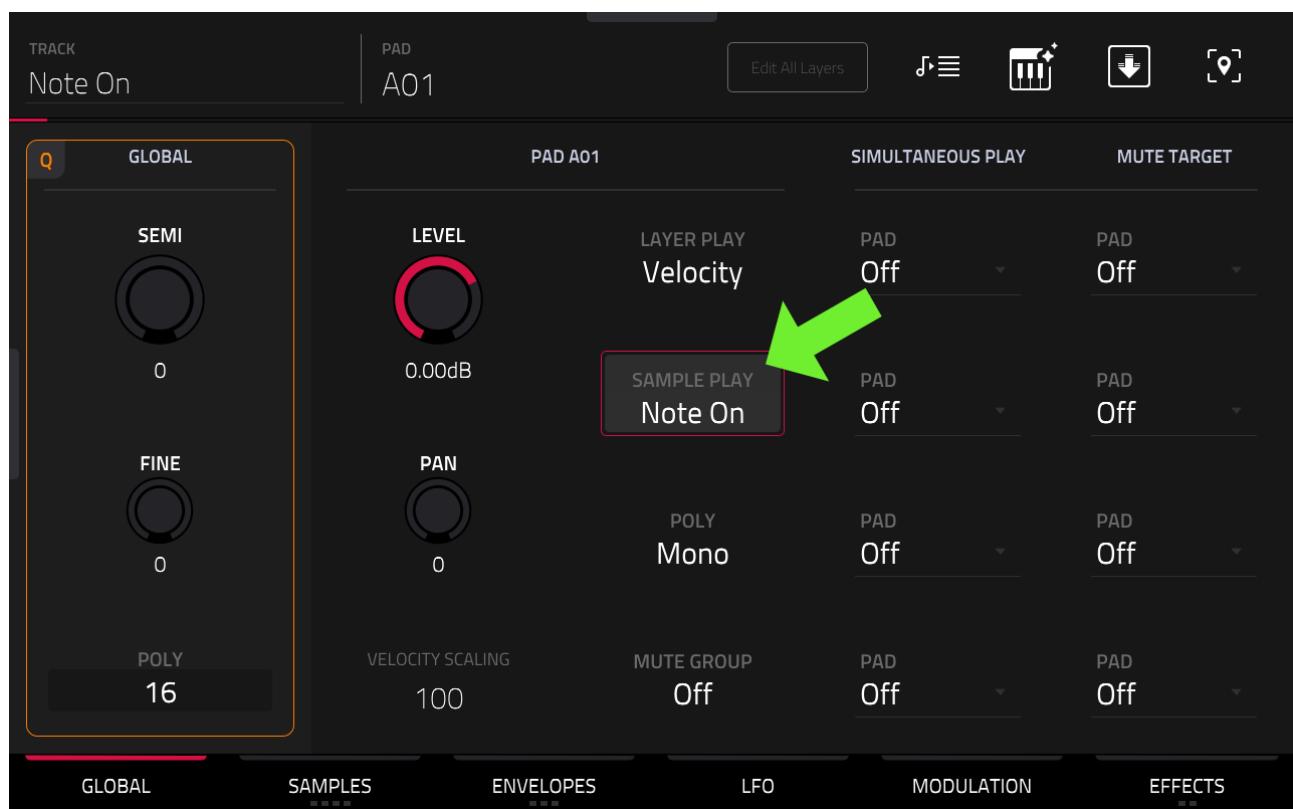


From the pop up dialogue, select **Duplicate track with events**:



This will create an exact copy of track 1 including all the MIDI events. Rename the new track **Note On**. Press **Solo** so only track 2 is audible.

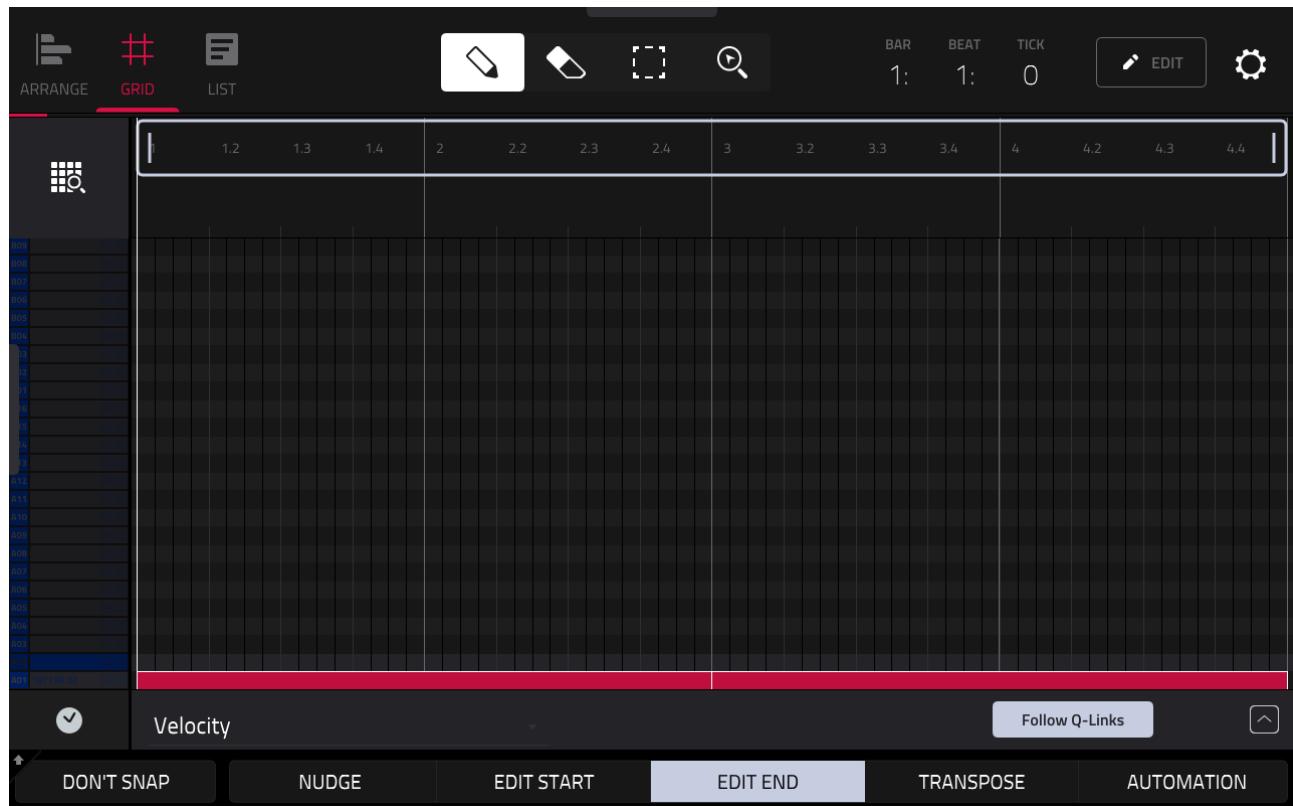
With pad **[A01]** selected, go to **TRACK EDIT > GLOBAL** and set **SAMPLE PLAY** to **Note On** (do not set to 'Note Off!'):



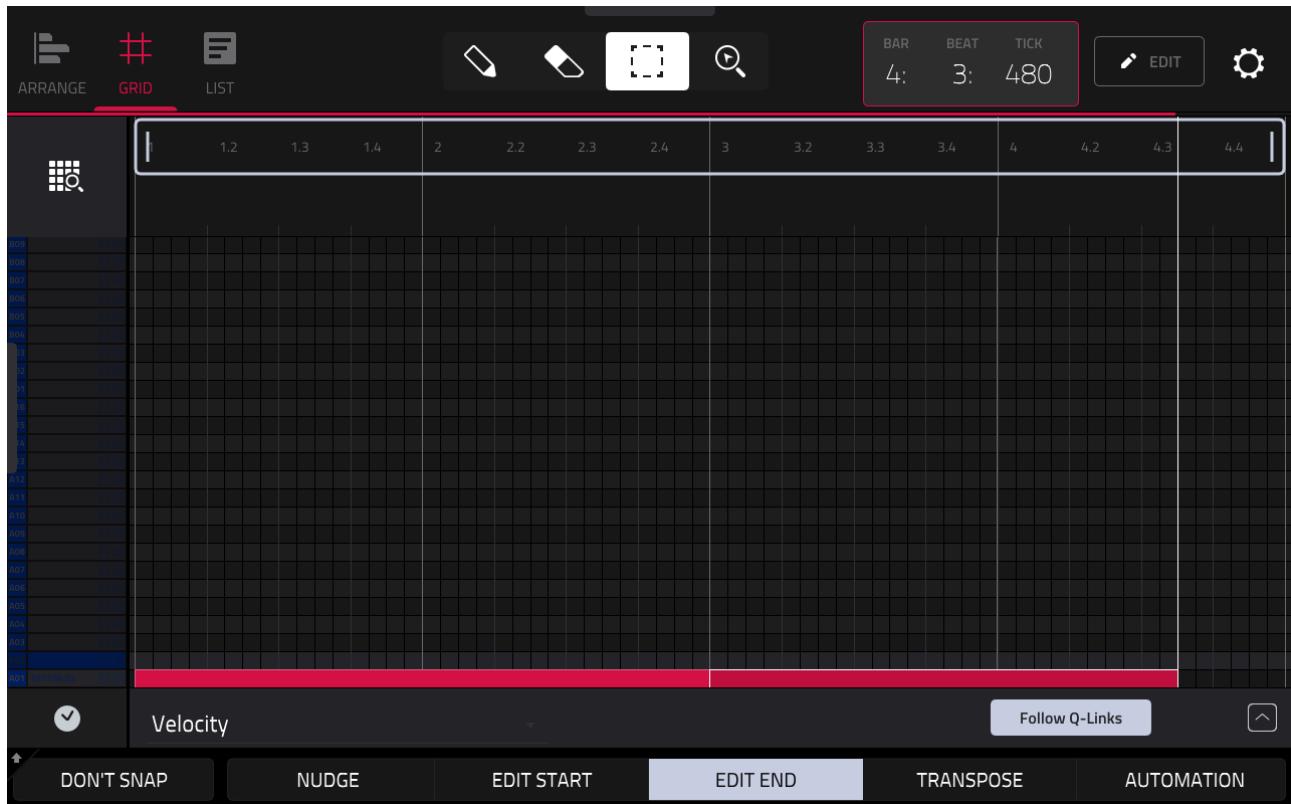
Press and hold pad **[A01]** and as it's now a 'NOTE ON' pad, you can now control the duration of the drum loop in real time by releasing the pad when you want the break to stop.

Now, if you hit **[PLAY START]** you'll no longer hear a continuous looping drum break, simply because the pad now only plays for the duration of the MIDI event that is triggering it, and those manually inserted note events in your sequence are by default, very short.

In [GRID VIEW] hold down [SHIFT] and hit **SELECT ALL** to select the two existing A01 events. Now press **EDIT END** and turn your (DATA WHEEL) to extend all the events to cover two bars each:



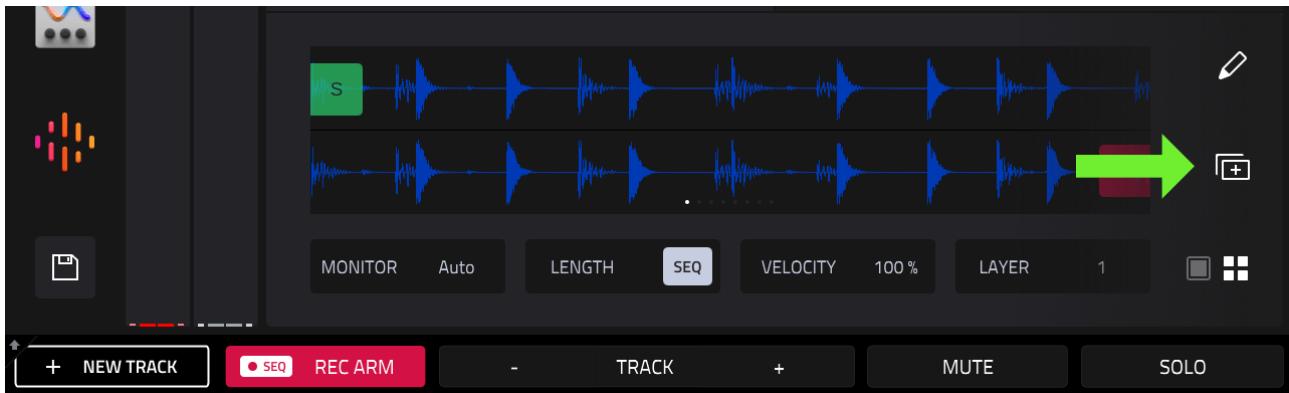
Now press [**PLAY START**] and let the sequence continue playing through all four bars and beyond; press [**STOP**] at any time and the break will also stop immediately. Now choose the 'select' tool, tap in the grid to de-select all the events and just select the last event; try setting the length of the second event to end at **4:3:480**:



Now the break is silent for that part of the sequence but begins playing again when returning to **1:1:0**.

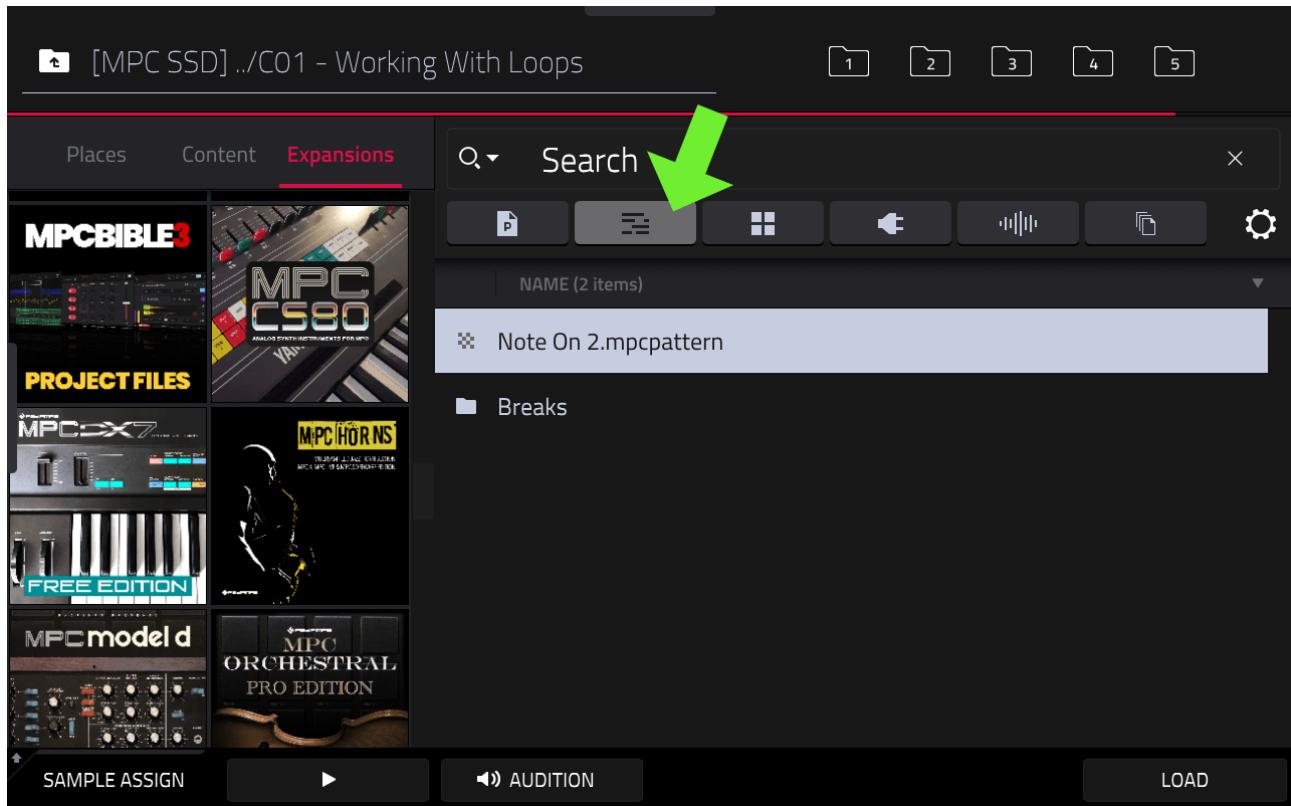
So the NOTE ON method is generally the better option for triggering loops in a DRUM track as it gives you a bit more flexibility over the playback duration although it does require that you always set an appropriate note event duration.

In **[MAIN]**, tap on the **[+]** icon at the right side of the screen:

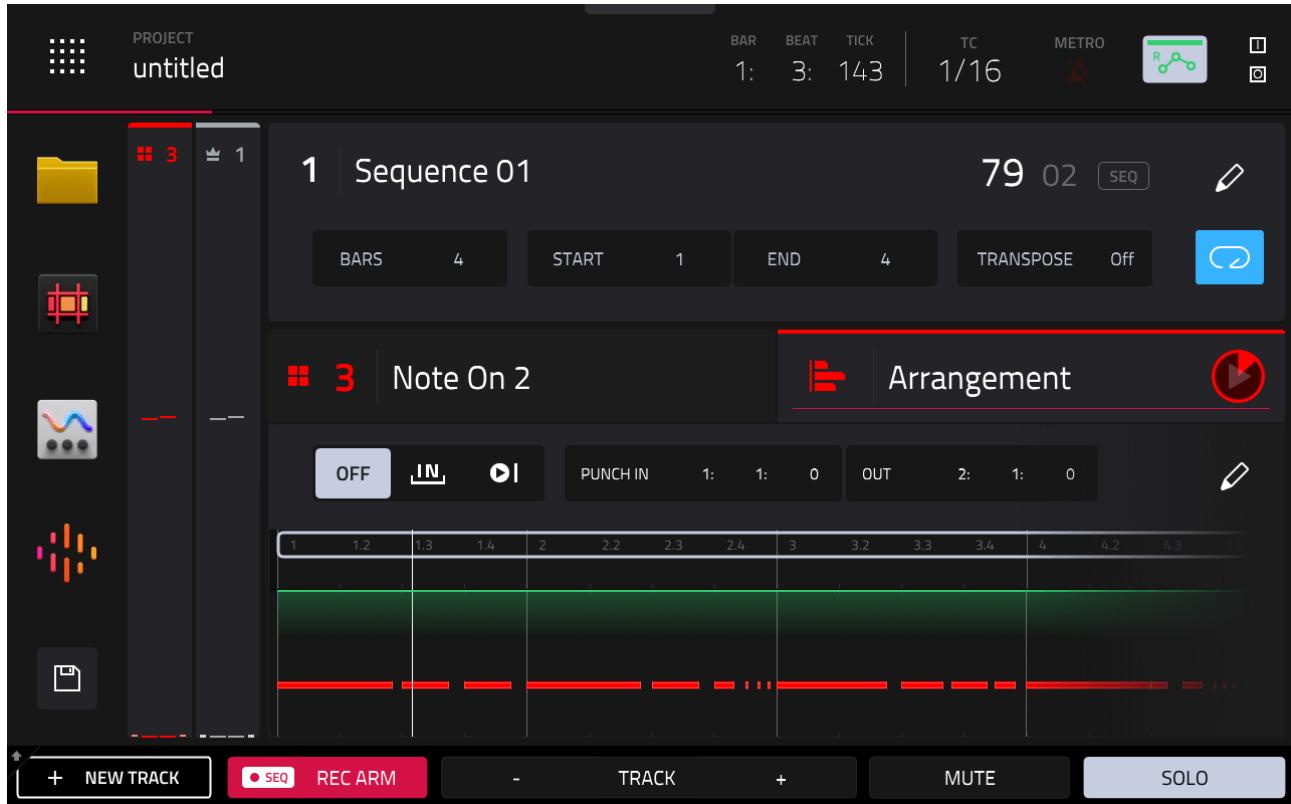


This will perform a '**Duplicate Track**' function that duplicates everything from the current track **except** any MIDI events. Name the duplicated track **Note On 2**.

From the **C01** folder, locate the pattern file, **Note On 2.mpcpattern** (if you can't see it, make sure the **MIDI filter** is selected):



Hit **LOAD** to load the pattern to the current track and go to [**MAIN**] > **Arrangement** Tab:



Ensure that **SOLO** is enabled and hit [**PLAY START**] and you'll hear a mini 'performance' of the break, where I've 'played' the pads at varying durations, including some note repeats at the end.

Load up the project **C01 Note On vs One Shot Loops.xpj** to hear my version.

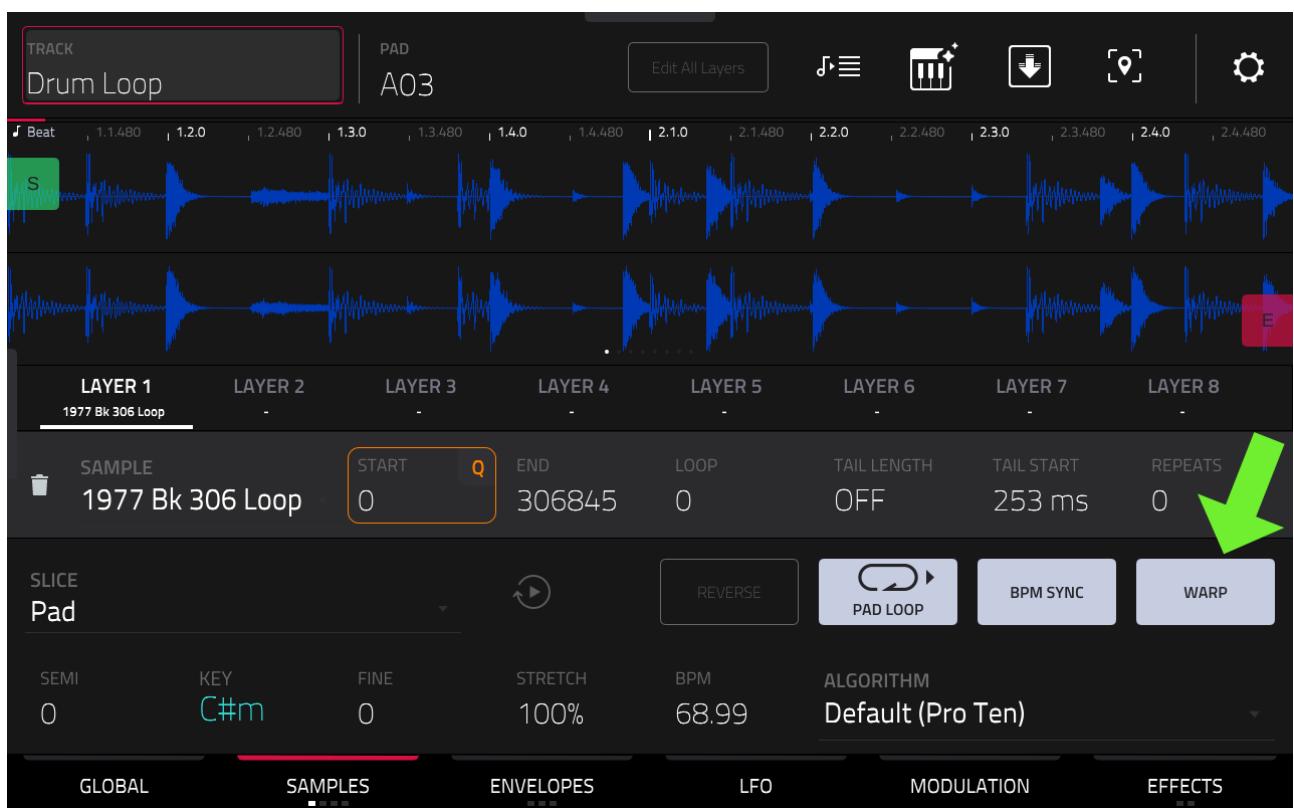
MANIPULATING THE TEMPO OF LOOPS

So we have two breaks recorded from the same drum kit, but after looping that second one we found its tempo (**68.99 BPM**) was very different to the first one (**79.02 BPM**). If we want to use them as loops together in the same sequence, we'll first need to match their tempos.

Load up the project file **C01 Tempo Manipulation.xpj** and select sequence 1 (**'No Warping'**). This is a 79.02 BPM sequence which plays our 79.02 BPM break first, then switches to our 1977 BK 306 Loop break, which has a tempo of 68.99 BPM.

Hit [**PLAY START**] and as you'd expect the first break plays fine as its inherent tempo (79.02) matches the sequence tempo; however, the second break, at 69.99 BPM, is just too slow for the sequence.

Now select **sequence 2 ('Warping')**. This is the exact same performance, but this time the 68.99BPM break fits perfectly in time with the 79.02BPM sequence. I achieved this by using a slightly modified copy of pad [A02] - go to **TRACK EDIT > SAMPLES** and select pad **[A03]**.



As you can see it's the same **1977 Bk 306 Loop** sample that we have on pad [A02], but this time we have enabled **WARP**.

Press and hold pad **[A03]** and you'll hear that our break has clearly sped up - compare it to the original on pad [A02]. We met warping in Section B when we used it to perform live stretching of our 'Speech' audio track. In our current example, the MPC is performing a real-time 'stretch' of the break so that its tempo of 68.99 BPM is sped up to match the sequence tempo of 79.02 BPM.

In addition to the WARP button, it's important that **BPM SYNC** is also enabled (although this is always enabled automatically by default). With this turned on, warping will always automatically 'warp' your loop to the current sequence tempo.

Finally, make sure the **ALGORITHM** field is set to **Pro Ten**; this is the best warping algorithm to use when the aim is to just change tempo of a loop (and not change the pitch of your break).

Listen carefully to the warped break on **[A03]**; while it's now certainly 'in time' with out sequence, It's clear that warping has some impact on the sonic quality of the break, it's lightly glitchy in places and there's some loss of attack in some of the snare transients.

Select **sequence 3 ('Speed Up')**. Here I've made a copy of the 79.02BPM break on pad [A01] to pad [A04] and set this copy to 'warp'. The sequence tempo here is 103.02, so both breaks are now being stretched to fit in with the faster sequence tempo - hit **[PLAY START]** to hear the results. Again, some degradation for both breaks, but mostly decent enough.

Finally select **sequence 4 ('Slow Down')**. Here the sequence tempo was set to 74.02BPM and the degradation is much worse, especially for the 79BPM break – that first kick is terrible!

PROS AND CONS OF WARPING

Warping is a 'dynamic' time stretching process, so while your sequence plays it has to continually manipulate your audio samples to match their tempo to the current sequence tempo. It's a great way to quickly match up loops of different tempos, but audio quality almost always suffers, especially when slowing things down. And as it's a 'real time' process, it can be quite CPU intensive, particularly when warping many samples in a project, and Akai do specifically warn against overusing this feature.

We know from Section B that warping is really convenient when you just want to quickly 'tweak' the length of an audio file to subtly stretch it out, and we used it to great effect when filling the gaps in our 'Speech' audio track.

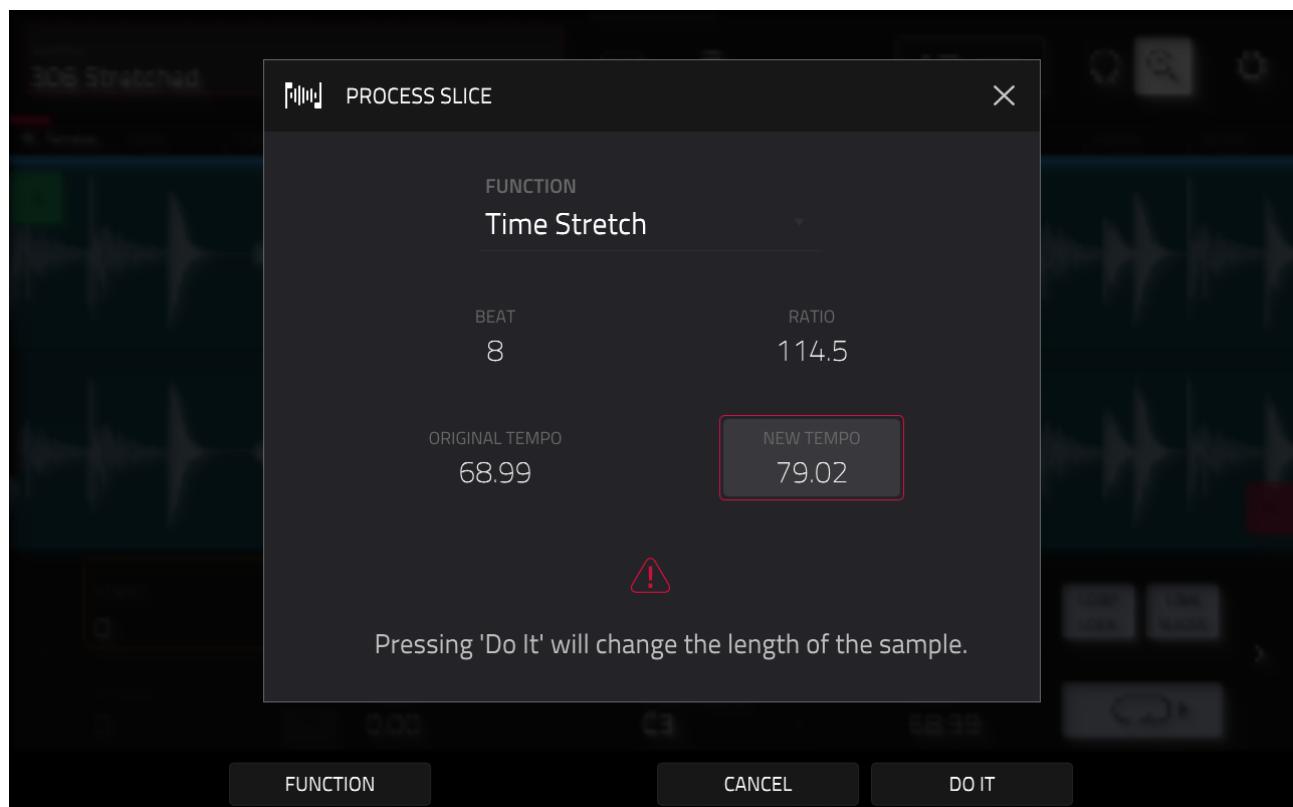
But in the most common usage within a composition, where you just want to permanently change the tempo of a break, another option to consider is an 'offline' tempo change as these have no CPU impact whatsoever, and can often produce better quality results.

WARPING VS TIME STRETCH

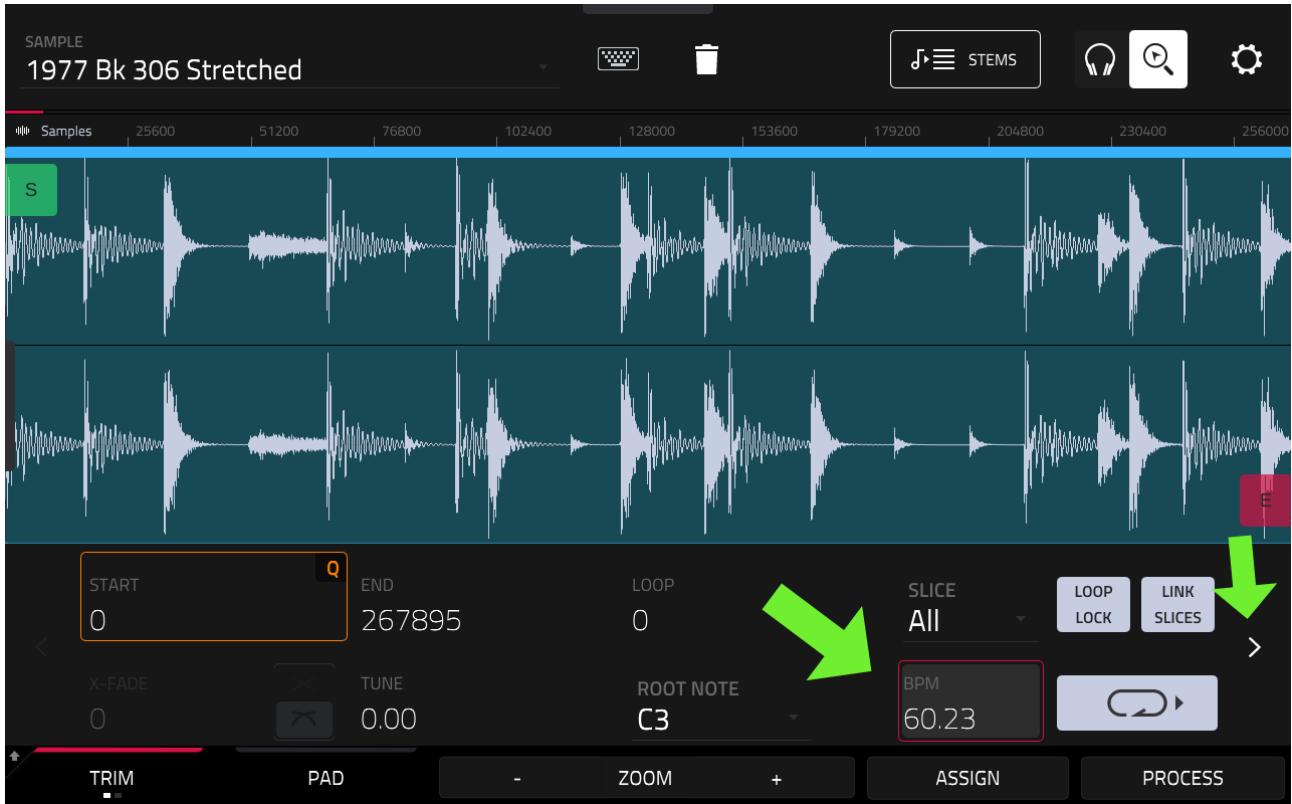
Go to **SAMPLE EDIT > TRIM** and select the **1977 Bk 306 Loop**. Hit **PROCESS > COPY** to make a duplicate copy of this looped break. Call it **1977 Bk 006 Stretched**, hit **DO IT**.

After copying you'll be taken back to the original sample, not the copied one, so make sure you now manually select the newly created '**1977 Bk 06 Stretched**' sample before proceeding.

Now go to **PROCESS > Time Stretch**:

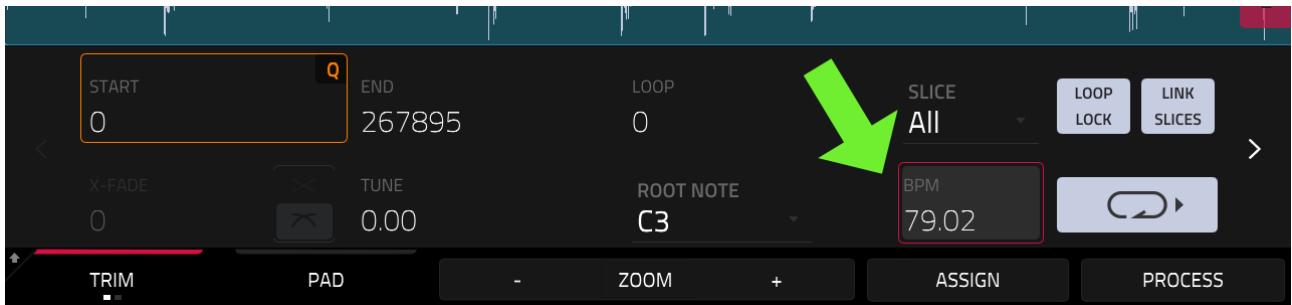


Check that the '**ORIGINAL TEMPO**' is correctly showing **68.99** (there's a bug that means it's sometimes incorrect) and set a **NEW TEMPO** to match the tempo of our sequence, **79.02**. Press **DO IT**.



Hit pad [A16] to preview the newly stretched, '79.02 BPM' break. You should hear that the audio quality is better than the 'warped' version of this break – but let's test it out side-by-side.

After time stretching a loop the MPC often seems to set an incorrect tempo in the BPM field, despite having literally just stretched it to a known and specific tempo! So you'll likely see a BPM of 60.23 – to correct this, use the DETECT method or manually override the BPM yourself. After using DETECT, the loop gave me the correct tempo of 79.02:



Go to [MAIN] and select **sequence 5, 'Warping vs Time Stretch'**. Here I've already assigned my own copy of the stretched 1977 Bk 03 break to pad [A13].

Hit [PLAY START] and listen to the two versions of the 68.99 BPM break playing at 79.02 BPM. What do you think? The warped version plays on the first two bars, this is just a bit more glitchy in places, and it seems like some of the snare transients are a little soft.

The time stretched version covers bars 3 and 4; it does seem to suffer from some subtle metallic artefacts that are not present in the warped version, but the transients are definitely sharper.

CHANGING TEMPO BY TUNING

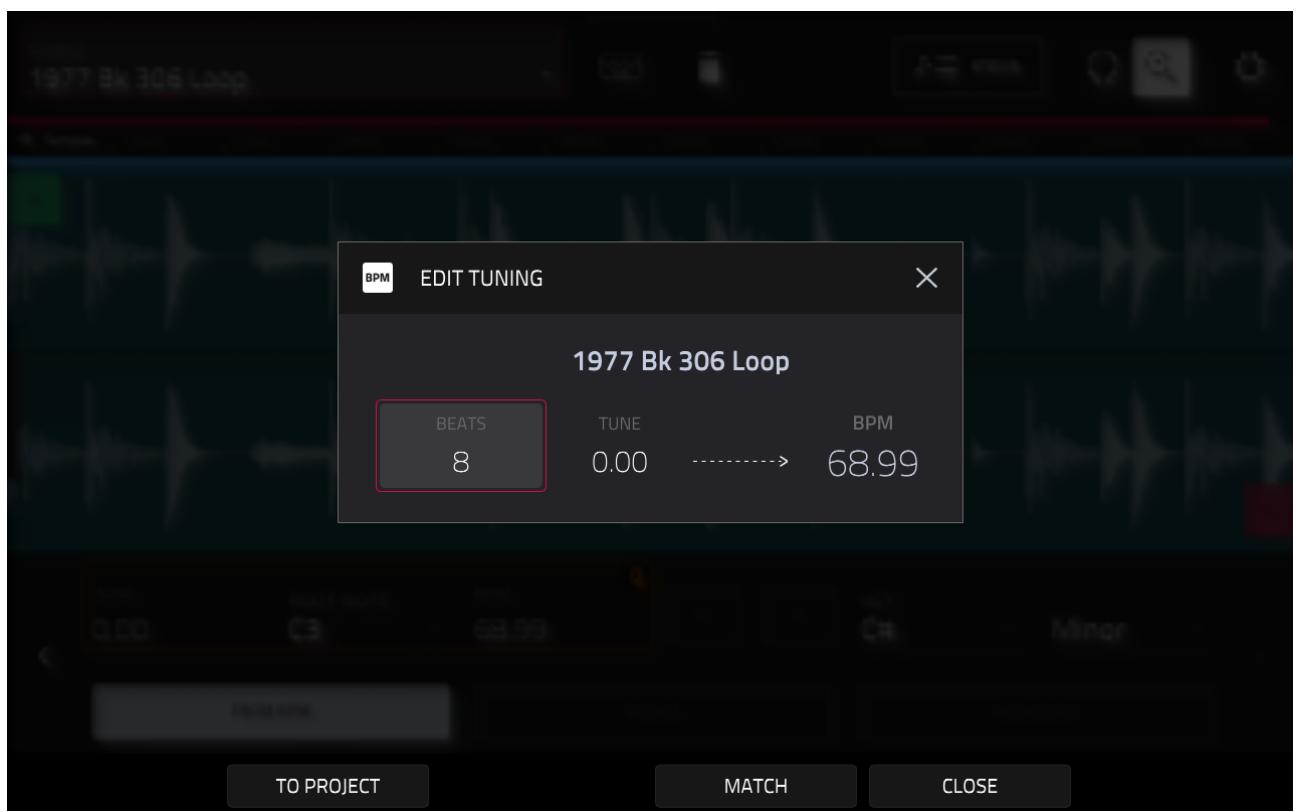
Another way to change tempo is to just change the 'tuning' (or 'pitch') of a sample. Tuning up will increase the tempo of your loop, tuning down decreases the tempo.

Go to **SAMPLE EDIT**, select the original **1977 Bk 306 Looped**, hit **PROCESS > COPY** and rename the copy to **'1977 Bk 306 Tuned'**.

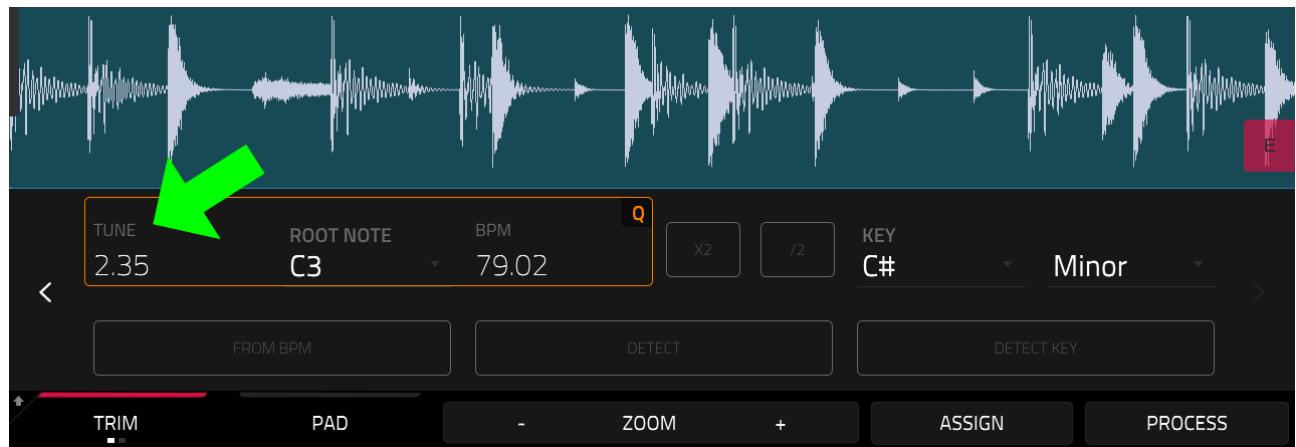
Go to the second **SAMPLE EDIT** screen and hit **FROM BPM**:



Hit **MATCH**:



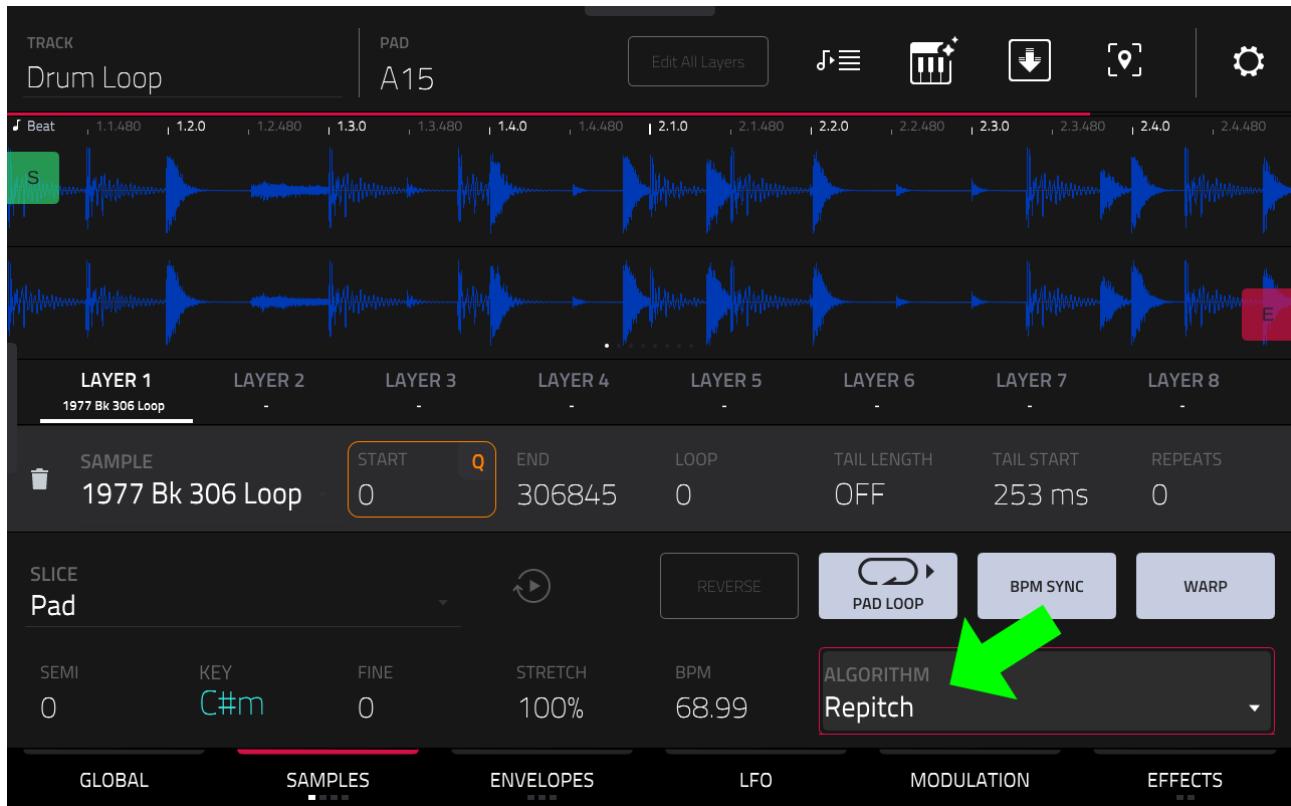
The loop's has now been re-tuned to a **TUNE: 2.35** which speeds up the tempo to the required 79.02 BPM.



Press pad **[A16]** to preview the tuned version of the loop. As you'd expect, tuning up a break makes the drums sound different, so unlike warping or stretching (which aims to leave the inherent sound of the drums unchanged), we are changing the pitch and therefore the overall tone and timbre of the drums. For a melodic sample, re-tuning has the even more obvious impact of changing the actual musical key of the sample!

In **[MAIN]** select sequence 6, '**Tune vs Repitch**'. Here I've added my copy of our recently 'tuned' break to pad **[A14]**, and on pad **[A15]** I've added a warped version of the original 1977 Bk 306 Loop sample.

Select pad **[A15]** and go to **TRACK EDIT > SAMPLES:**

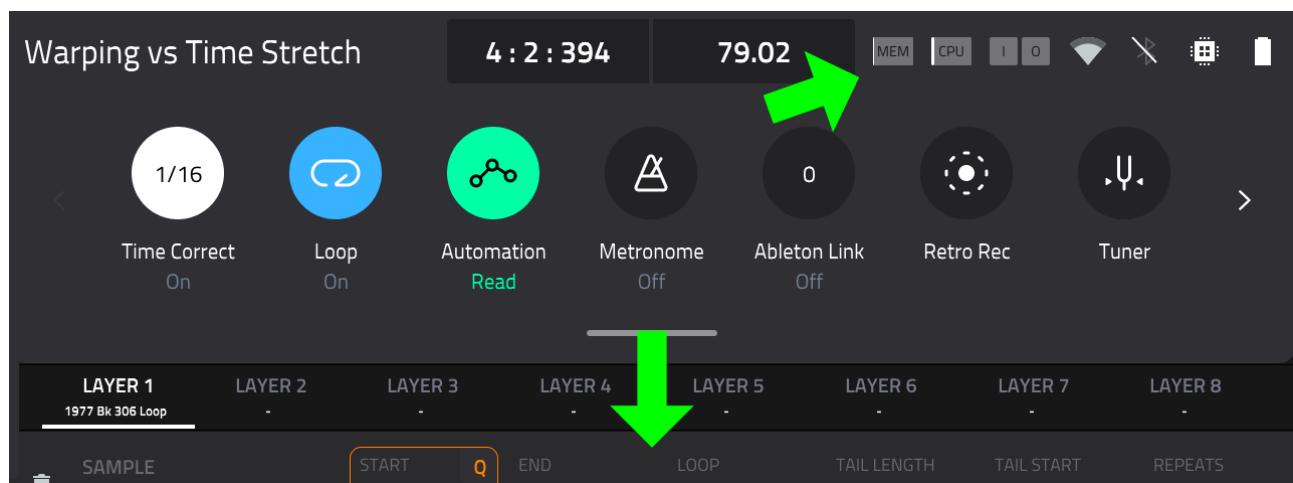


Notice that while this sample is warped, the algorithm has been changed from Pro Ten to **Repitch**. Hold down [A15] to listen – the break is still being 'warped' to 79.02 bpm, but this time the MPC is performing a dynamic 'retuning' of the break via the '**Repitch**' algorithm. Unlike the Pro Ten algorithm which aims to change the tempo of a sample without impacting its timbre, the Repitch algorithm happily changes pitch to achieve the tempo change, and hence changes the timbre of the sample.

Hit [**PLAY START**] to compare the two different 'tuned' versions within our sequence. From a sonic perspective there doesn't really seem to be any difference between the two options, they sound identical.

If you have lots of samples being warped then you do of course come back to Akai's warning about CPU issues; offline tuning and stretching will have no additional impact in this respect.

Remember, you can monitor CPU usage using the 'pull down menu' at the top of most screens.



Single tap the '**MEM CPU**' area to bring up the **SYSTEM RESOURCES** dialog:



Excessive CPU usage can lead to crackling, popping and sluggishness. Your MPC might even freeze up or potentially even shut down, so it's definitely worth keeping an eye on this and at the first sign of any issues, start thinking about ways you can reduce your CPU usage. (see Section D for more tips).

So which 're-tuning' option is best? Sonically, there's no difference, CPU is likely more impacted by 'RePitch' warping, but on a small scale it's unlikely to be a problem. Another advantage of warping is that we can dynamically change the tempo of a sequence and your sample will adapt its tempo in real time, something not possible with a non-warped, 'tuned' sample.

Select sequence 7, '**Dynamic Tempo**'. Here I've created a sequence that *dynamically* changes the actual sequence tempo over time, the first 4 bars use Repitch warping, the second four bars use Pro Ten.

ADDING TEMPO CHANGE EVENTS

The sequence tempo was changed using **Tempo Events**. Go to [**MENU**] > **LIST EDIT** and select the **TEMPO** button:

#	TIME	PAD/NOTE	LENGTH	VELOCITY	MOD TYPE	VALUE	PROB	RAT
1	001:01:000	♫♪			Sequence Tempo	79.0 bpm		
2	001:02:000	♫♪			Sequence Tempo	82.0 bpm		
3	001:03:000	♫♪			Sequence Tempo	85.0 bpm		
4	001:04:000	♫♪			Sequence Tempo	89.0 bpm		
5	002:01:000	♫♪			Sequence Tempo	95.0 bpm		
6	002:02:000	♫♪			Sequence Tempo	100.0 bpm		
7	002:03:000	♫♪			Sequence Tempo	106.0 bpm		
8	002:04:000	♫♪			Sequence Tempo	119.0 bpm		
9	003:01:000	♫♪			Sequence Tempo	109.0 bpm		
10	003:02:000	♫♪			Sequence Tempo	101.0 bpm		

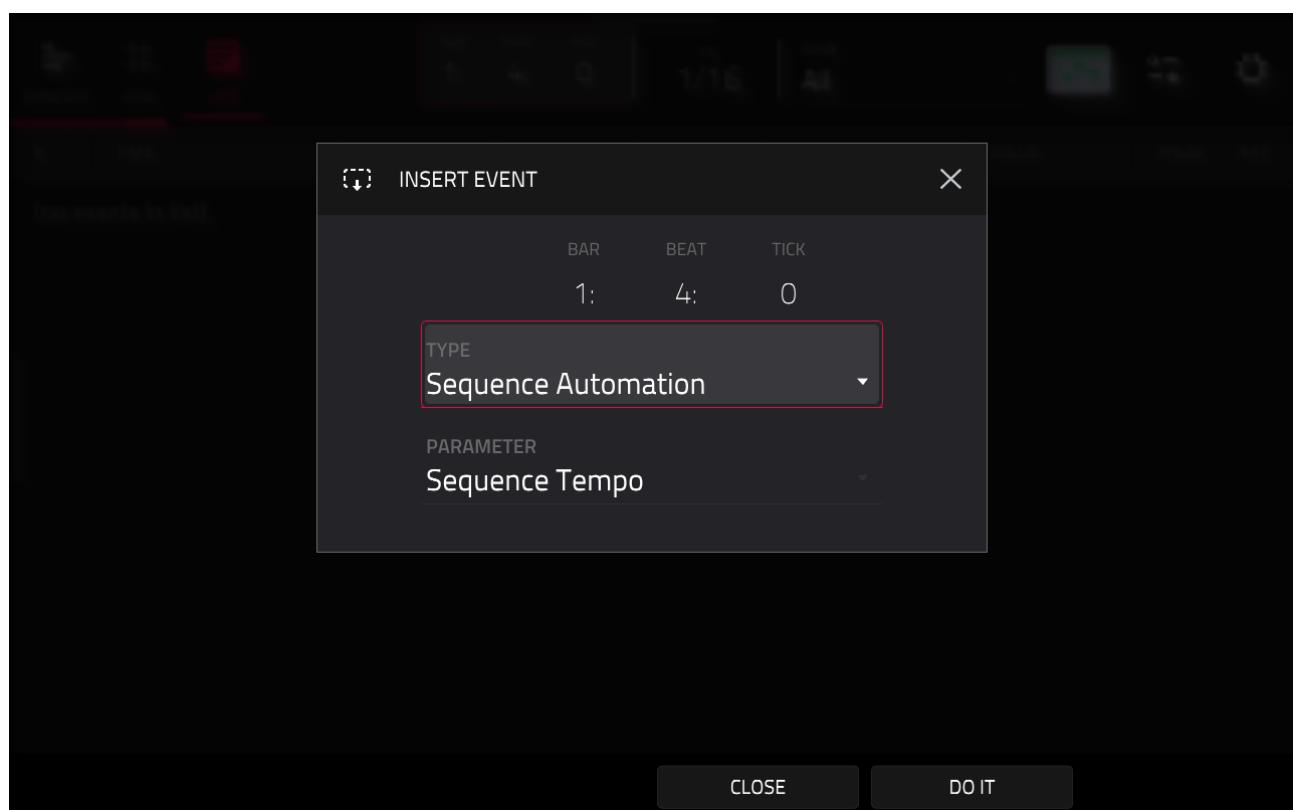
EVENTS TEMPO INSERT DELETE NUDGE

In the TEMPO screen you can insert new tempo events as well as edit existing tempo events. The events themselves are very basic - you can edit the 'Time' using the **NUDGE** button (just like any event in LIST EDIT)

and you can change the tempo of the event – everything else is fixed and cannot be edited.

While tempo events may seem like standard automation, they are quite unique in as much as they cannot be 'written' to your sequence like normal automation events; for example you cannot write tempo changes in real time using a Q-LINK, which is a real shame as it would make adding gradual tempo changes a breeze.

Tempo events also cannot be copied, so in LIST EDIT you must insert each event individually, so generally speaking this makes LIST EDIT most suitable for managing infrequent or very 'surgical' tempo events. The quickest way I've found is to first tap on the sequence **time counter** and set your preferred insert time, then hit the '**INSERT**' button:



The time will be pre-selected for you; just hit **DO IT** to insert the tempo event. Now turn your (DATA WHEEL) to select the next insert time (hold down [**SHIFT**] to move in T.C. increments) and then press **INSERT** again. You can insert a lot of events quite quickly this way using muscle memory repetition.

Each event is inserted at the current sequence tempo, so the next stage is to go through each event, tap on the tempo parameter and change using your (DATA WHEEL).

The other way of adding tempo changes is via the automation lane in **GRID VIEW** – the best option is actually the expanded split screen view in the **ARRANGER** as this gives you more vertical room:



In theory this should make it easier to add smooth, gradual tempo changes but unfortunately as you can see, the vertical 'scale' on the AUTOMATION lane is ridiculously large and covers the tempo range 0-1000bpm, so it's difficult to draw in very 'subtle' tempo changes.

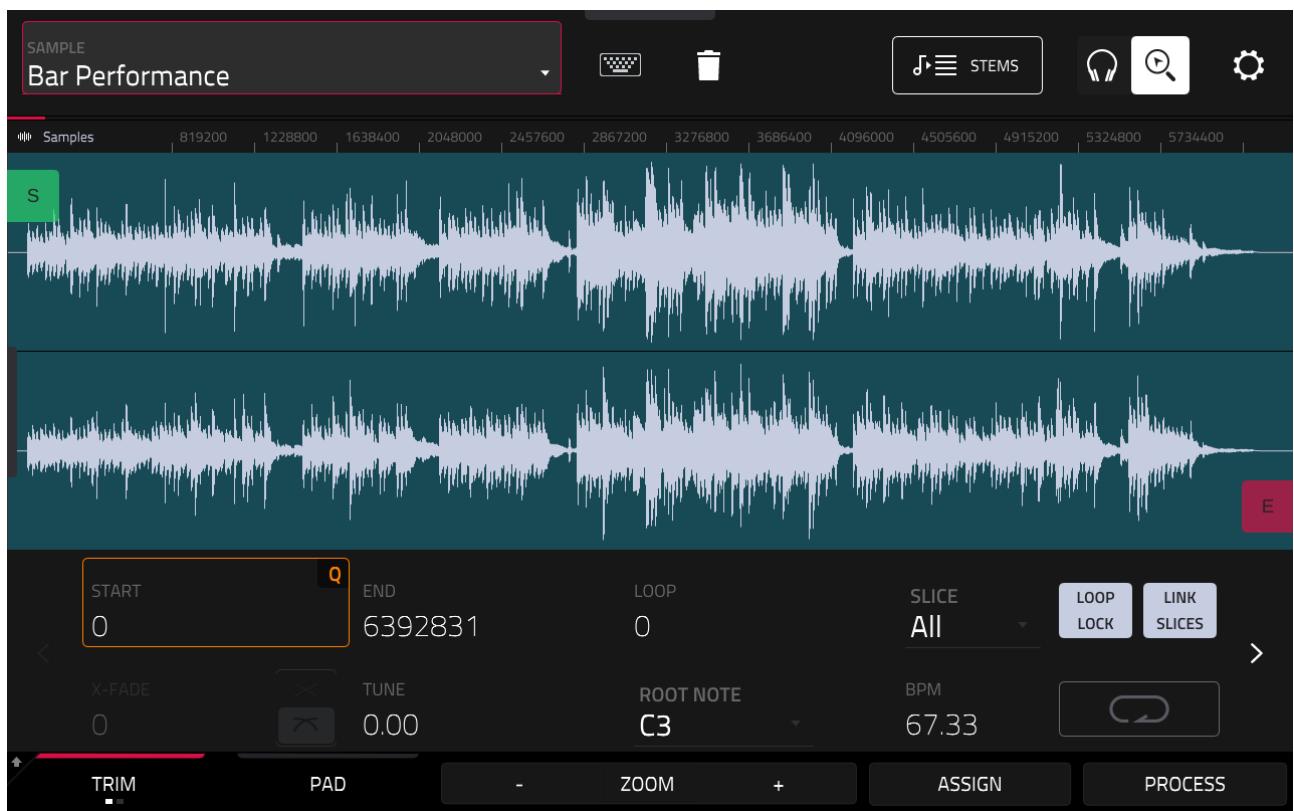
Select **sequence 8 - Grid View Tempo Changes**. Here I've tried drawing in similar changes to those found in sequence 7, but it's difficult to obtain any accuracy. In **sequence 9** I attempted drawing a more gradual linear drop - probably a combination of GRID and LIST VIEW will be required in many cases.



LOOPING MELODIC SAMPLES

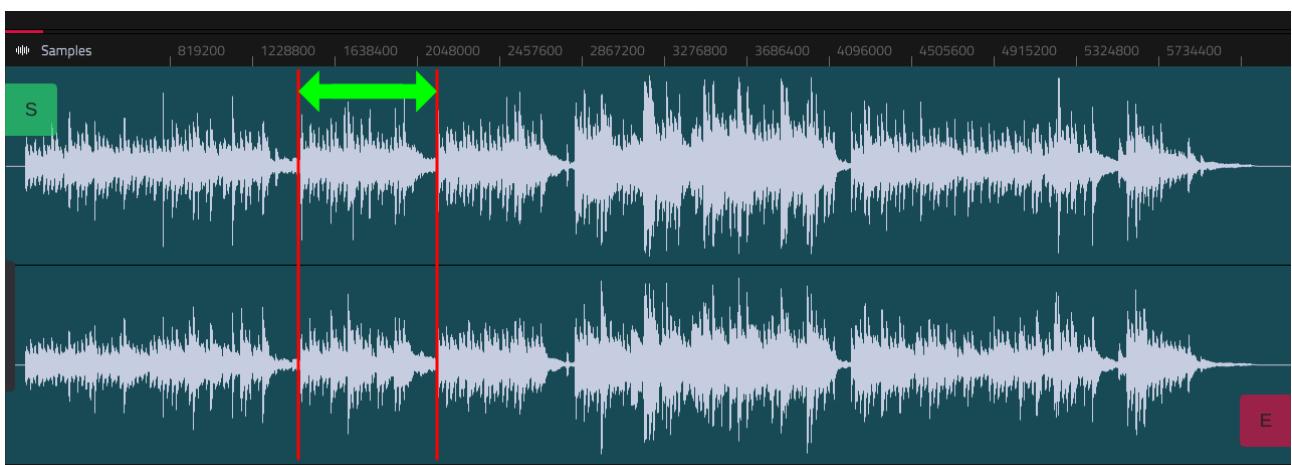
Looping samples that contain only melodic rather than percussive elements can sometimes be a little more challenging, especially as transients are often less 'defined' so it's sometimes difficult to settle on where exact start and end points are.

Go to **BROWSER** and in the **C01** folder load the project file '**C01 Melodic Samples.xpj**'. This loads some of the breaks we looped previously, along with a new melodic sample called '**Bar Performance**'. Go to **SAMPLE EDIT** and select it:



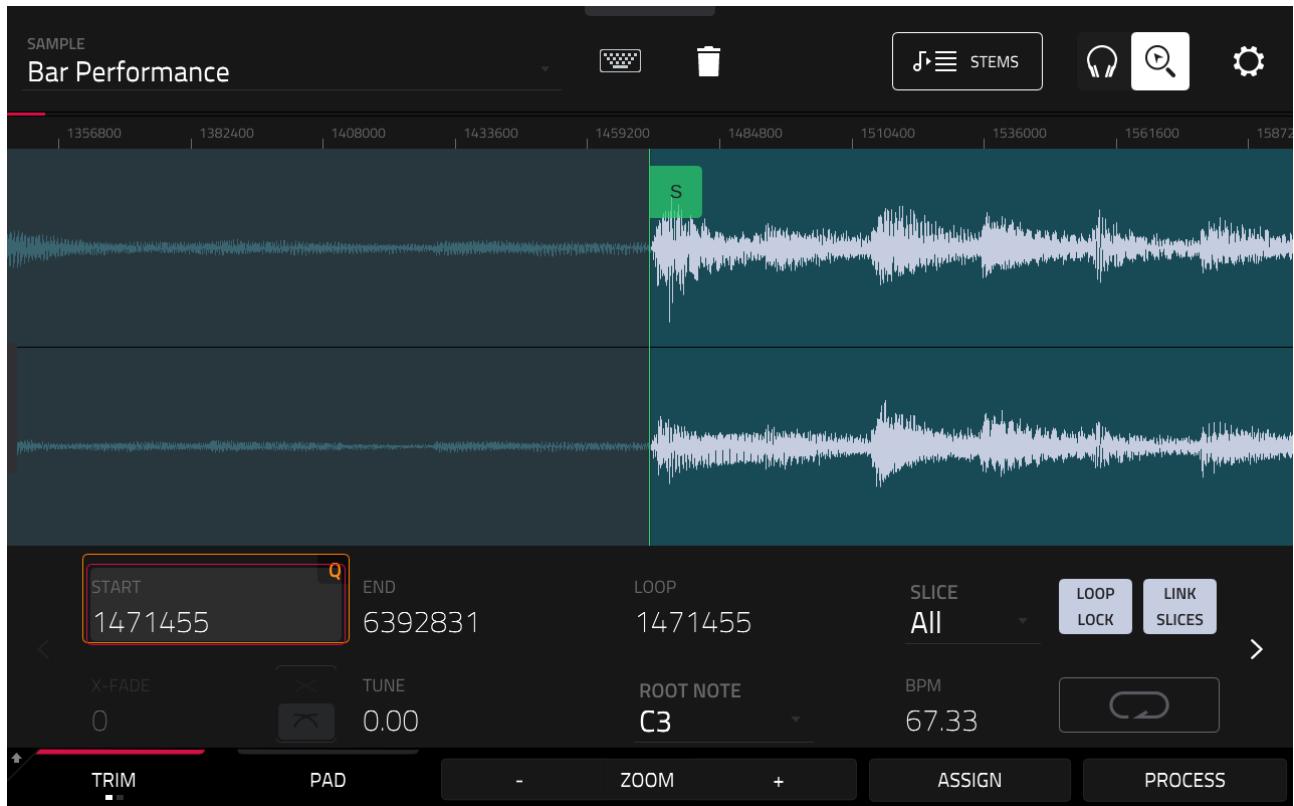
Hit pad [**A01**] to 'one shot' preview the entire sample (it's a snippet from a piano performance created by **Sascha Ende** – see [Appendix C](#) for more information). Clearly there's some lovely haunting piano loops that we can extract from this!

Let's loop this four bar section here:

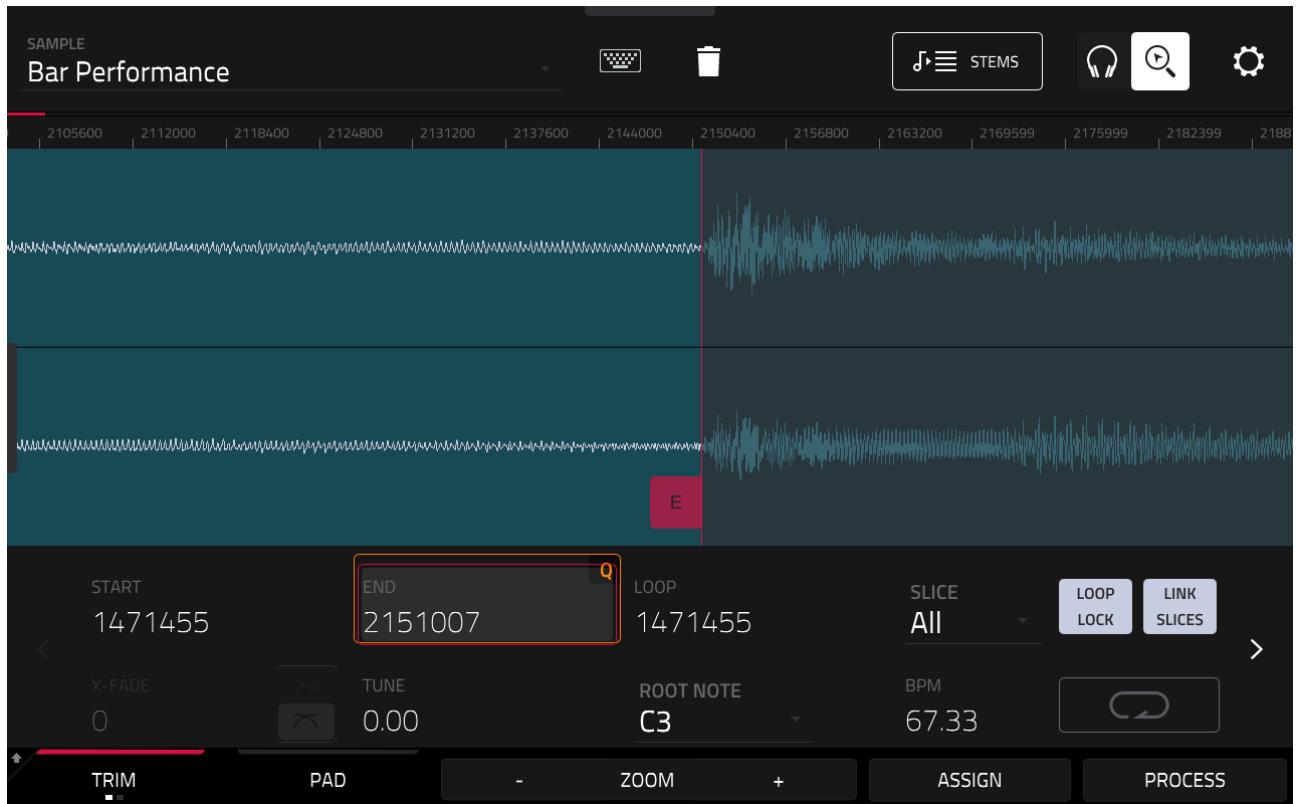


The procedure itself is exactly the same as when we looped drum breaks. Make sure [**SHIFT**] > **O SNAP** is enabled. Select [**Q-LINK BANK 1**], tap on the **START** point to set the zoom focus and use **ZOOM+** to zoom in a little.

Adjust the **START** point initially using (Q-LINK 13) and then (Q-LINK 9), (Q-LINK 5) and finally (Q-LINK 1) to make the final adjustment. Set a **START** of **1471455**.

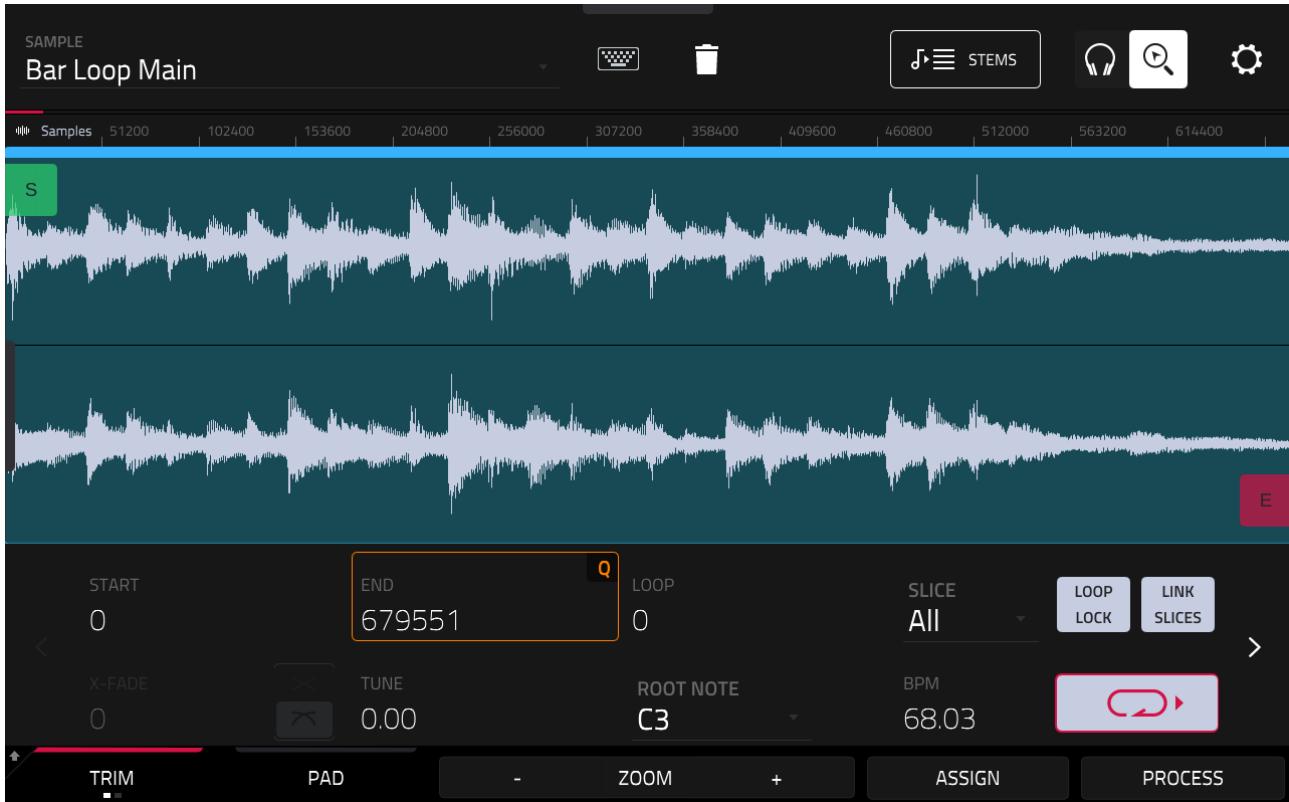


Now select [Q-LINK BANK 2] to set **END: 2151007** – the find the initial END point adjustment is quickest by dragging the **E** on the touchscreen:



Hit pad [A16] to preview the piano loop. As before, let's **PROCESS > Extract** to make a separate truncated copy of the actual loop; call it **Bar Loop Main**. Single tap on the **LOOP** button to set this as a forward loop.

Go to the **SAMPLE EDIT** 'detect' screen, hit **Detect > Detect** to double check the tempo, **68.03 BPM**.



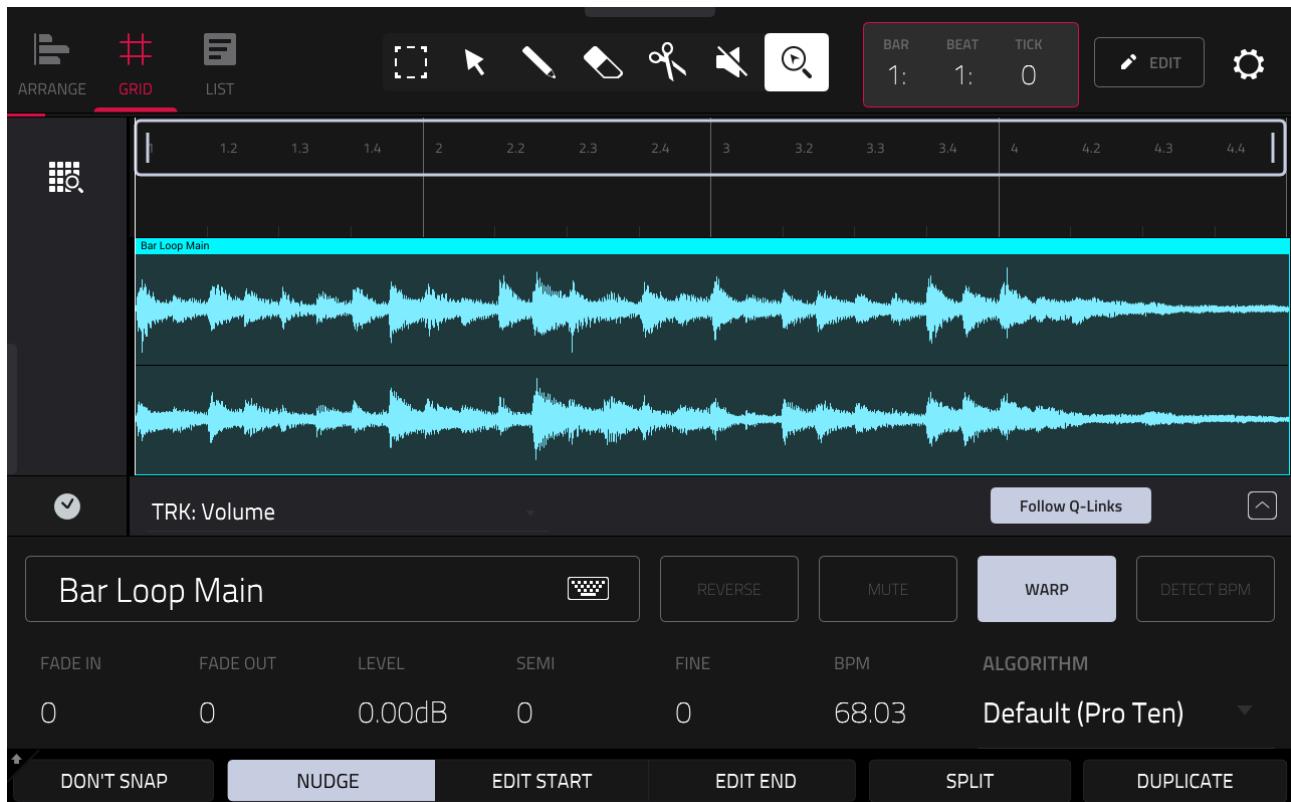
ADDING LOOPS TO AUDIO TRACKS

An alternative to DRUM tracks is to use AUDIO tracks to host your loops so you are no longer relying on MIDI events to playback audio.

In [**MAIN**], select sequence 1 and hit [**PLAY START**] – we have the 'note on' style break from earlier in this chapter playing at 79.02 BPM.

Select track 2 which is an **AUDIO** track called **Piano**. Let's add our piano loop to this track. Double tap the main tab to enter **EDIT AUDIO** (or tap on the **EDIT AUDIO** button).

Select **BROWSE SAMPLES**; choose the **Bar Loop Main** sample and leave '**Place At Start**' enabled. Hit **DO IT**:



Audio tracks will warp the audio by default, so that 68.03 BPM melodic loop will now playback at 79.02 BPM. Hit **[PLAY START]** to listen to the two tracks together. You can hear my version on **sequence 2**.

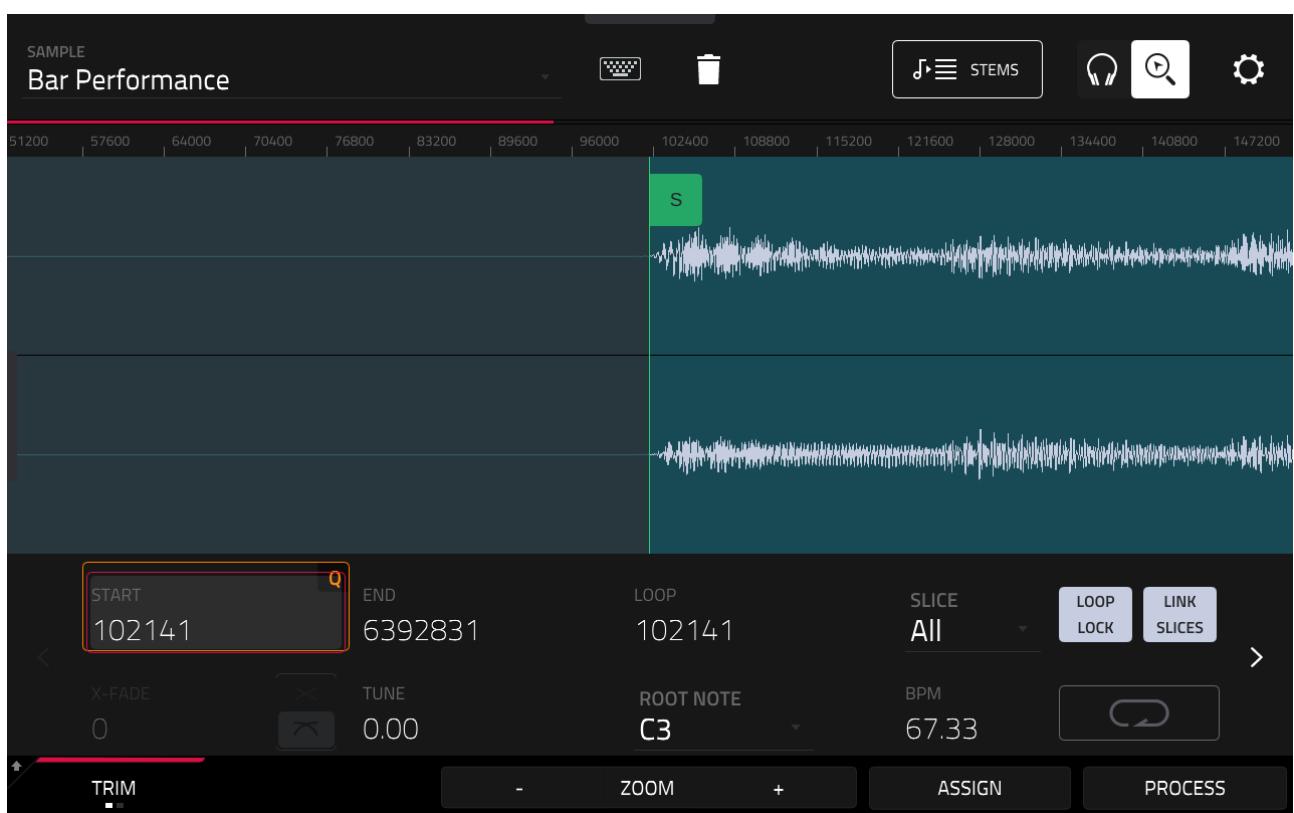


Notice that when you stop the sequence and then press [PLAY] again, the audio track immediately continues playing, while the drums don't start until you reach the next MIDI event. This is one advantage of using audio tracks over MIDI

DEALING WITH PROBLEMATIC LOOPS

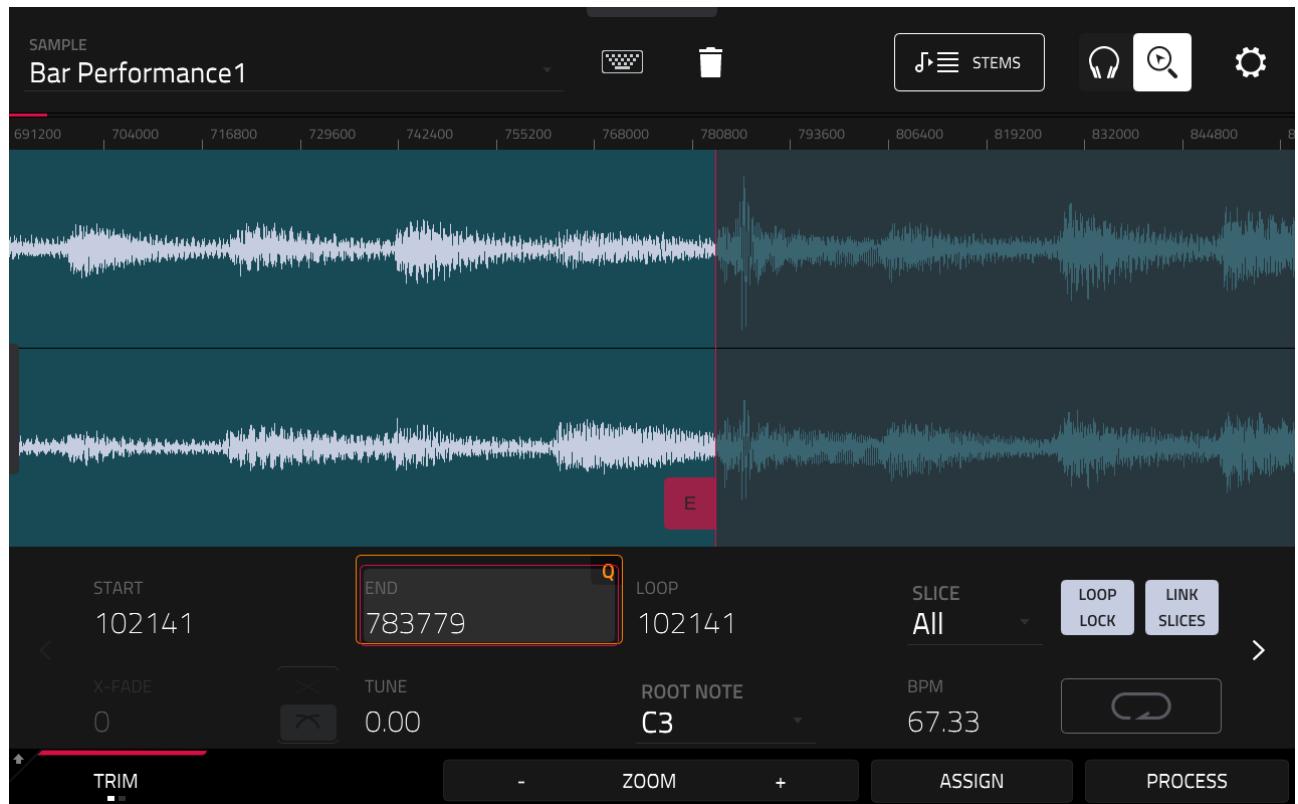
Sometimes you'll come across samples that present a bit more of a challenge. Let's try looping a different region of the original '**Bar Performance**' sample.

Go to [**SAMPLE EDIT**], select **Bar Performance** and change the **START** point at **102141**:



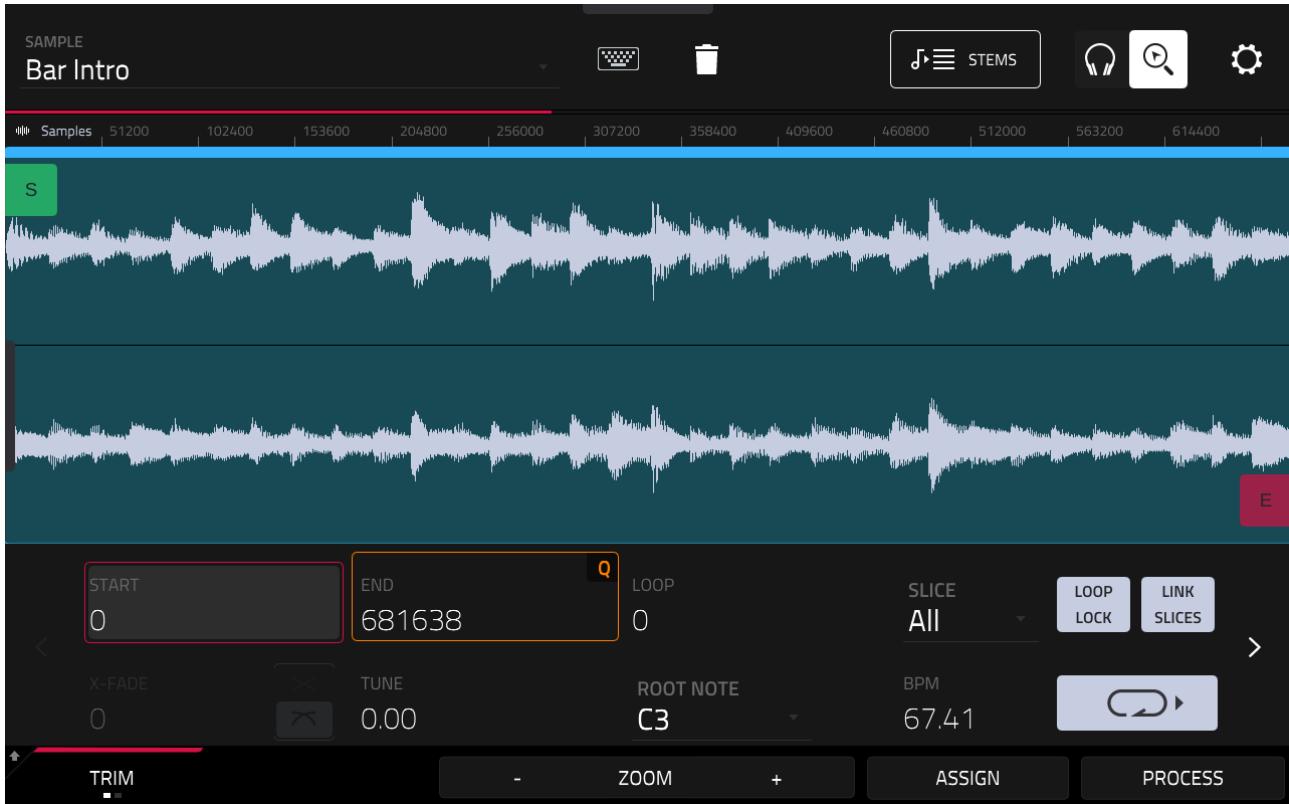
Press and hold pad [**A05**] to preview the start point. Always be conscious of differentiating between editing 'clicks' compared to sounds on the recording itself - for example at the start here there is a noise as he initially hits the first piano note, this is part of the recording, it's not a looping glitch.

Repeat for the **END** point, setting this to **783779**:



Use pad **[A08]** to listen to the portion of audio after the end point, it should be clean and click free. Use pad **[A07]** to check the audio leading up to the END point. Preview the loop using pad **[A16]**.

Go to **PROCESS > Extract** and call the extracted sample '**Bar Intro**' – set it as a 'forward' loop and use **DETECT** to set a more accurate BPM:



You can probably hear that despite us creating what seems like all the makings of a decent loop, the point at which the sample jumps back to the beginning is not particularly smooth.

This often happens when looping back to the absolute beginning of a musical performance as that initial part of the song is often more 'bare'. Once we reach the loop point the whole mix is a lot more busy, with sustained note tails and noises in abundance – then suddenly we're jumping back to that more 'stark' beginning.

This is not a problem though because in the next chapter we're going to look at a more creative way of using loops that avoids all common looping issues.



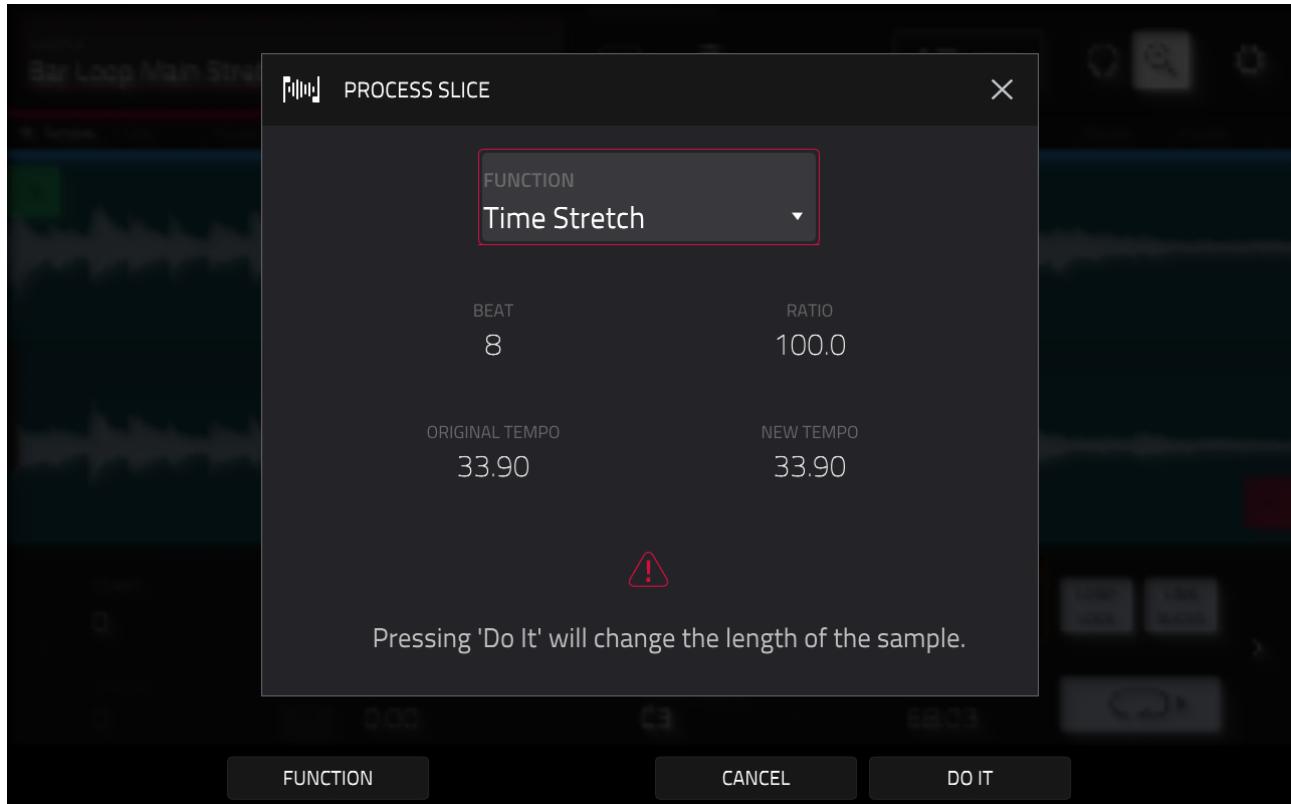
Don't forget, small glitches in samples are often masked by other elements of your final composition - if you've ever listened to a 'soloed' acoustic drum or guitar performance you'll normally hear all sorts of noises that just can't be heard within a full mix. Don't let little glitches get in the way of your creative flow, there's almost always a way to deal with any issue like this.

TIME STRETCHING MELODIC LOOPS

As with drum loops we can also try alleviating the CPU load by performing an 'offline' process to change the tempo rather than relying on warping. This is normally the preferred option if the ultimate intention is to chop a loop simply because we would normally want to avoid having to individually warp lots of tiny chopped samples across multiple pads.

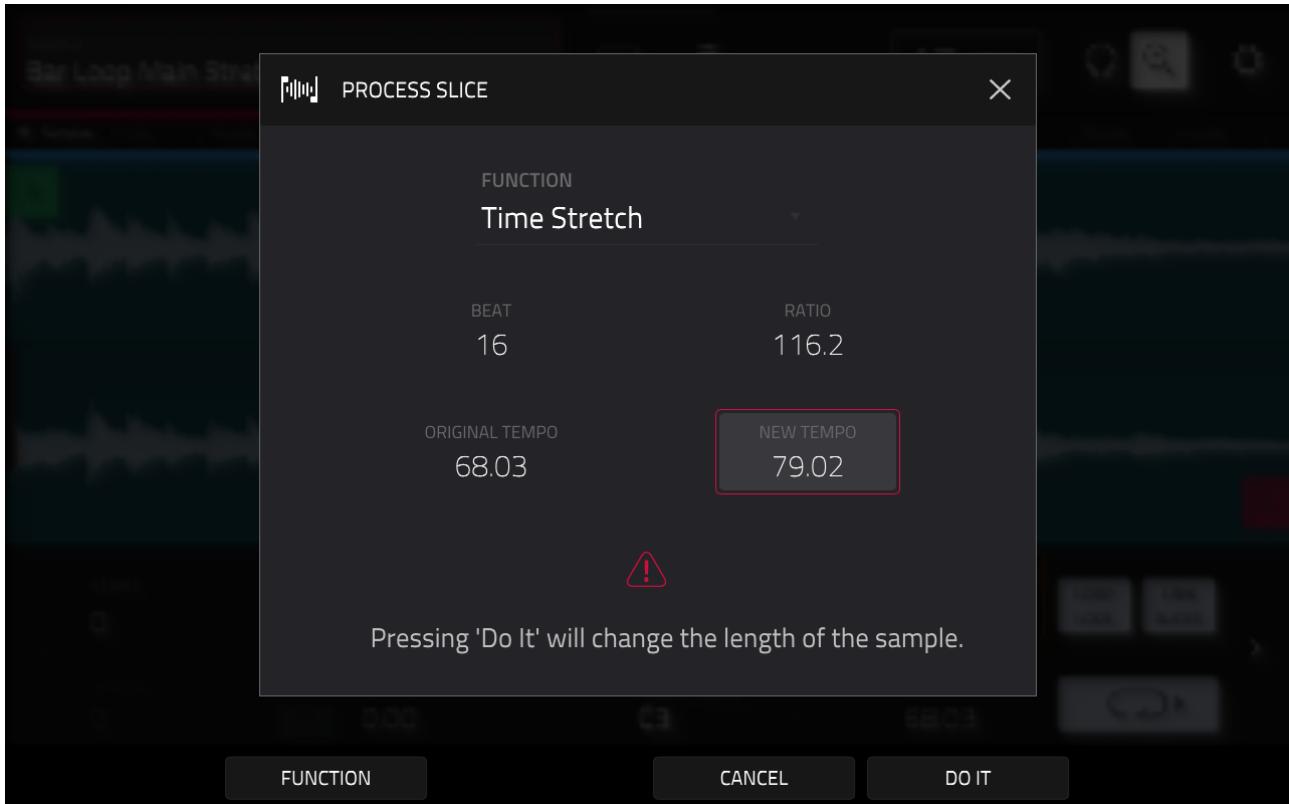
In [**SAMPLE EDIT**], use **PROCESS > Copy** to create a copy of the **Bar Loop Main** sample and call it **Bar Loop Main Stretch** – select it and make a mental note of its tempo (68.03).

Go to **PROCESS > Time Stretch**:



So the BPM here is clearly wrong, but for a start, the BEAT' parameter is incorrect, this is a 16 beat (4 bar) loop, so change **BEAT** to **16**.

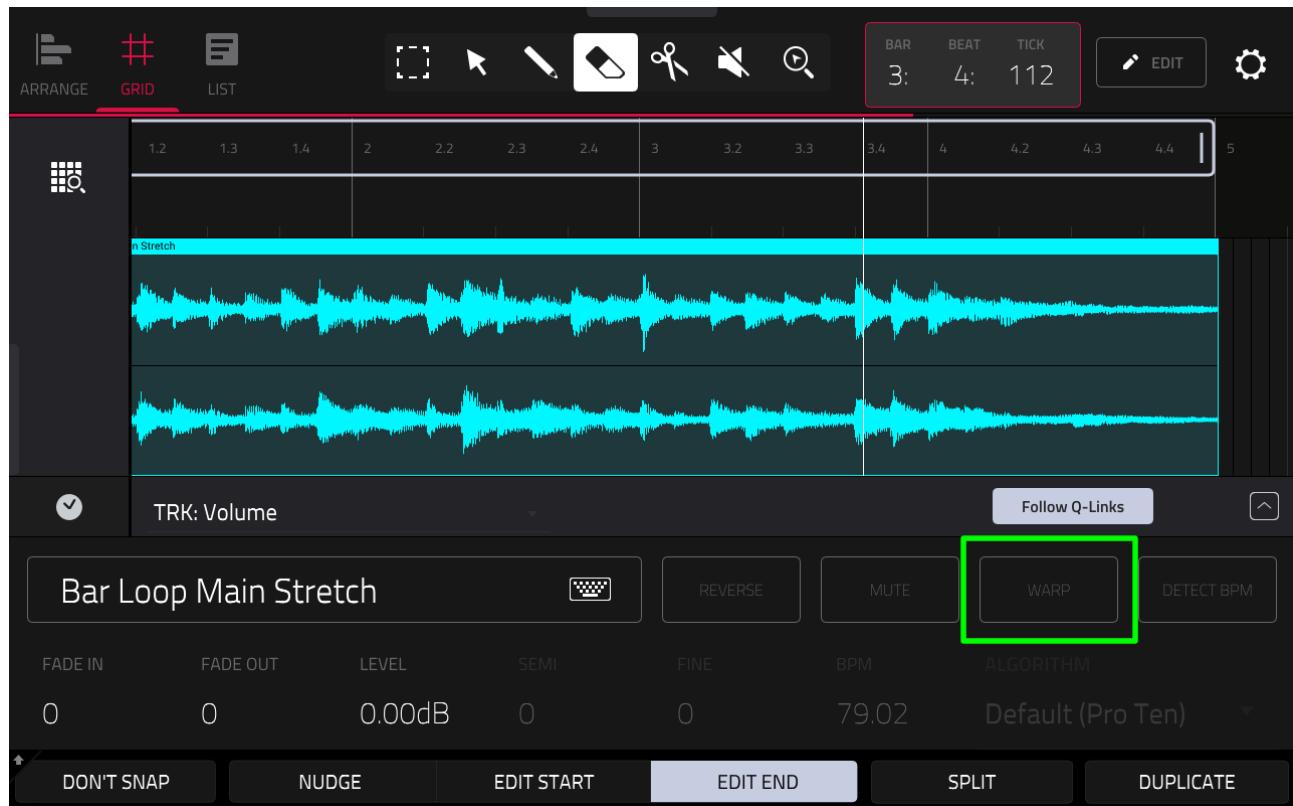
Now it's not entirely clear why the **ORIGINAL TEMPO** is showing as **67.81** and not **68.03**, but I always manually change this to match the 'correct' BPM as shown in the TRIM screen. Set the **NEW TEMPO** to **79.02**. Hit **DO IT**.



Again, the MPC is going crazy with the tempo detection, despite us having just time stretched this loop to 79.02. My advice is to just override the **BPM** parameter here and manually set it to **79.02**.



In [MAIN], select sequence 3 ('**Time Stretched**'). Select track 2 (currently blank) and use **EDIT AUDIO** to insert our new **Bar Loop Main Stretch** loop to this track - as this is already time stretched to the sequence tempo of 79.02, make sure you turn off **WARP**:



Hit [**PLAY START**]. Switch between sequence 2 and sequence 3 (or use my version of sequence 3 on sequence 4).

Use the **Solo** button to isolate the Piano track if need be. to compare the two audio tracks. The time stretched sample is noticeably better quality, but it has developed an annoying glitch at the very end of the sample - but as with the annoying loop glitches from earlier, we can easily workaround these issues as one of the handy 'by-products' of chopping our loops.

Now repeat the time stretching process for our '**Bar Intro**' loop to create a 79.02BPM version of this. Select sequence 4 (Time Stretched Multi) – this is an 8 bar version which contains both 'un-warped' loops on track 2. The time stretched versions seem to have retained the tone of the original Bar Performance sample, and the drums actually mask that any glitches quite well.

One thing you might notice is that the timing of the drums doesn't quite 'fit' with the timing of the piano – this is quite common when dealing with acoustic performances, as they are not 'quantised', but this is something we can address in the next chapter.

C02: CHOPPING TECHNIQUES

Loops can get boring pretty quickly, so a far more interesting, and arguably more 'MPC' way of editing samples, is to use chopping.

TOPICS COVERED IN THIS CHAPTER

- ✓ Region & 'Lazy' Chopping Techniques
- ✓ Non Destructive Chopping
- ✓ Threshold Chopping
- ✓ Editing Chopped Kits
- ✓ Sequencing with Chops
- ✓ Matching Musical Key

WHAT IS CHOPPING?

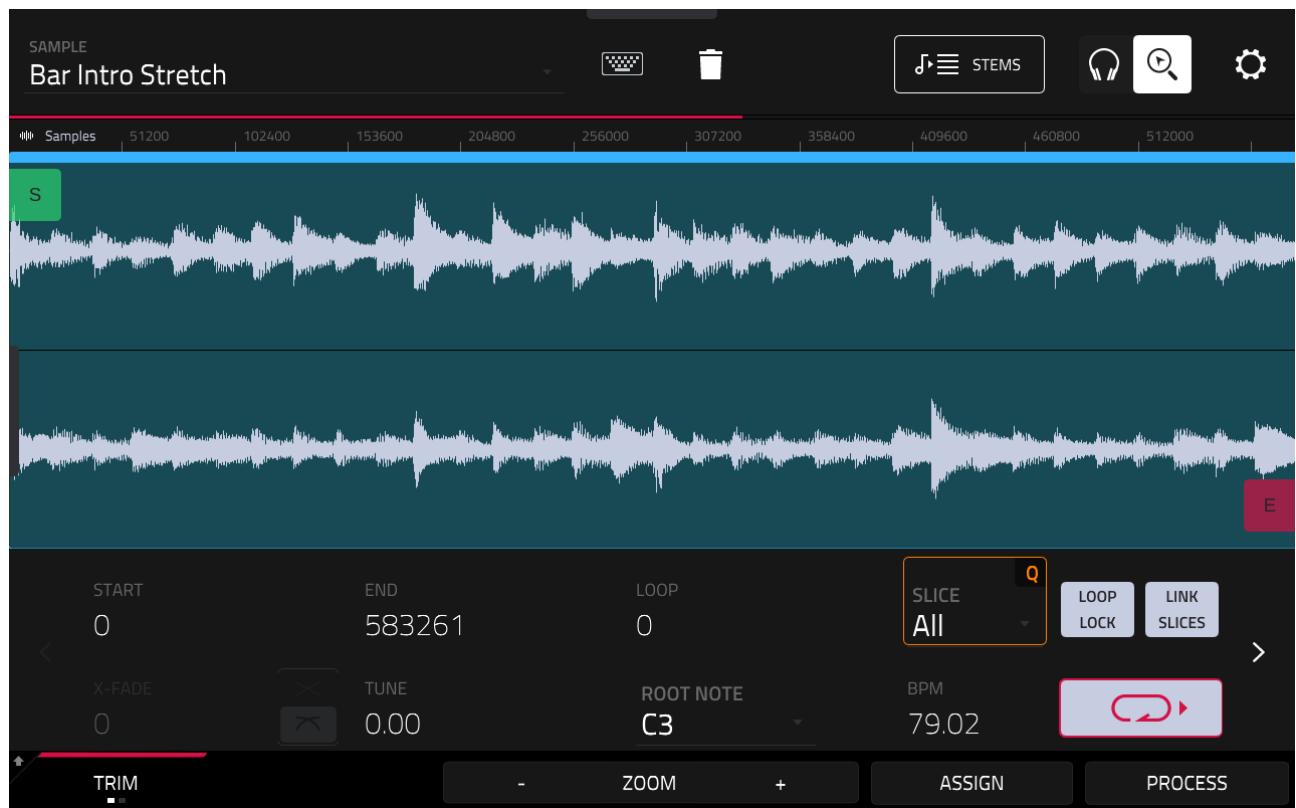
Chopping is simply the process of slicing a sample into a number smaller regions. A common use-case for chopping is to 'rearrange' a loop into something more unique and interesting, but it can also be used to 'extract' individual drum hits or sounds from a sample that can then be used to build custom drum kits and instruments. Chopping is also used in a variety of other creative and experimental techniques and it's without doubt one of the MPC's most popular features.

In the previous chapter we produced a whole bunch of drum and musical loops, and in this chapter we're going to utilise chopping to transform those repetitive looped samples into a more interesting set of playable kits.

CHOPPING A MELODIC LOOP

From the **C02** folder, load the project '**C2 Chopping.xpj**' - this will load some samples into the sample pool for us to work with.

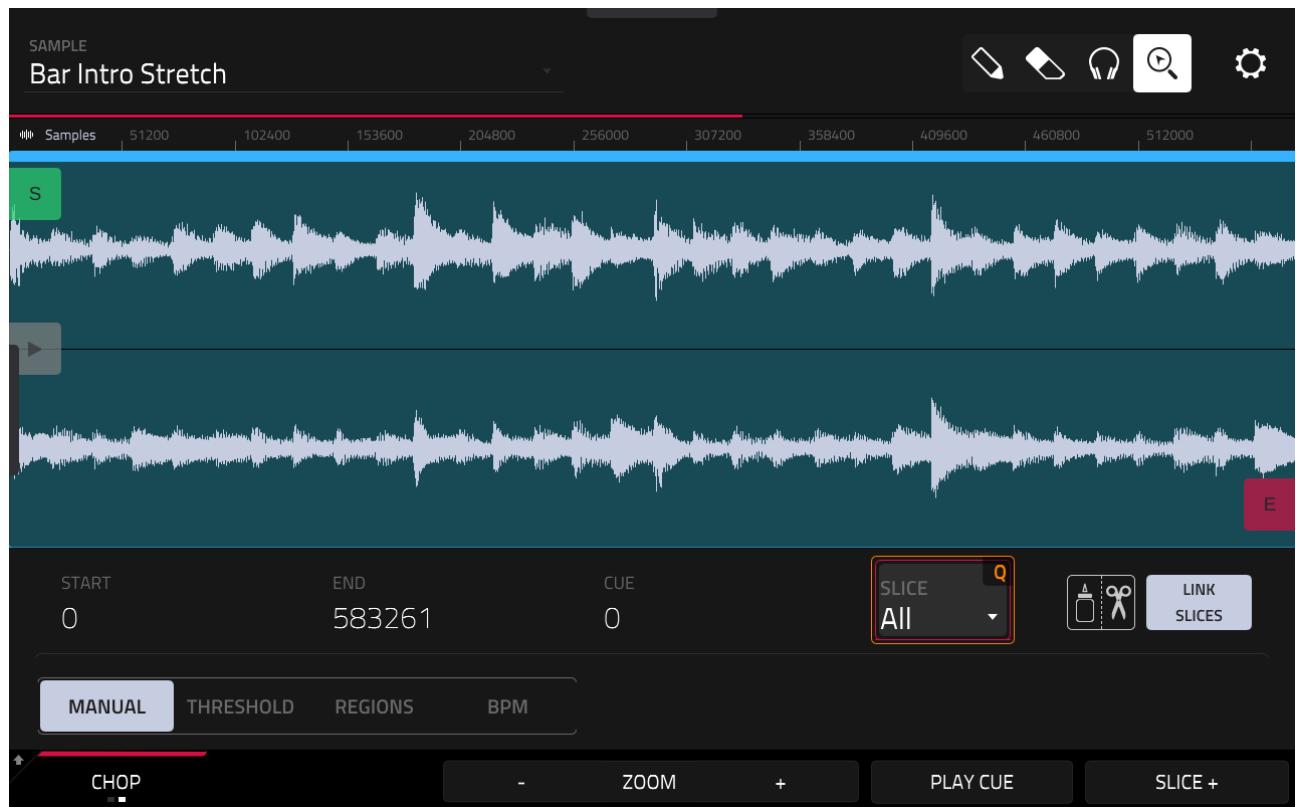
Go to [**SAMPLE EDIT**] and select the **Bar Intro Stretch** sample, this is the time stretched melodic loop that was made in the previous chapter.



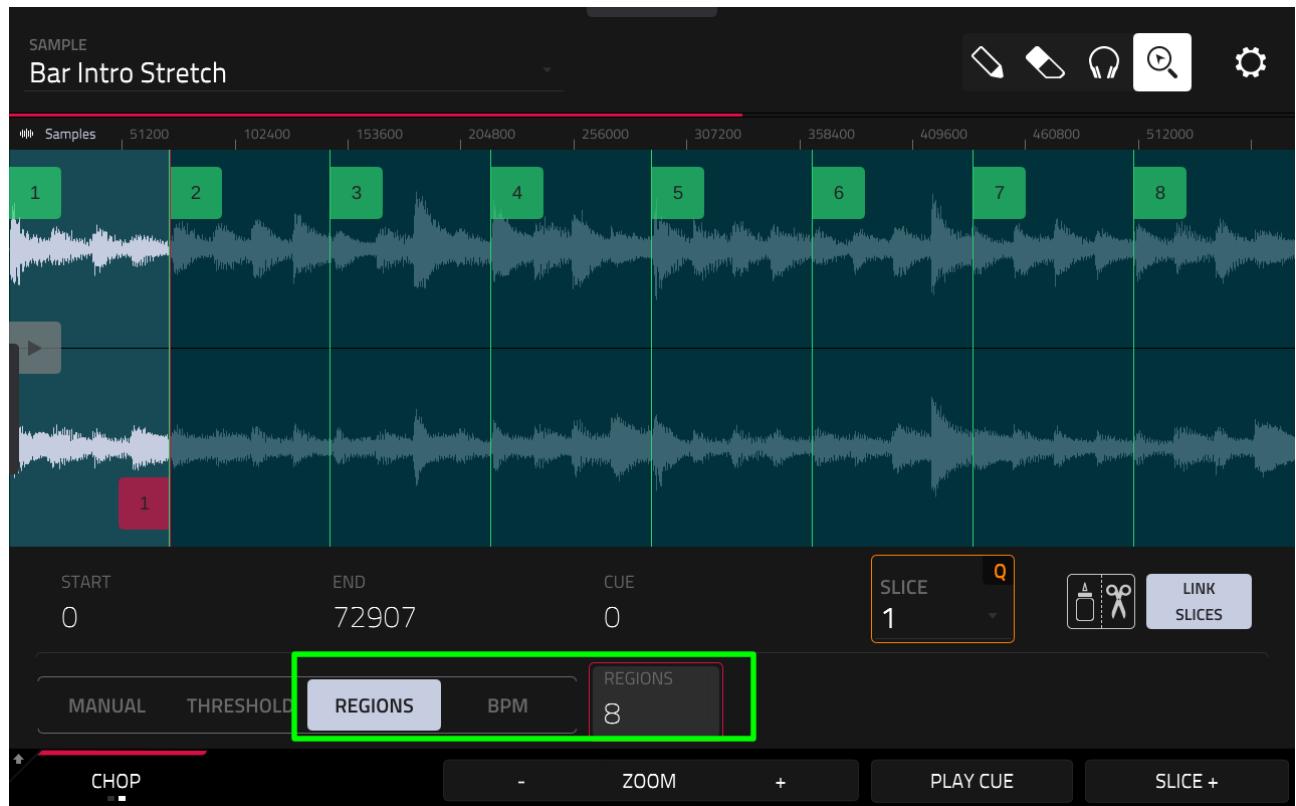
In the previous chapter we looped this to create a four bar repeating loop, then time stretched it to 79.02 bpm. It developed some glitching at the very end of the sample, but by the time we finish chopping, this will not matter.

First let's just have another listen to this sample. Hit pad [A01] to preview; I want you to count the beats; '1 and 2 and 3 and 4....' And you should count 16 beats in total, or if you prefer two bars of 8 beats. Generally speaking when chopping a sample like this we'll normally look at chopping it so each slice is either a single beat, or two beats.

Hit **TRIM** so it changes to '**CHOP**':



We are now able to slice up our sample into a number of smaller regions. On the **CHOP** screen tap on **REGIONS** and set the number of regions to **8**.



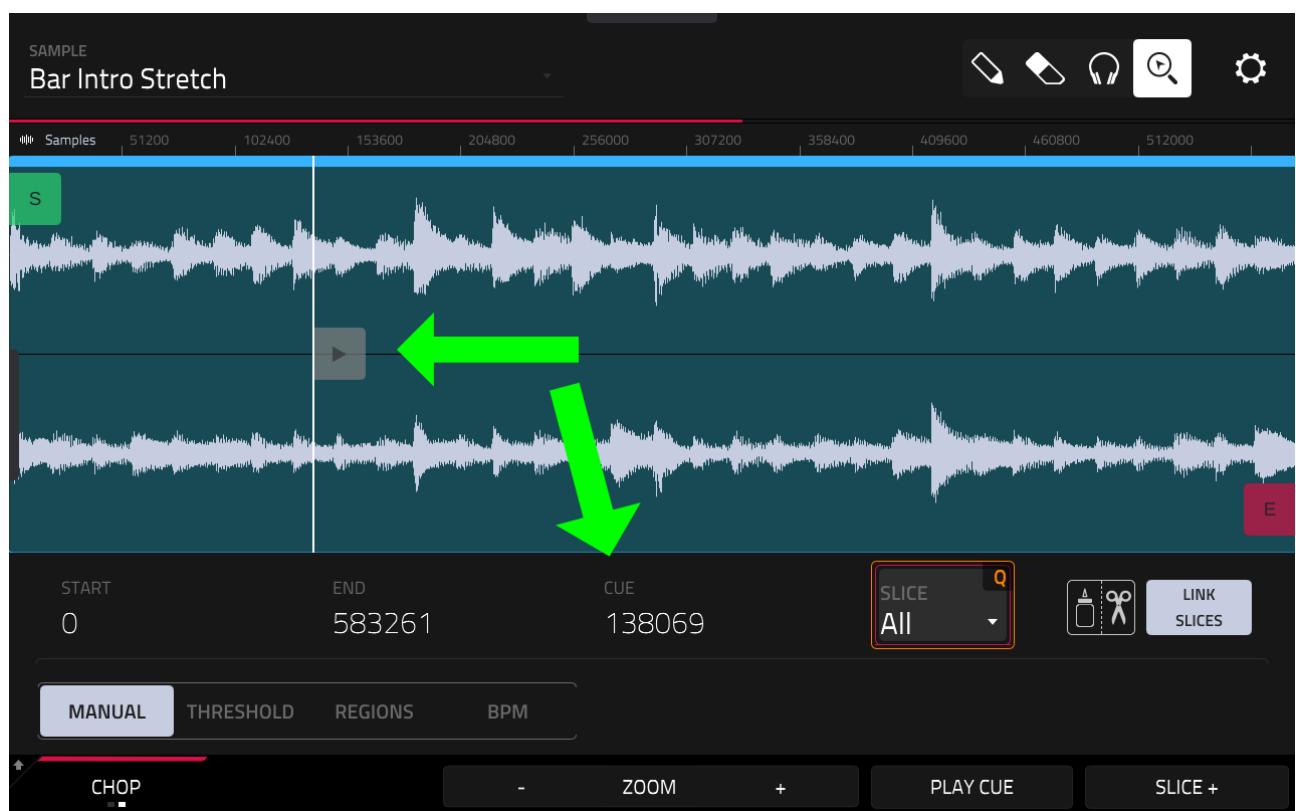
Here the MPC has split our 4 bar sample into 8 equal regions; as 4 bars is 16 beats (in 4/4 time) this means each region is **two beats** long. You can preview each region by playing the corresponding pad (for example, region 5 = pad [A05]).

Region chopping is entirely automatic and purely mathematical; if the file is 8,000 samples long, each of the 8 regions would be 1000 samples long. There is no transient detection here and hence, with this being an 'unquantized' piano performance, the timing of the piano doesn't fit perfectly within each region, so some editing will be required.

Now, for samples containing performances that are not 'quantized' with a more loose feel, a nice alternative to equal region chopping is to use a technique some call '**lazy chopping**'. First, hold down [**SHIFT**] and select **CLEAR ALL** to remove all the existing slices.

Lazy chopping involves manually inserting slices in real time while the sample plays through. Many prefer this as it feels more natural and gives you the option to add more (or less) slices than the fixed 'regions' option.

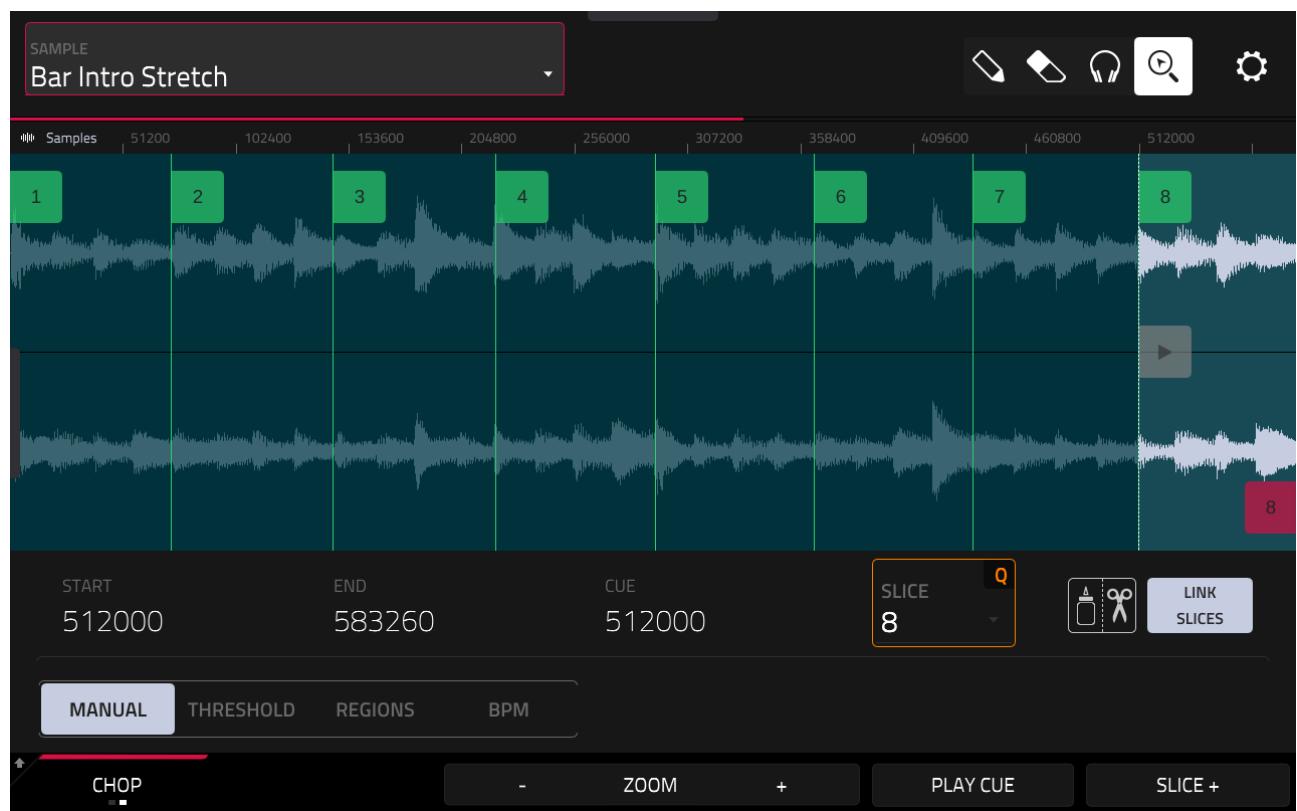
To begin performing a 'lazy chop', first set the playhead to the very beginning of the sample; you can either drag it on screen:



Or set the **CUE** parameter to '**0**'. You can also use (Q-LINK 15).

When you are ready, simply hit pad [A01]; this will insert the first slice at the current CUE point (i.e. at 0) and simultaneously begin playback.

Now, as your sample plays, hit pad [A02] at the point you want to insert **slice 2**. Then pad [A03] to insert **slice 3**. If you mess up, hit **UNDO**; each UNDO will undo one slice.



After laying down those 8 regions you can preview them simply by hitting any lit pad. If a pad is lit, hitting it will not add any further regions, it will just play back the associated slice instead.



'Lazy Chopping' is of course not really 'lazy' at all, as you actually have to manually add all your chops, but it's generally more fun

and feels more creative, especially when dealing with more 'loose' recordings where rigid region slicing seems a little unintuitive.

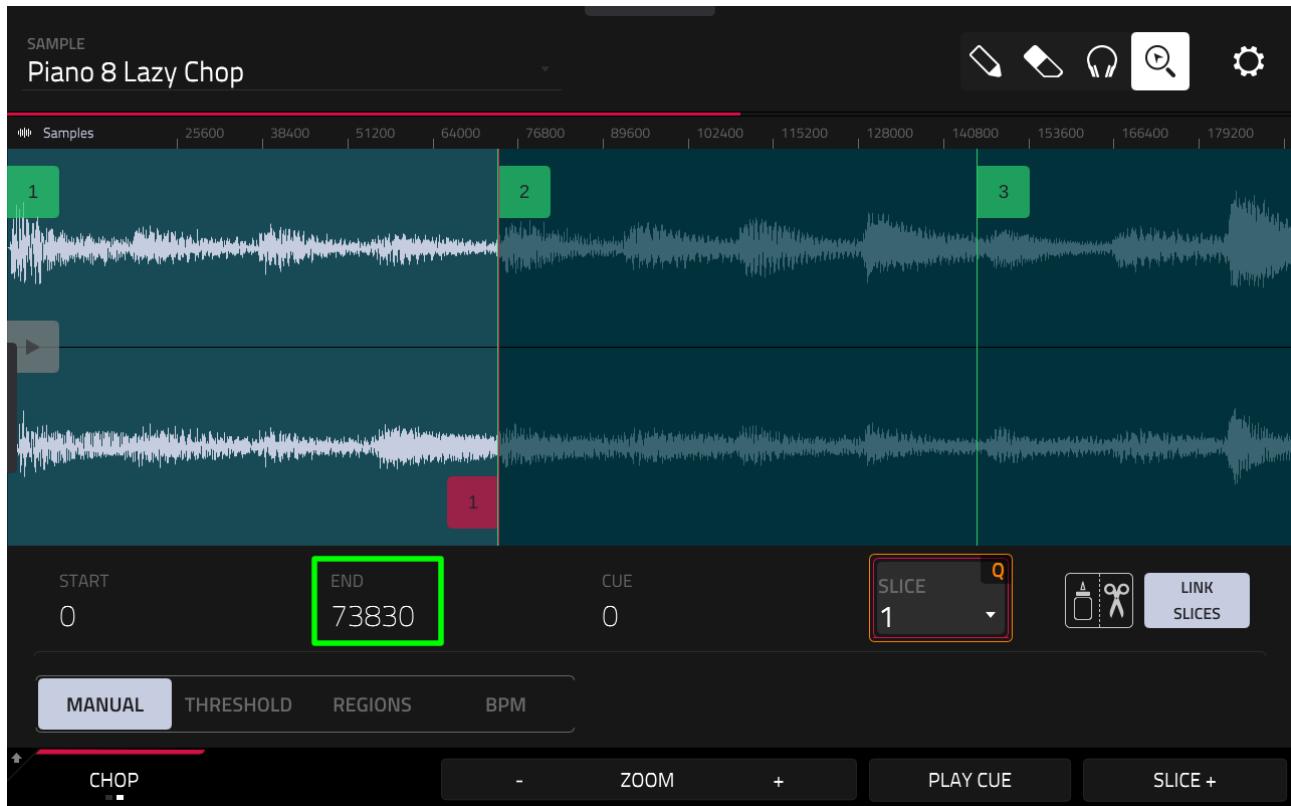
EDITING SLICES

No matter which methods you choose to chop and convert your sample, you will at some point almost certainly have to edit some (or even all) of your slices, to remove clicks and line them up to the nearest relevant transient within each 'two beat' region.

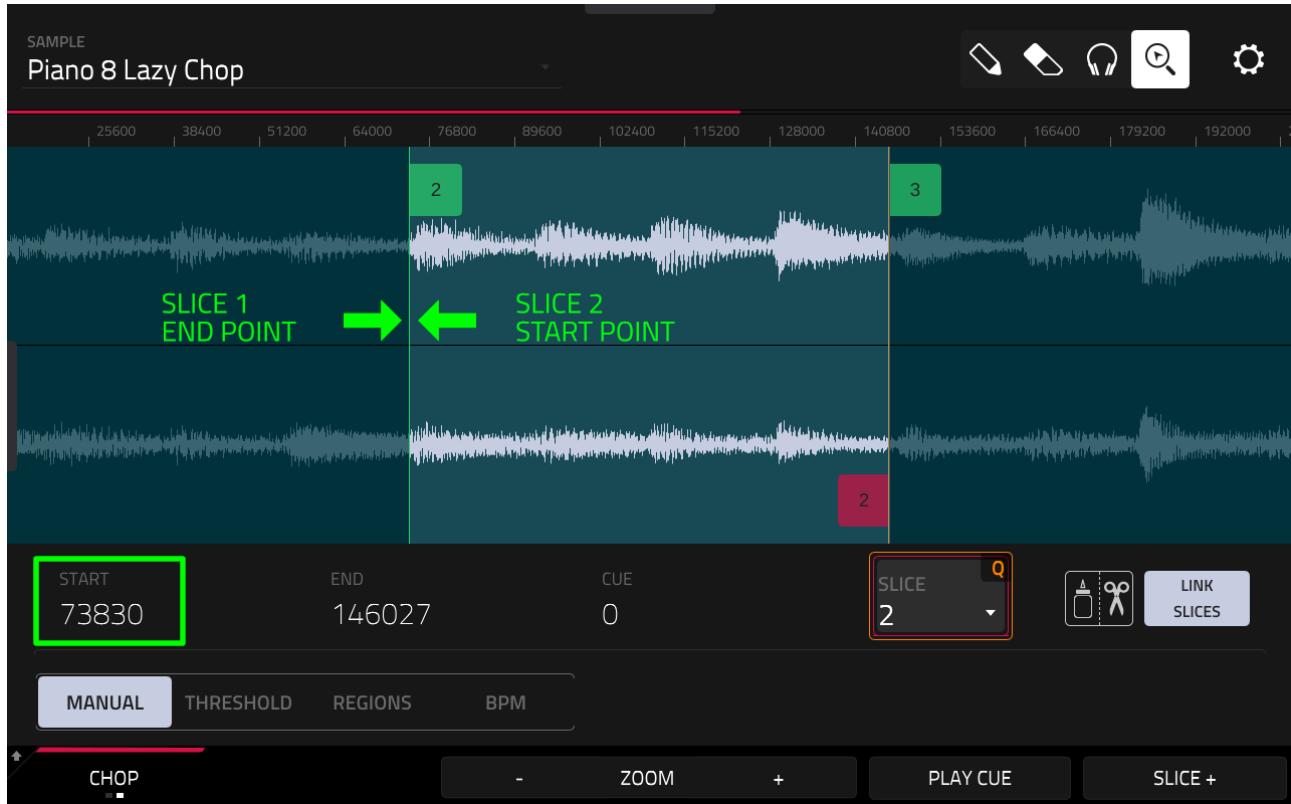
Editing can be performed here in the CHOP screen, but it's also possible to edit our slices at a later date as long as we continue using '**non-destructive**' editing processes. This is great as often we just want to keep the creative flow moving along and might find the process of having to 'fine edit' a bunch of slice regions a bit of a buzz kill.

Let's look at how we can perform a quick edit of our slices in the CHOP screen. At this stage let's use my own version of the chopped piano performance (**Piano 8 Lazy Chop**), this way any editing references I make now will exactly match what you see on the screen.

In **SAMPLE EDIT**, select **Piano 8 Lazy Chop** and you'll see that each slice region in our sample has its own unique START and END point; for example hit pad **[A01]** to select **SLICE 1**:



SLICE 1 has a **START** of **0** and an **END** of **73830**. Now select **SLICE 2**:



SLICE 2 has a **START** of **73830** and an **END** of **146017**. As you can see, the END point of SLICE 1 is the same as the START point of slice 2. And this is the same for all adjacent slices which by default will 'share' the joining edit point. This means if you change the START of SLICE 2 by 5 samples we'll also be changing the END of SLICE 1 by 5 samples as well.

Now this '**linked slice**' behaviour can be turned off, but for simple region chops like this it's normally fine to leave them linked together.

A quick slice tweaking workflow:

1. Set **0 SNAP** and in top right settings, **SLICE PREVIEW: OFF**
2. Tap on the **START** parameter – this is to set the zoom focus
3. Press **ZOOM+** (twice) to increase magnification

4. Continuously hit pad [**A02**] to preview and fine adjust the slice 2 **START** point using (Q-LINK 1)
5. Use your ears to hear for the best edit. Use your eyes to ensure you are in the correct part of the waveform (i.e. just before a piano note transient)
6. Repeat for the remaining slices.

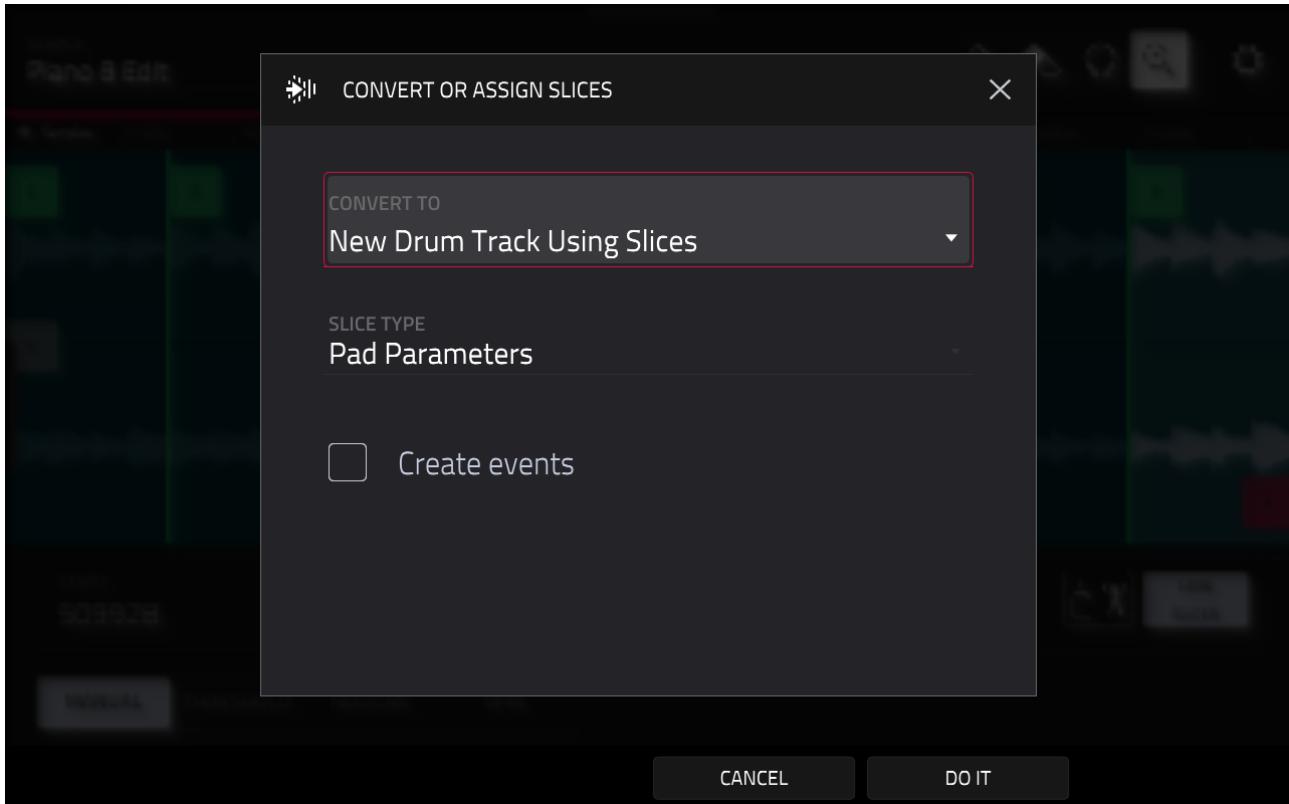
In a sample like this, where all the notes blend together continuously, you must expect to hear clicks at some or even all of the slices, it's just the nature of this type of musical loop. There's no silence or gaps before a transient like you could get with many drum breaks or percussive melodies.

The main purpose of the edit here is to ensure the regions cover the area of the sample they are supposed to be covering, that is, two beats of audio. If you can achieve this without clicks that's a bonus, go for the 'least clicky' edit point. This is not a problem and we will fix any clicks after converting the slices into a playable DRUM track.

Select my edited version which is also in memory; **Piano 8 Edit**. We're now ready for converting.

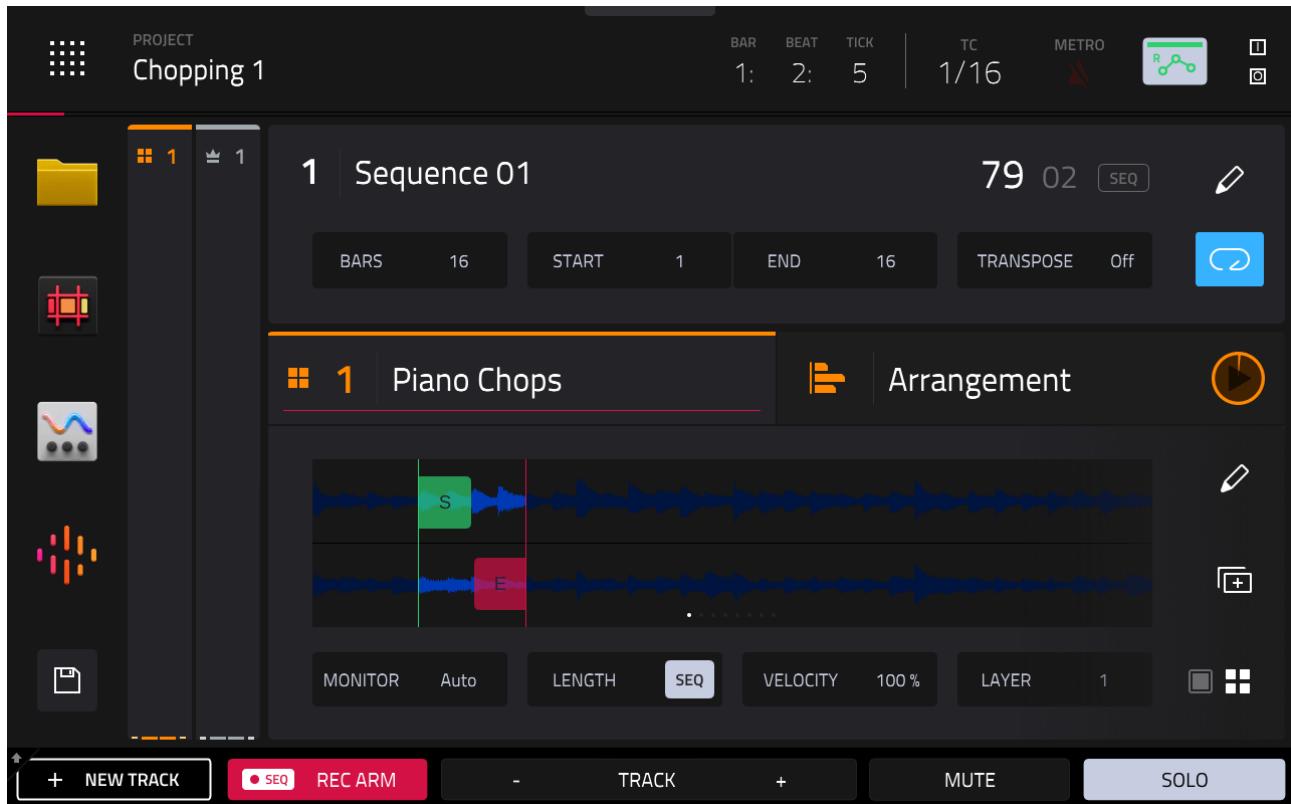
CONVERTING SLICES

To convert your sliced sample, hold down [**SHIFT**] and press **CONVERT**:

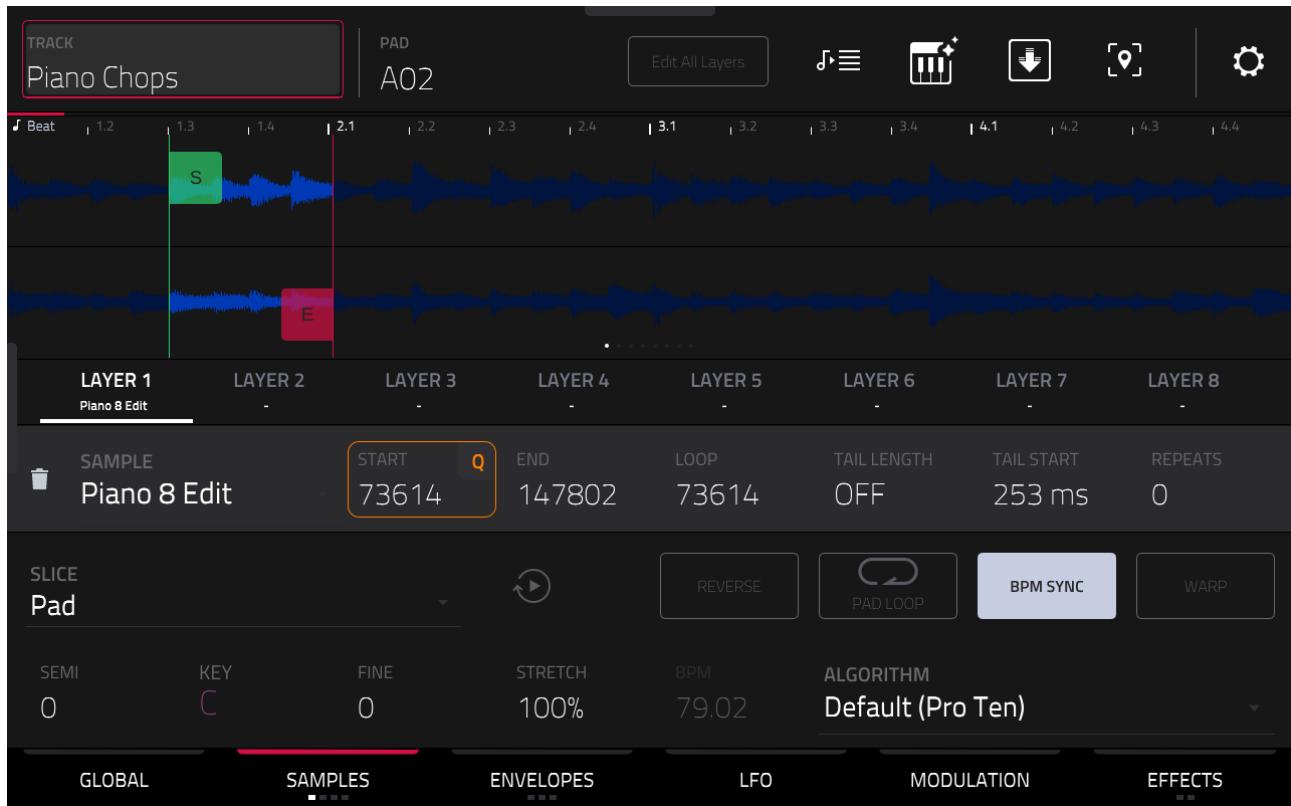


Select a **CONVERT TO** of **New Drum Track Using Slices** and **Pad Parameters** as the '**SLICE TYPE**'. Leave '**Create Events**' **unchecked**.

Hit **DO IT** and you'll be returned to the main CHOP screen. Hit [**MAIN**] and you'll find a new DRUM track has been created called **Piano 8 Edit** - rename it **Piano Chops**



Your slices have been mapped on pads [A01] to [A08]. Head over to **TRACK EDIT > SAMPLES** and run through all eight pads; let's look at pad **[A02]**:



As you can see, each pad has our '**Piano 8 Edit**' sample assigned to LAYER 1, but each pad is configured to only play back a specific region of that sample; i.e. the slice region we configured in the original sample. (Slice 2 in this case)

As we chose '**Pad Parameters**' as the conversion option, the MPC has set the START and END point on the pad layer to recreate the slice's start and end points exactly as we originally configured within the sample.

Most of our slices start and end with some kind of 'click', so let's look at how we get rid of them. Hit the **EDIT ZONES** icon in the toolbar and select **ALL** pads. Now go to **ENVELOPES** where you'll be taken to the **ENV:AMP** page.

As you can see, each pad already has an **ATTACK** of 1 added automatically, this will help remove any initial click, but you can try increasing this to an **ATTACK** of **10** to make sure (experiment as this will vary depending on the type of loop). The main cause of clicks is mostly the end of most slices, so increase the **DECAY** to **20**. Remember these envelop settings are now applied to all pads. This seems to have done the trick in many cases, but we can tweak individual pad settings as we go along.

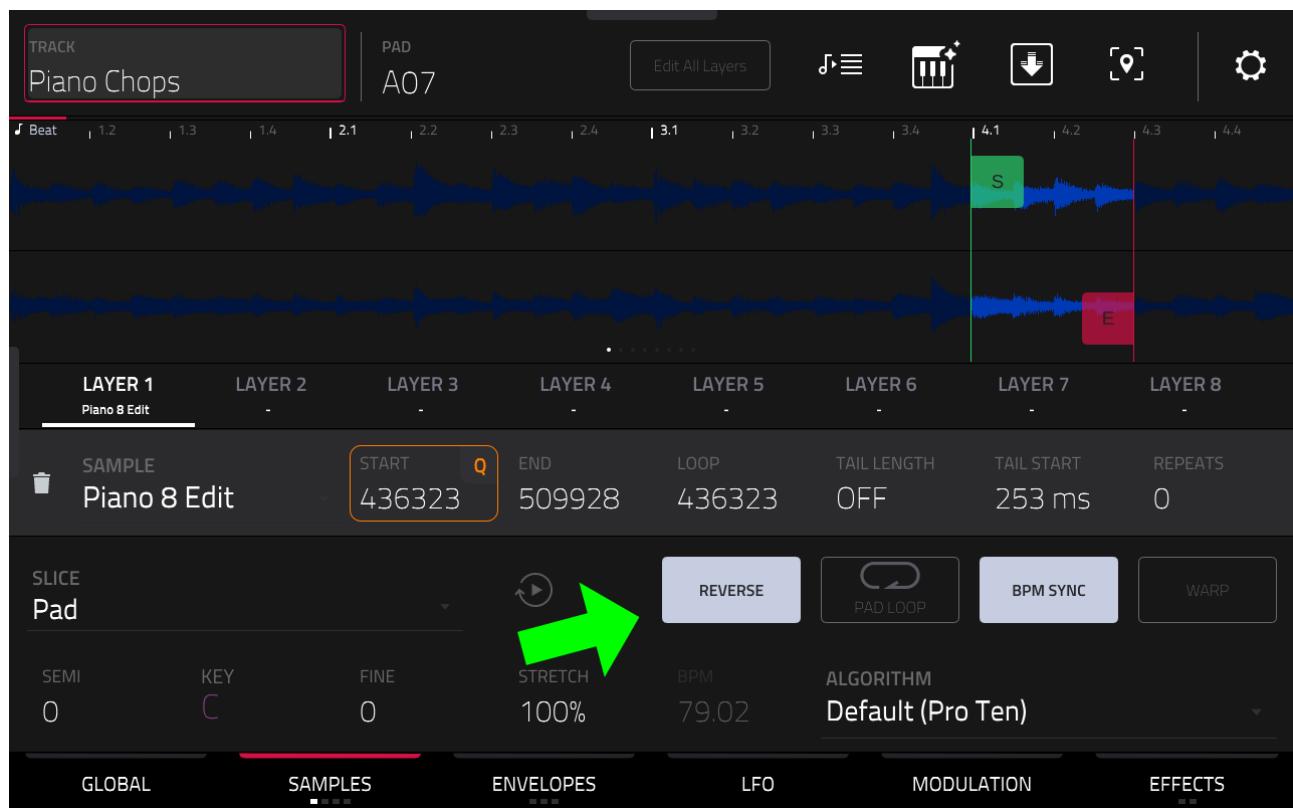


Head back to **EDIT ZONES** and set it back to **CURRENT** mode.



You might think that adding some TAIL would help here and in an ideal world yes it would, but TAIL is added to the layer **before** being sent to the envelope - this means the MPC actually uses the 'click' to generate the tail portion, so it just doesn't work well at all!

Select pad [A07] and go to **TRACK EDIT > SAMPLES**; enable **REVERSE** play:



This is going to add a little flavour to the resulting sequence and as it's just a pad parameter, can be easily changed back if we need to.

Now go to **ENVELOPES** for pad [A07] and increase the **ATTACK** to **14** to help add a little more 'fade in', and set **DECAY** To **28** to add more fade out.

Even though the slice itself is now playing in reverse, the ATTACK and DECAY still act on the 'pad' in the same way (ATTACK = start of pad, DECAY = end of pad).

At this point, simply go through each pad and tweak each one as required. Some pads will need a little more ATTACK or DECAY, some might need a slight tweak on the START or END points.

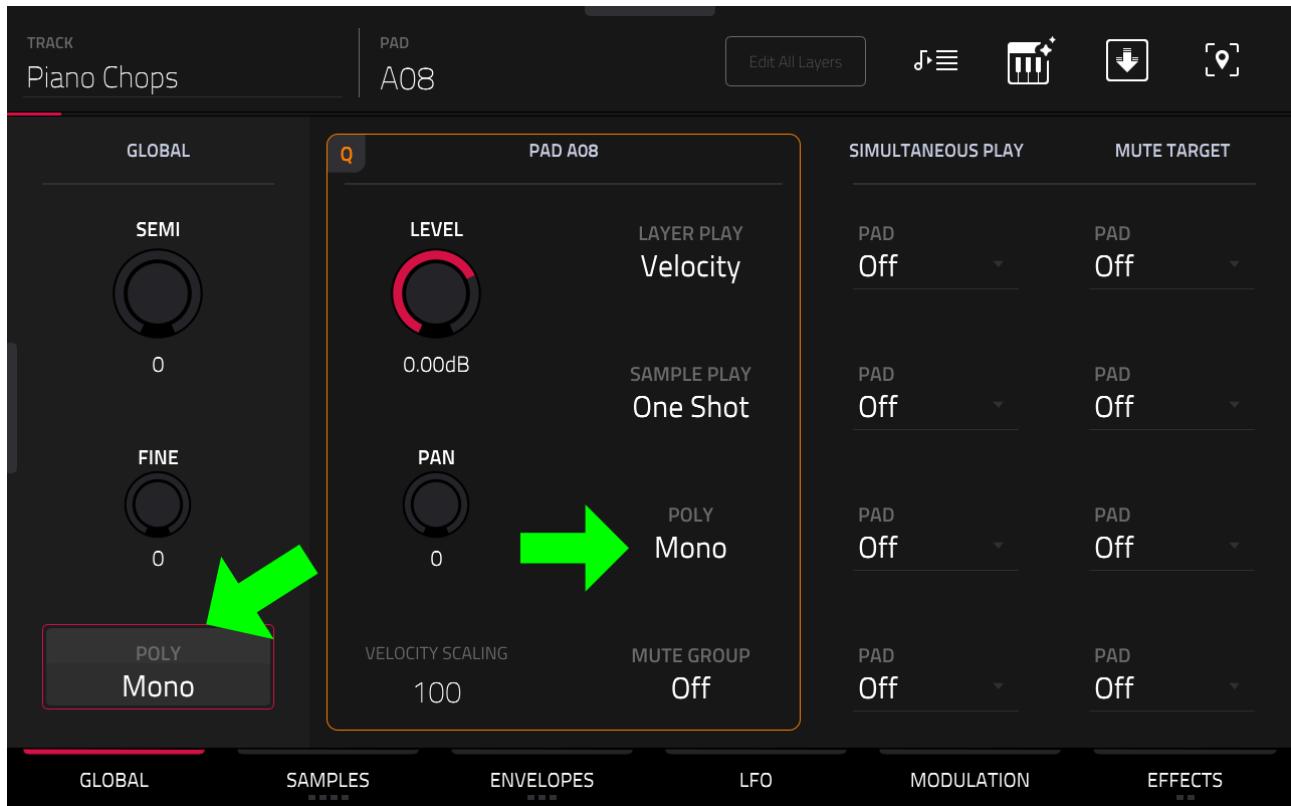
It's worth noting that when you use a PAD PARAMETERS conversion, the pad initially 'adopts' the slice regions set in SAMPLE EDIT, but then become *completely independent* and can be freely changed in TRACK EDIT without having any impact on the slices set in the sample itself.

This is one reason why there's no need to tie yourself in knots tweaking slice markers in SAMPLE EDIT – it's better to convert and see how the chops sound when they have the pad envelopes working their magic as often there's no need to do any further editing, beyond the odd tweak here and there.

RECORDING WITH OUR SLICES

Our 4 bar piano loop is 79.02 BPM, so configure the sequence tempo to **79.02 BPM** as well. Set sequence length to **8 BARS** with **LOOP: ON**.

At this point, start to experiment playing your pads to create a sliced performance. The first thing you might notice is that the entire track is completely **monophonic**, so only one pad can play at time, which works well for region chops like these:

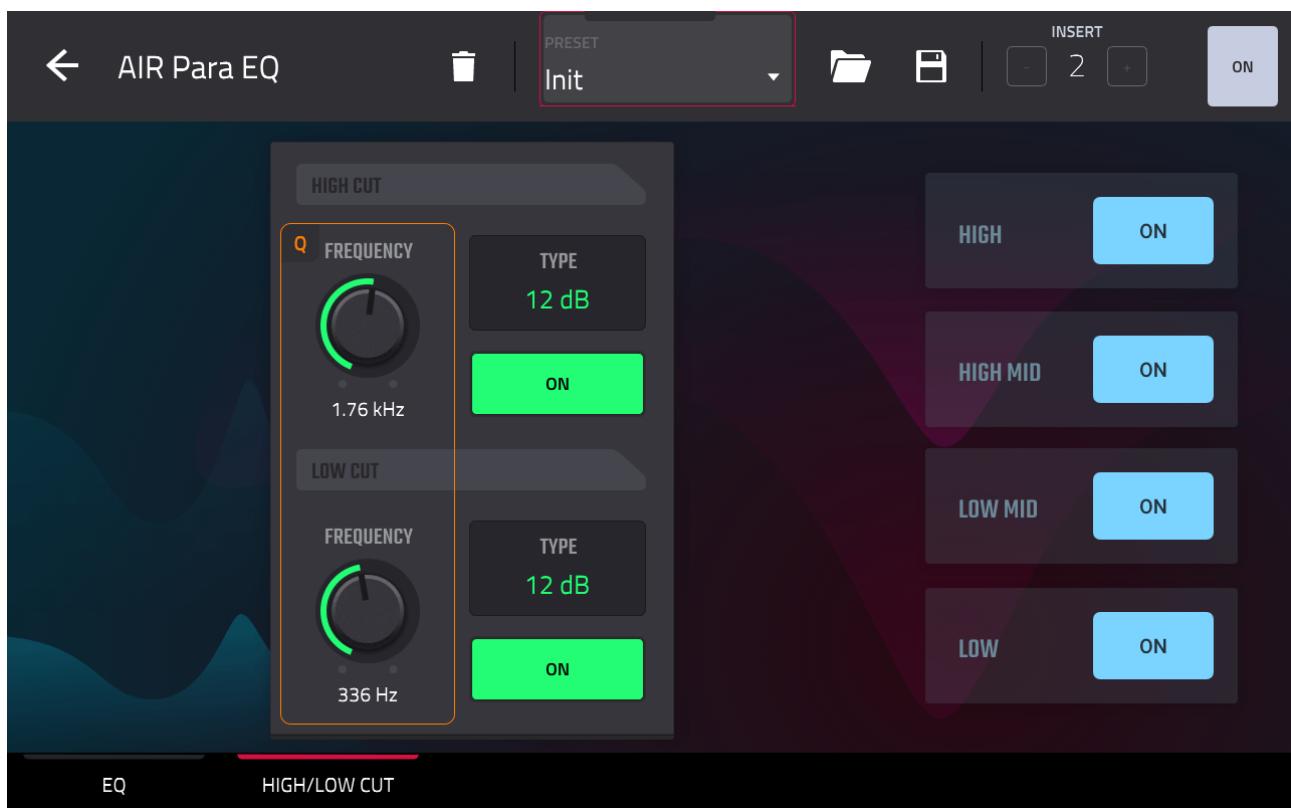


Notice that not only is each pad set to monophonic play (i.e. monophonic with itself, so repeatedly playing the same pad just cancels out the previous hit), but the entire track **POLY** is also monophonic. This means every time you hit a pad, it immediately silences the currently playing pad.

Also be aware that there is an underlying chord progression in this piano loop, with pads [A01] to [A04] covering the first part (bars 1 and 2) followed by a second part of the progression on pads [A05] to [A08]. I'll talk about the possible key and scale later when we start introducing some additional instruments.

ADDING SOME FX

Let's just add a little FX to shape the sound a little. In [MAIN] > XL CHANNEL Strips, select the **FX** tab and insert an **AIR Para EQ**, select the **HIGH/LOW CUT** tab:

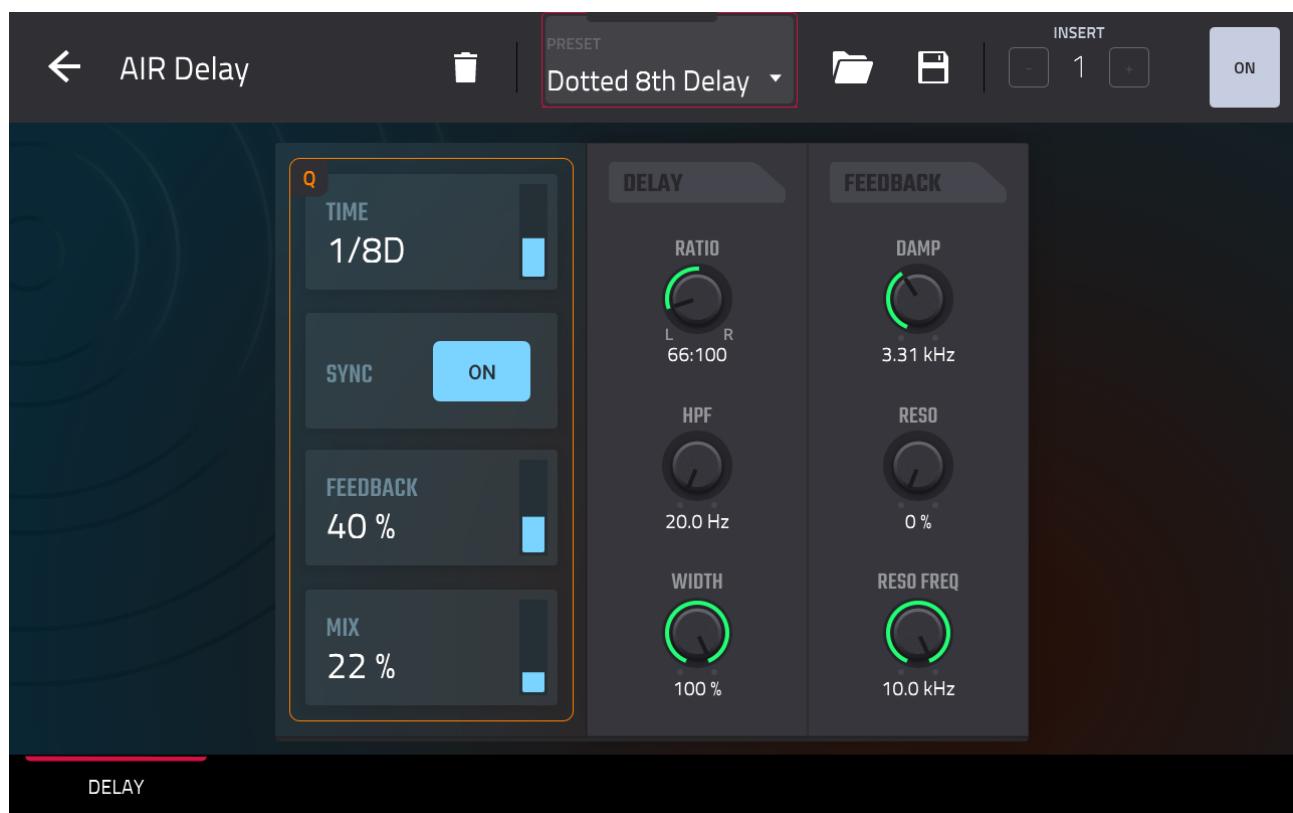


Set **LOW CUT: ON** with a **12dB** slope and sweep the **FREQUENCY** until you reach the point where the excessive low end rumble is removed but we still have some body to the piano – around **336Hz**.

I also took out some of the excessive hiss with a **12dB HIGH CUT** of frequencies over **1.76kHz**.

Basically I'm already thinking ahead as I want to carve out some room for the bass and potentially other low frequency elements, and I don't want this piano hogging all that low end.

Let's add some delay to add some ambience and help smooth out the ends of the chops. Add **Delay/Reverb > Air Delay** and use the **Dotted 8th Delay** preset with the following tweaks:

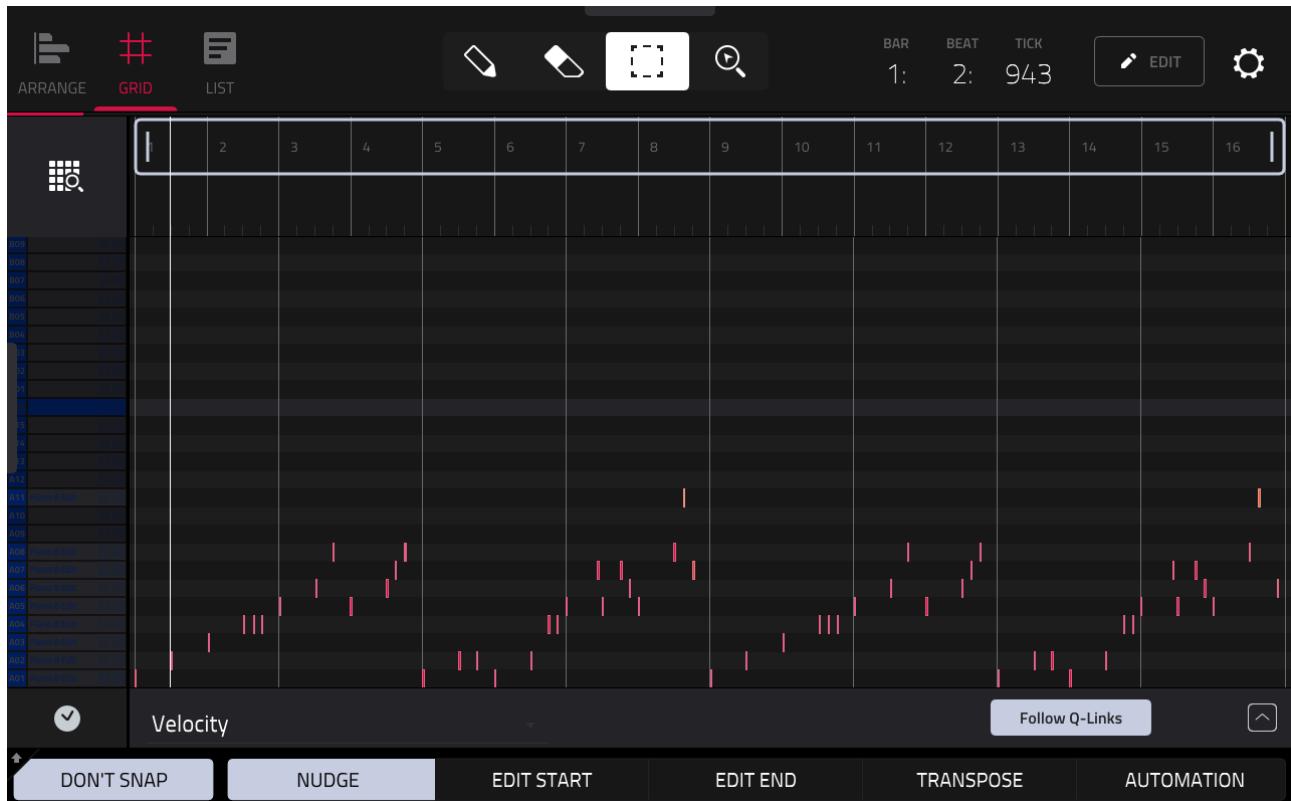


If you wish, save your work so far to your '**Projects**' folder and then check out my own piano chopping experimentation by loading the project file **Piano Chops.xpj**. I keep it pretty faithful to the original but added some choppy repeats to give it a more unique, sliced up character (which is where the monophonic pads work really well) and of course I include the reverse pad to mix it all up a little.

Notice how I avoid that horrible glitchy sound at the end of slice 8 simply by using some monophonic pad repetition and not allowing pad 8 to fully play out. So as you can see, chopping not only allows you to rearrange your loops, it also lets you avoid the glitchy portions of it (and that problematic click that occurred with the original loop is of course now irrelevant).

This was eventually recorded with a 1/16th timing correction, but I did turn this off and 'nudged' a couple of the events a few 'ticks' to account for the fact that the original piano performance was not quantized, so some chops just sound better if they are a little 'off grid' (mainly pad 08 and the reverse pad A07).

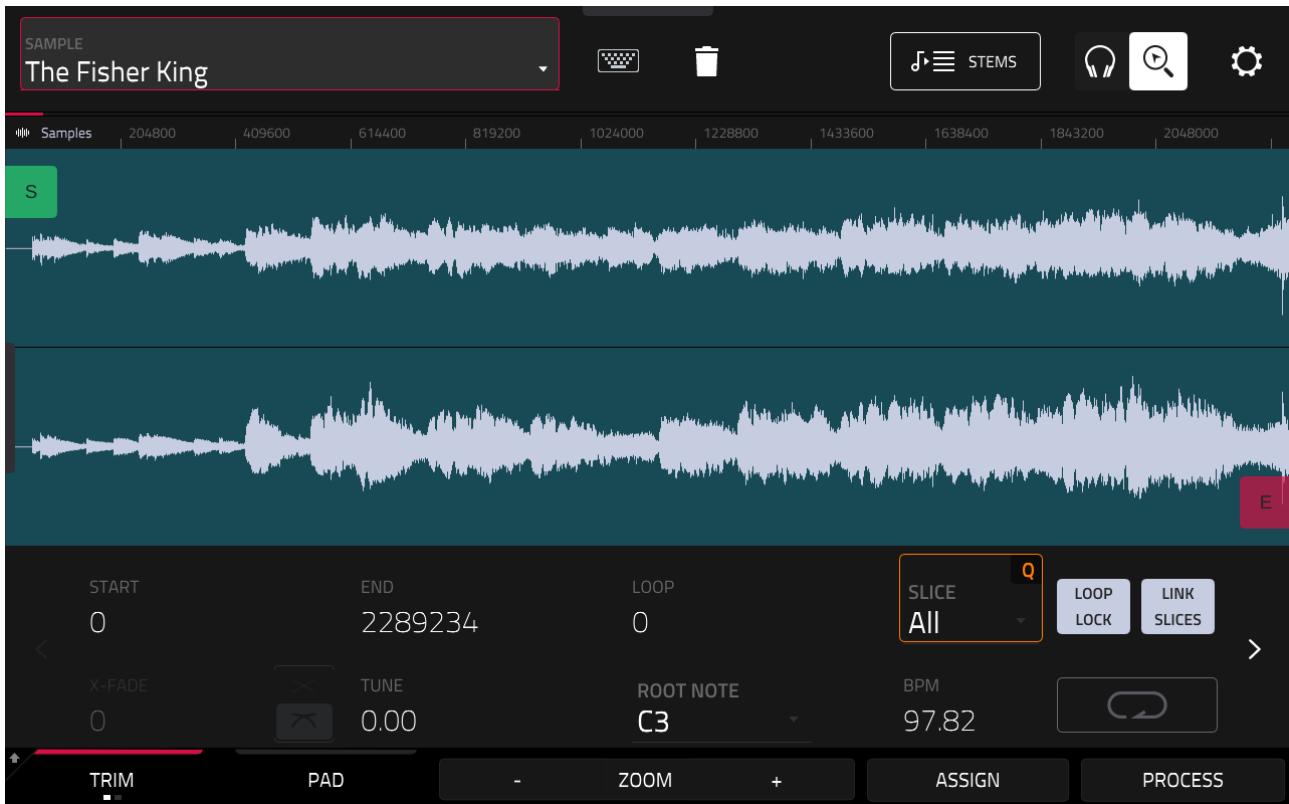
You'll also notice that I made a copy of pad [A07] to pad [A11], however this one plays forward and I use it in the sequence to help fill a couple of awkward gaps at the end of bar 8. Here's the full sequence in GRID VIEW:



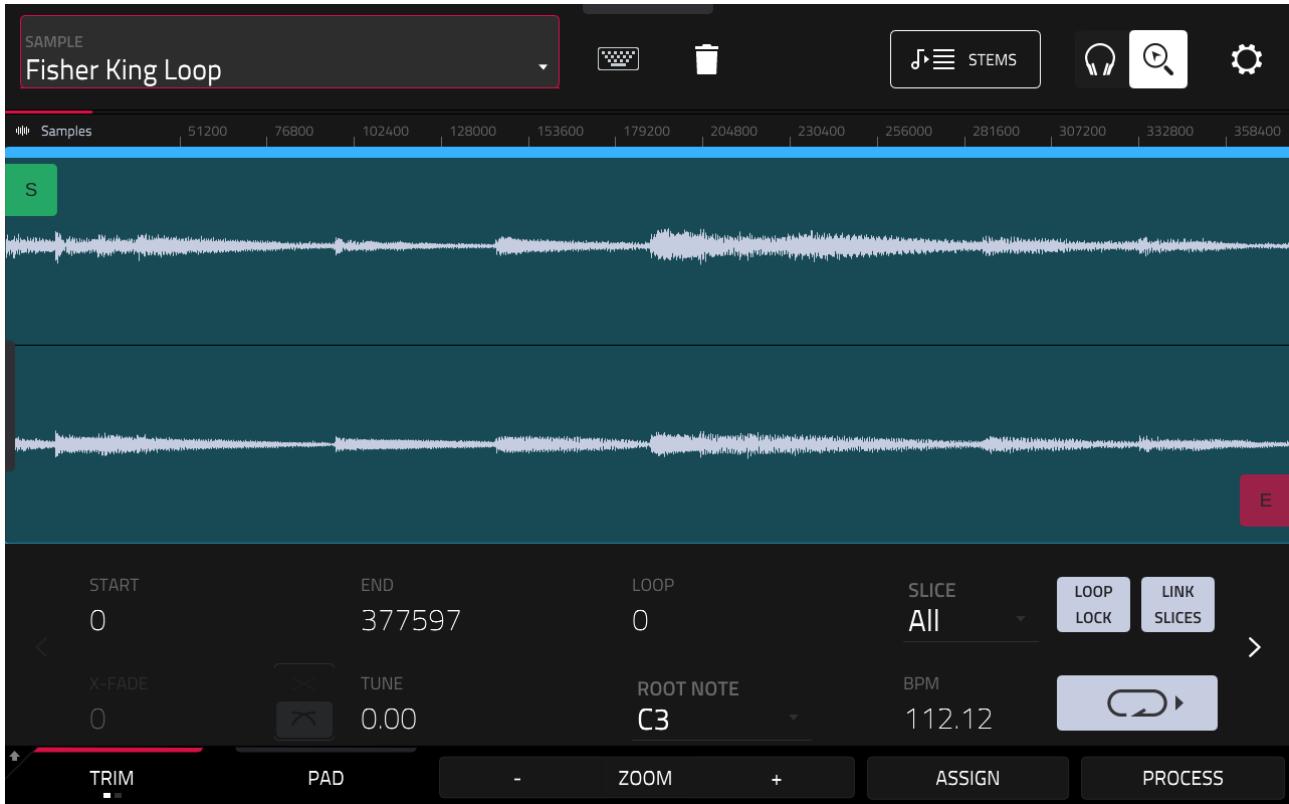
There's still the odd glitch here and there but let's not get too concerned as they will definitely be hidden once we start adding more layers to the song!

THRESHOLD SLICING

Go to [BROWSER], and from the **C02** folder select '**The Fisher King.flac**' and hit **LOAD TO POOL**. Go to [SAMPLE EDIT] > **TRIM** and select this sample:

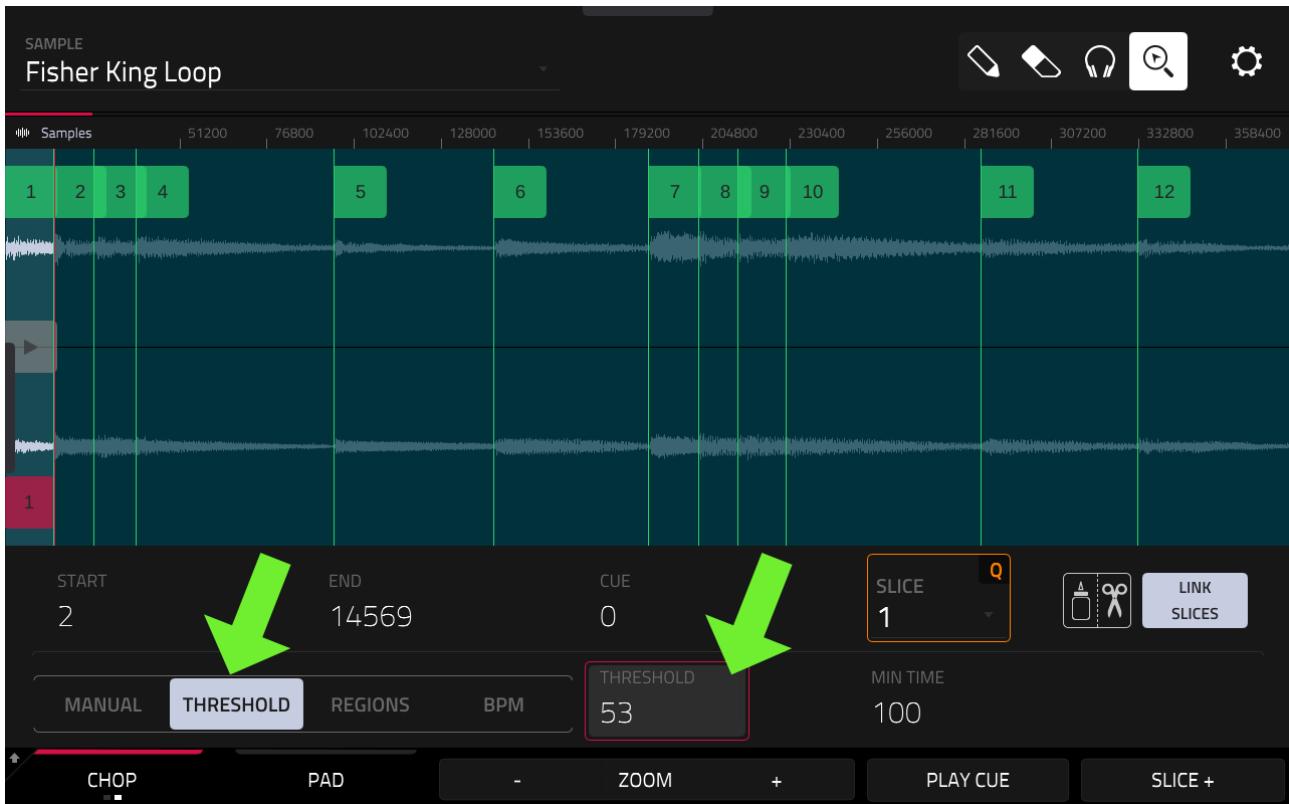


Let's do something with the intro, so first loop it using the techniques we covered in the previous chapter, with a **START** of **49336** and an **END** of **426926**. Use **PROCESS > Extract** to create a new looped sample called '**Fisher King Loop**'.



DETECT is giving me a **BPM** of **112.12** which seems fine. This is of course much faster than our 79.02 BPM sequence so stretching down is almost certainly going to sound terrible. This doesn't matter though, as we can use chopping to transfer this loop into a make-shift instrument.

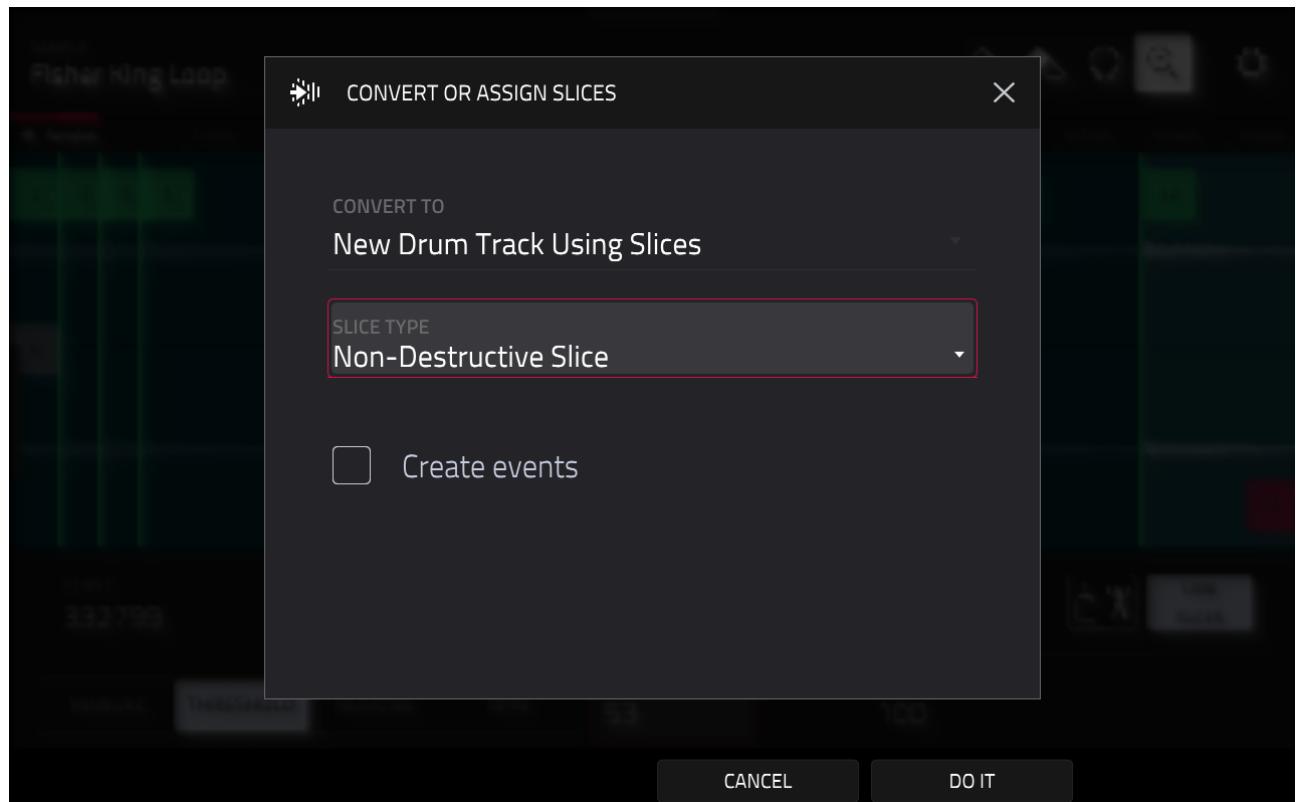
Go to **CHOP**. Now as you can probably hear, this loop has some funky timing, so region chopping is definitely a waste of time. We could try lazy chop again, but let's try what I reckon is the *real* 'lazy' chop; hit **THRESHOLD**:



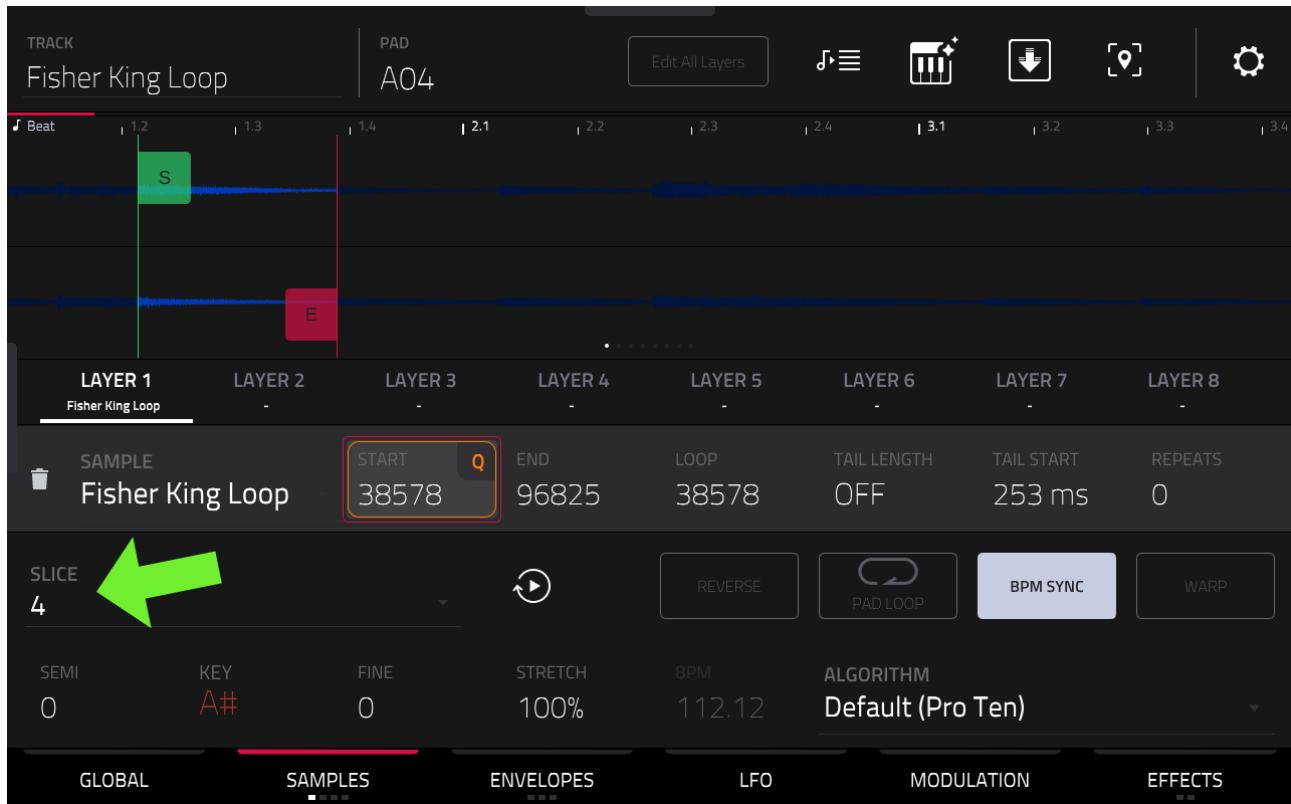
The MPC now attempts to automatically detect the actual transients in this loop. To help it, adjust the **THRESHOLD** setting, typically this needs to be in the region of 40-60 to pick up all the transients. You can also adjust MIN TIME (which sets the minimum time it will wait before looking for a new transient) but in my experience for most loops I find this is normally makes no difference.

A **THRESHOLD** of **53** seems to do the trick nicely, giving us 12 individual note slices. Some of the regions can probably do with a little tweak but we don't need to get hung up on that at the moment as we're going to convert 'non-destructively'. The main goal here is to ensure the MPC has picked up all the individual 'notes' in this loop.

Hold down **[SHIFT]** and select **CONVERT**. Again choose '**New Drum Track Using Slices**' but this time choose '**SLICE TYPE: Non-Destructive Slice**'.



Hit **DO IT** and the MPC will create a new DRUM track ('**Fisher King Loop**') containing all our slices assigned to pads [A01] to [A12]. Go to **[TRACK EDIT] > SAMPLES**; select pad **[A04]**:



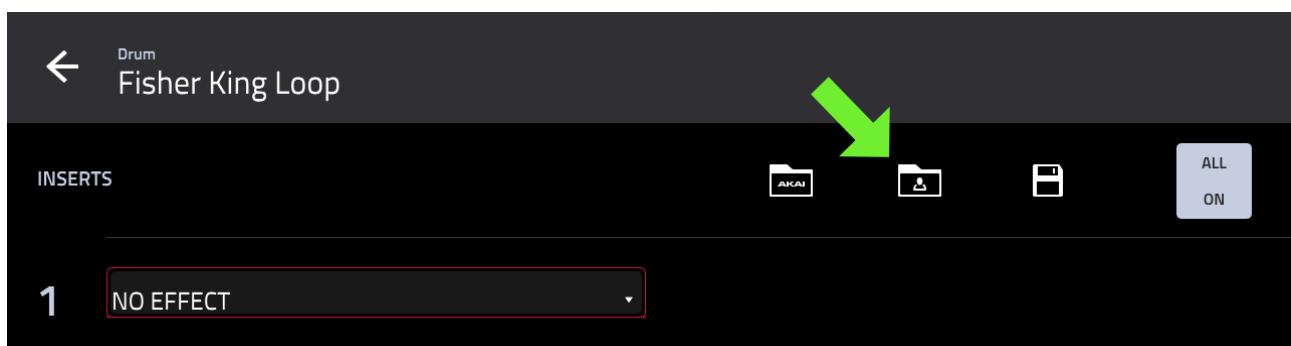
Again we have our slices assigned to the MPC pads, as we did when using 'Pad Parameters' as the conversion option. This time however the **SLICE** parameter is not set to '**Pad**', it's set to a specific slice number - in this case, **SLICE: 4**.

With a non destructive 'slice' conversion, each pad continues to directly reference the actual slice region in the original sample and sets the pad START and END points to match whatever slice number you set in the SLICE parameter. Make a change to a slice region in SAMPLE EDIT and it will be reflected here on the START and END points on your pad layer (and vice versa).

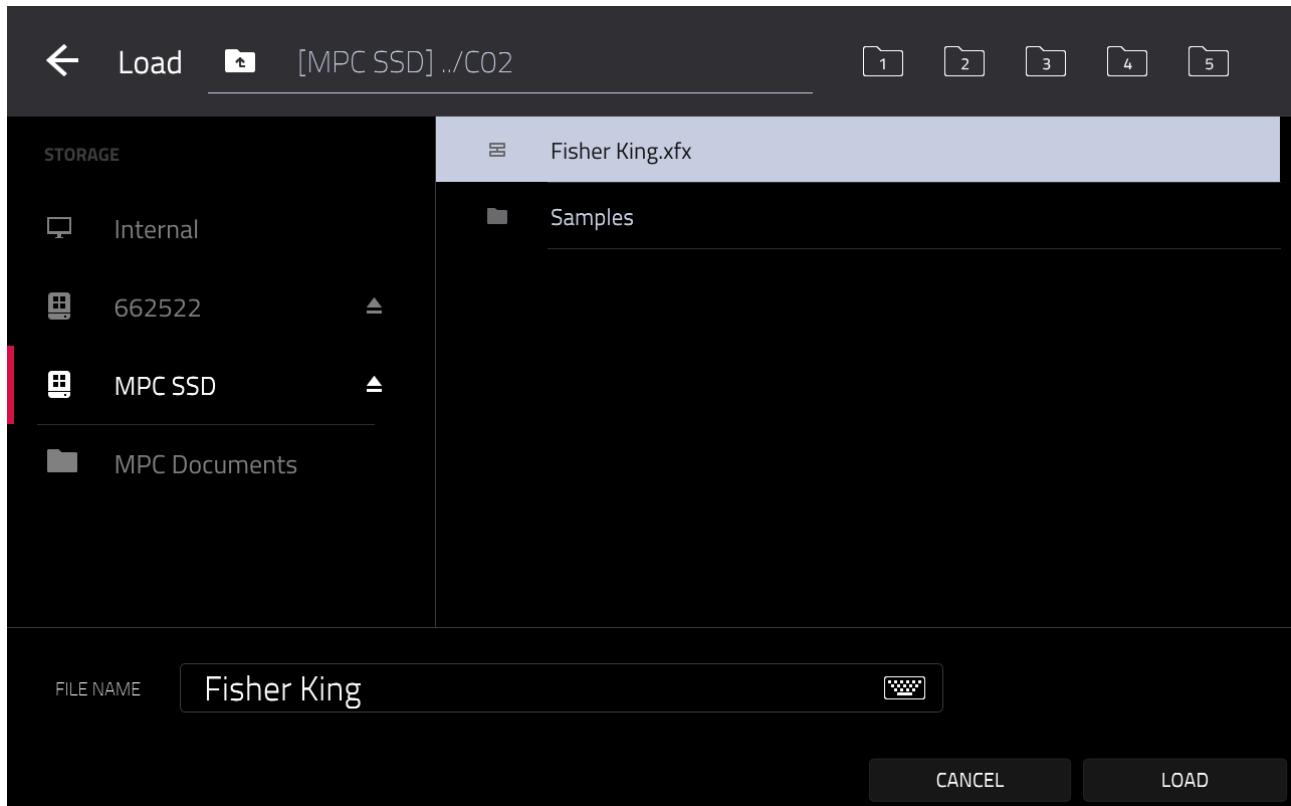
EXTENDING CHOP LENGTH

Play the twelve pads and you'll hear that most of the chops are quite short, so let's extend them to make a more flexible 'instrument'.

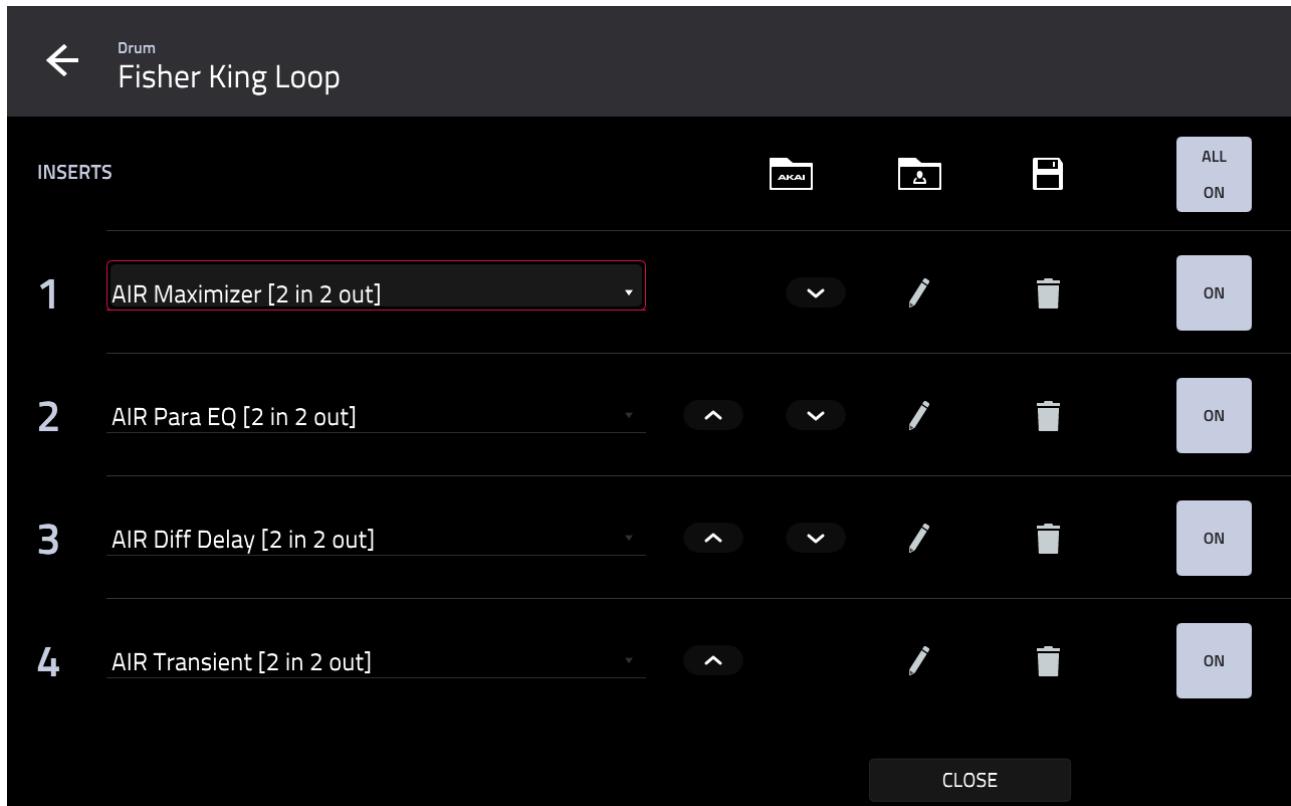
In [**MAIN**] open the **XL Channel Strips** and select the **FX** tab. Open the **INSERT** screen and tap on **LOAD FX RACK** icon:



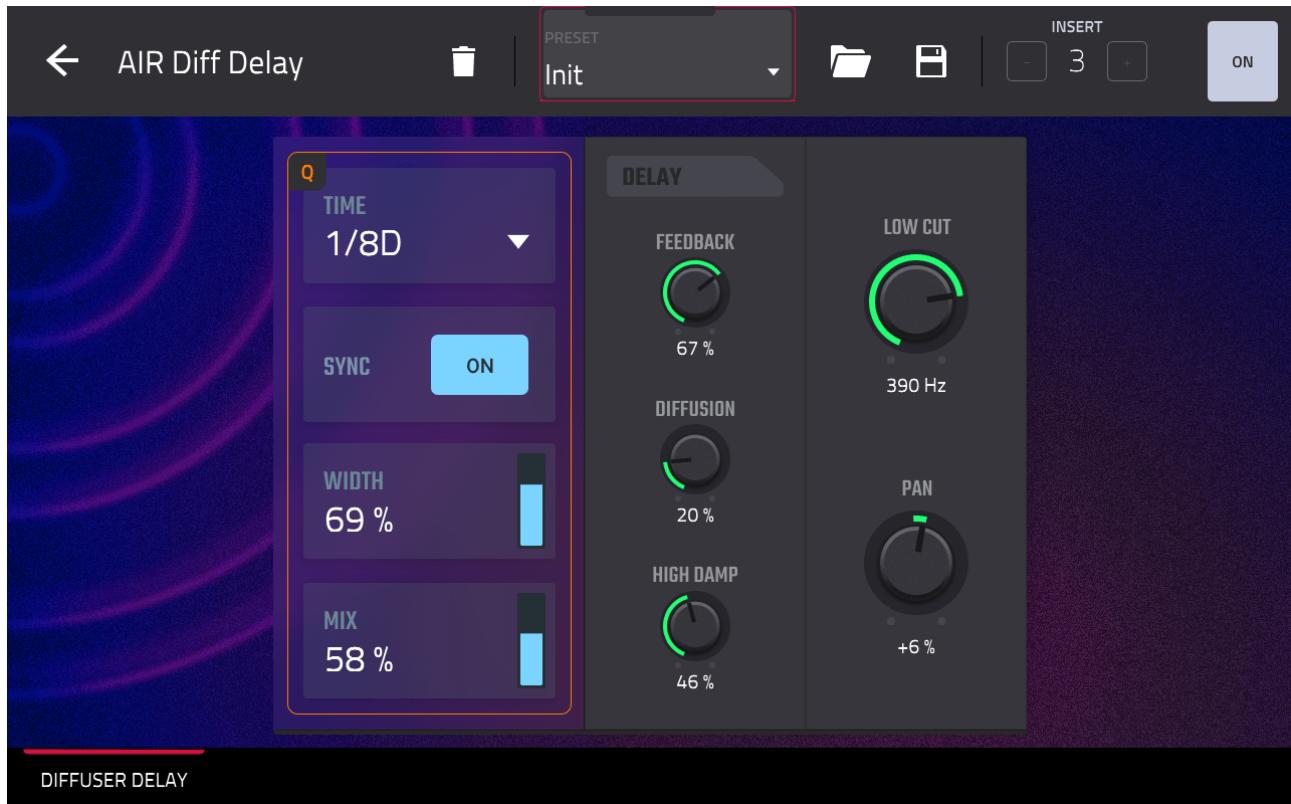
Load the FX Rack '**Fisher King.xfx**' from the **C02** folder:



You'll need to initially double tap **Fisher King.xfx** to add it to the **FILE NAME** field at the bottom of the Load screen. Then hit **LOAD**.

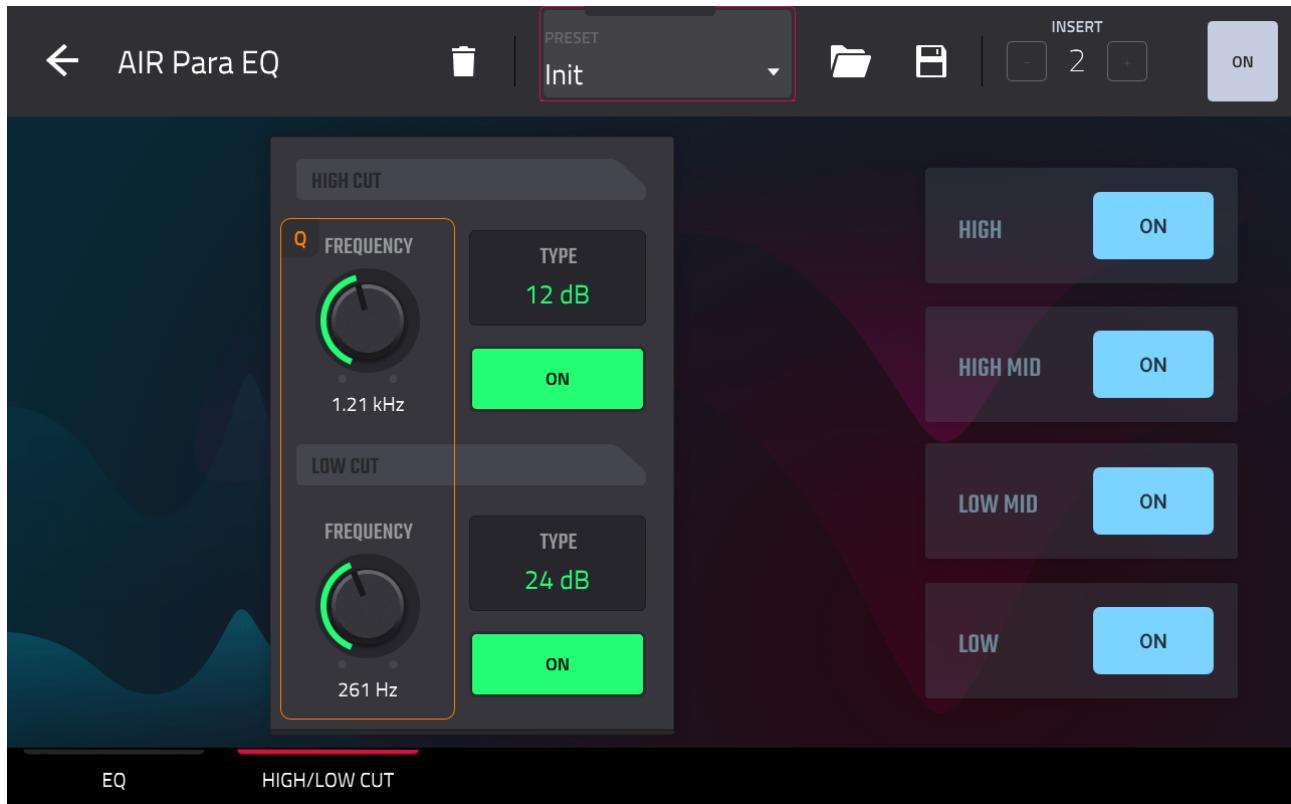


INSERT 3 features an instance of **AIR Diff Delay** with the following settings:

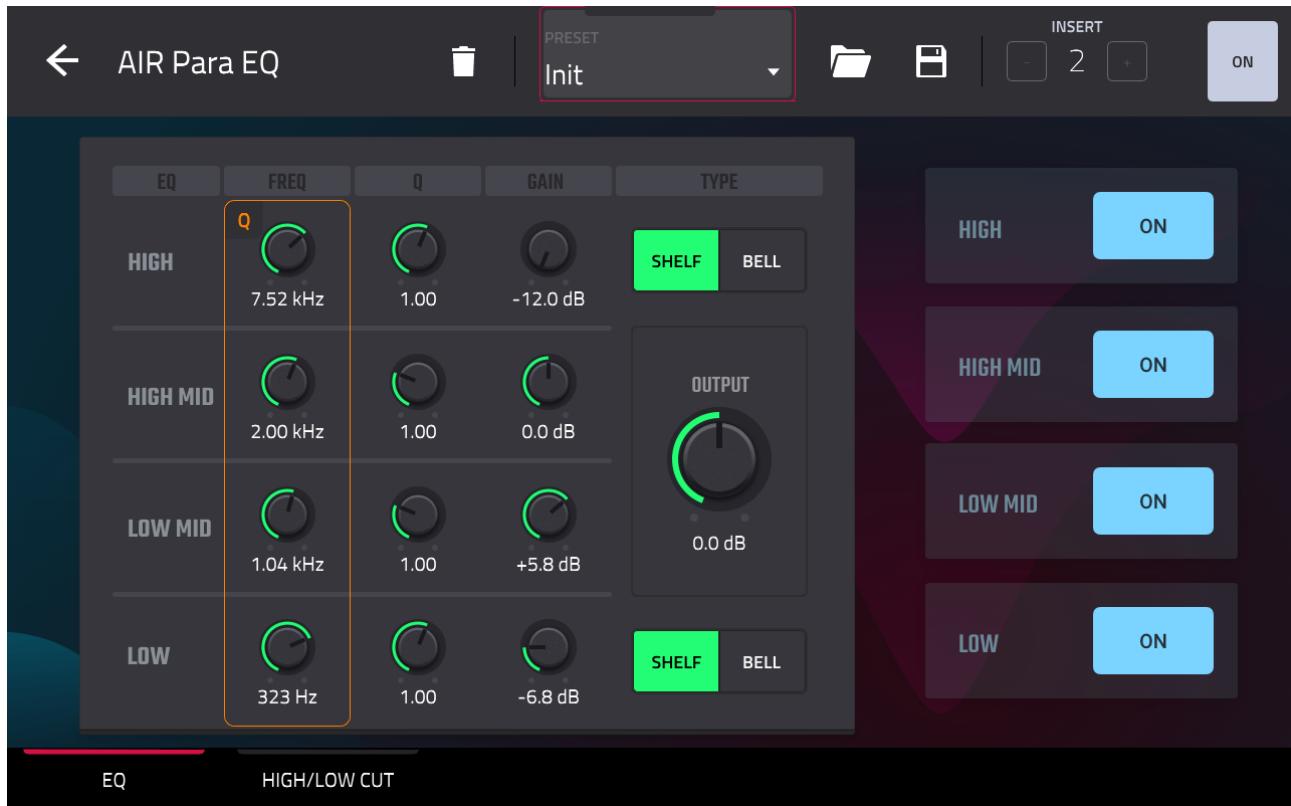


I've kept the **DIFFUSION** quite low so make the individual decays quite separated, with plenty of **LOW CUT** to ensure the delay doesn't get too muddy.

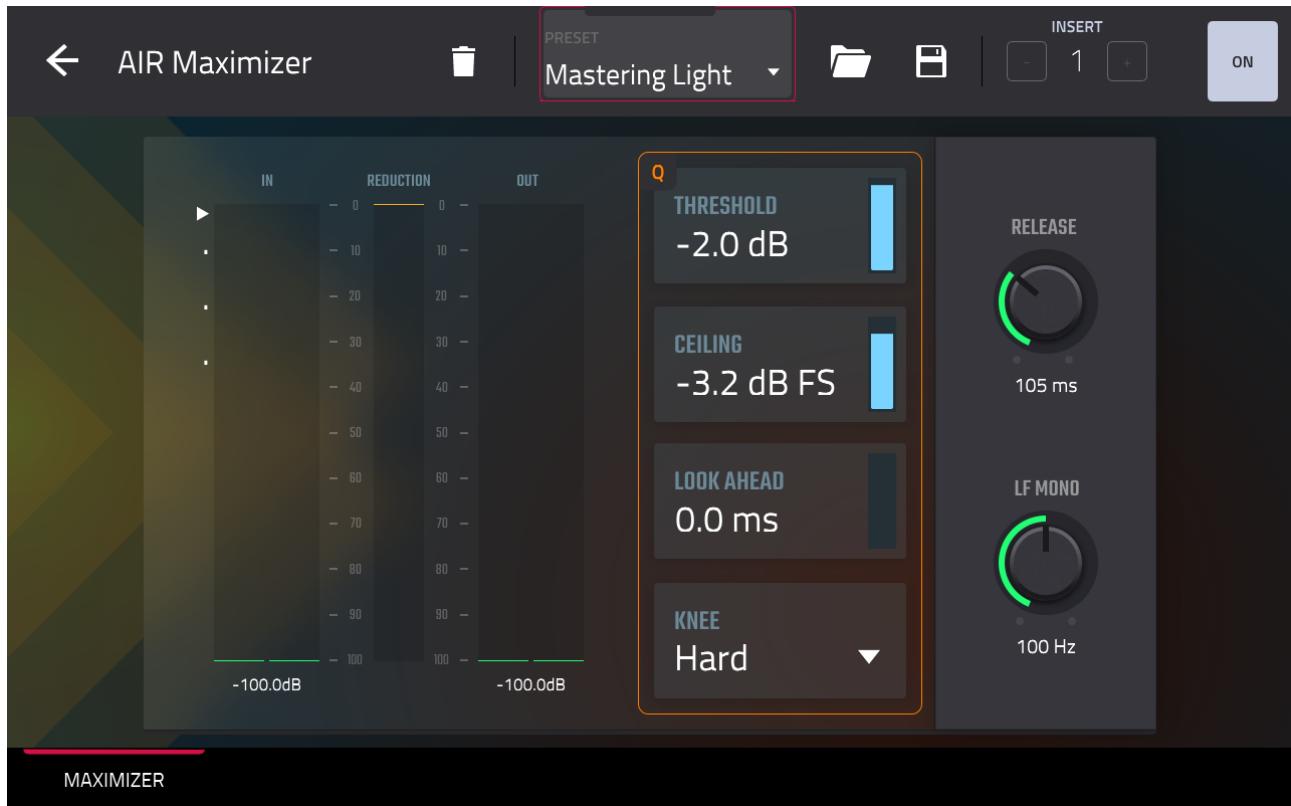
INSERT 2 is an instance of **AIR Para EQ**:



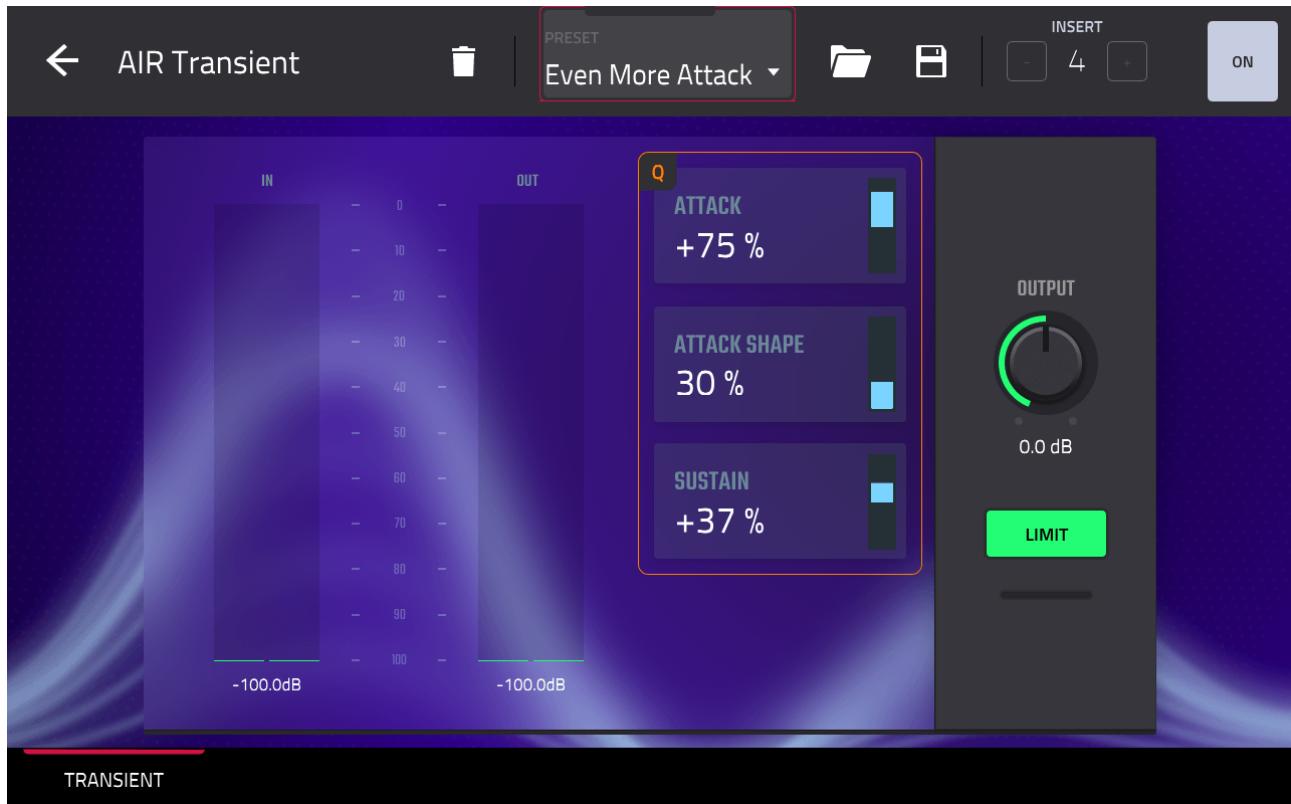
In the **HIGH/LOW CUT** screen I'm really just using this to take out all the low end rumble, so I put a **24dB LOW CUT** to take out everything under **261Hz**. I also added a **HI CUT** for everything over **2.12Hz** to take out all the hiss. In the **EQ** screen, I boosted the **LOW MID** around **1kHz** to give the instrument a deeper, bell like tone:



On **INSERT 1**, I inserted an **AIR Maximiser** which is a type of compressor designed for boosting volume levels:

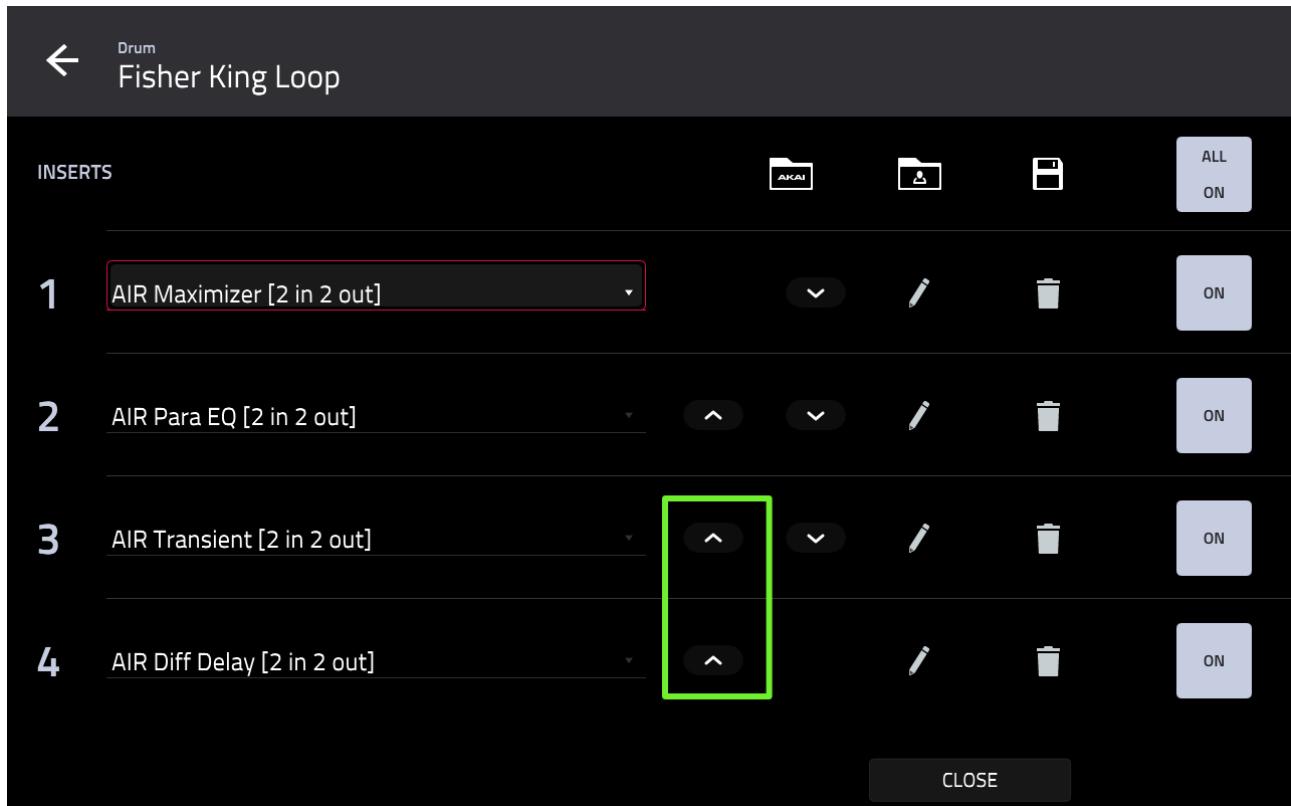


And finally the **AIR Transient** using a customised 'Even More Attack' preset:



I wanted to use this to add some additional sustain and attack to each note, and while the end result wasn't exactly what I'd originally intended, it's actually given each note a nice 'pumping' quality which works really well in this situation.

Currently the AIR Transient is last in the chain and hence acting 'on' the delay tails; you can use the arrows in the **INSERTS** screen to experiment with a different plugin order to achieve slightly different results. For example, place the **AIR Diff Delay** last in the chain:



This produces a more smooth delay effect as we are no longer applying the AIR Transient to the delay tail, instead AIR Transient is only applied to the dry sounds so it's not trying to change the transients of the delay tails. It's a subtle difference, but worth experimenting with.

Remember at this stage we're still experimenting with FX and will tweak as we progress, but adding EQ to help tame unruly sounds helps these tracks sit more comfortably in the mix while we focus on the compositional aspects.

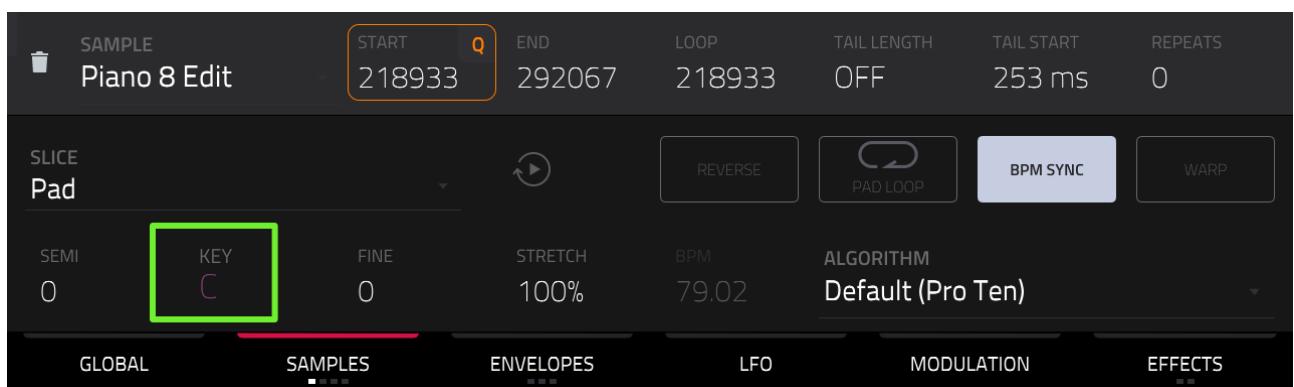
ADJUSTING PAD PARAMETERS

Finally back in **TRACK EDIT**, use **EDIT ZONES** to adjust the AMP ENVELOPE on all pads, with **ATTACK: 15** and **DECAY: 40** to help smooth out each region, along with a **TAIL LENGTH** of **500ms** to add some additional length to each chop. And yes, it sounds a bit clicky in places, but I think those clicks are actually starting to add some nice character to this, it become very ethereal.

MATCHING KEY

At this point, hit **[PLAY START]** so our **Piano Chops** track begins to play. With our **Fisher King Loop** track selected, start playing a few pads. Hopefully it should be clear that this Fisher King loop is not in the same musical key as our piano loop.

According to the **KEY** field in **TRACK EDIT > SAMPLES**, the Fisher King chops are all in the key of **A#** (also known as **Bb**), while the **Piano Loop** samples are in the key of **C**:

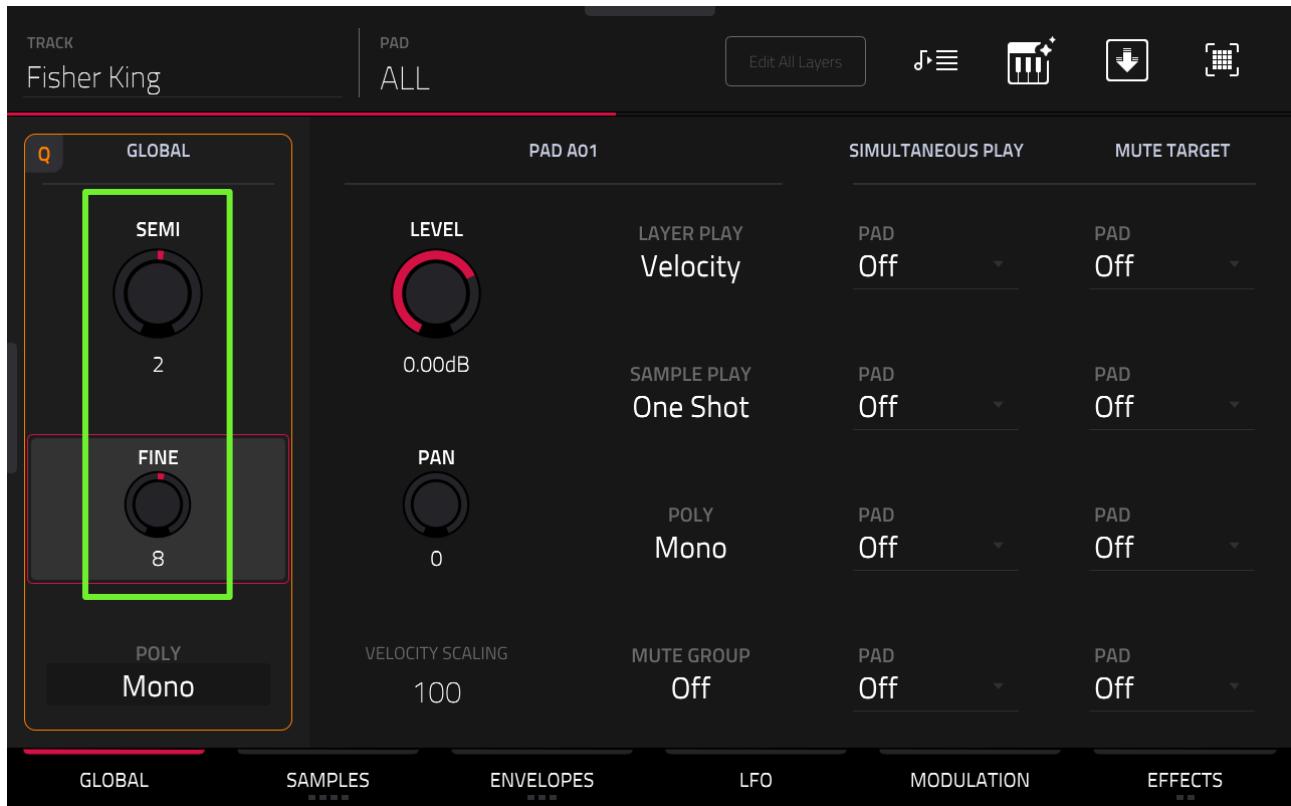


Bb is 2 semitones lower than C, so the Fisher King loop needs to be tuned 'up' by 2 semitones and hopefully it will play nicely with the piano.

There's three ways we can tune the Fisher King Loop 'chops'. First, we can re-tune the actual 'Fisher King Loop' sample itself within **SAMPLE EDIT**, (simply set '**TUNE: 2.00**'). We can re-tune the individual pad layers themselves (set **SEMI: 2** for **LAYER 1** on all 12 pads via **EDIT ZONES: ALL**), or we can retune the entire track.

Now while it would in theory normally make more sense to tune the actual sample itself, the track tuning method is generally more intuitive as it allows you to adjust the track tuning in real time while you play the actual chops themselves.

To tune the track itself, hit [**PLAY START**] so the **Piano Chops** track is playing, go to **TRACK EDIT > GLOBAL** and adjust the **SEMI** dial, setting a **SEMI: 2**. Play the pads in real time to hear how well they begin to 'fit' with the piano.



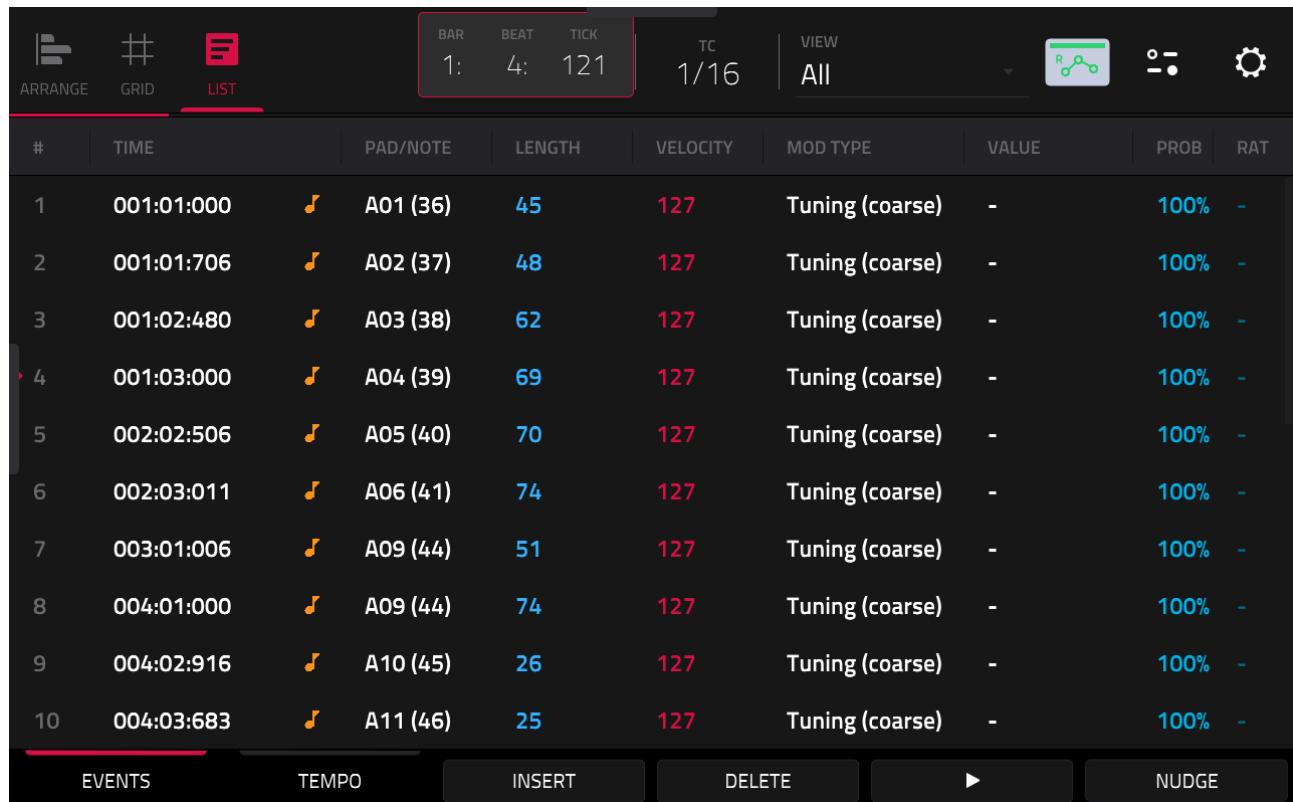
As you can see, I also added a small amount of '**FINE**' tuning as, by my ears, the Fisher King was still a little 'flat' and needed a very slight increase of a few 'cents'.

CREATING A CHOPPED MELODY

With the Piano Chops track playing, experiment with your Fisher King chops and create a nice melody to sit on top of those pianos. As before, the default kit conversion produces a monophonic track, but again, this tends to work really well when building these kinds of chopped melodies.

Once you are happy, lay down your chops to track 2 using any sequencing technique you prefer, be it real time, GRID VIEW or LIST EDIT. I

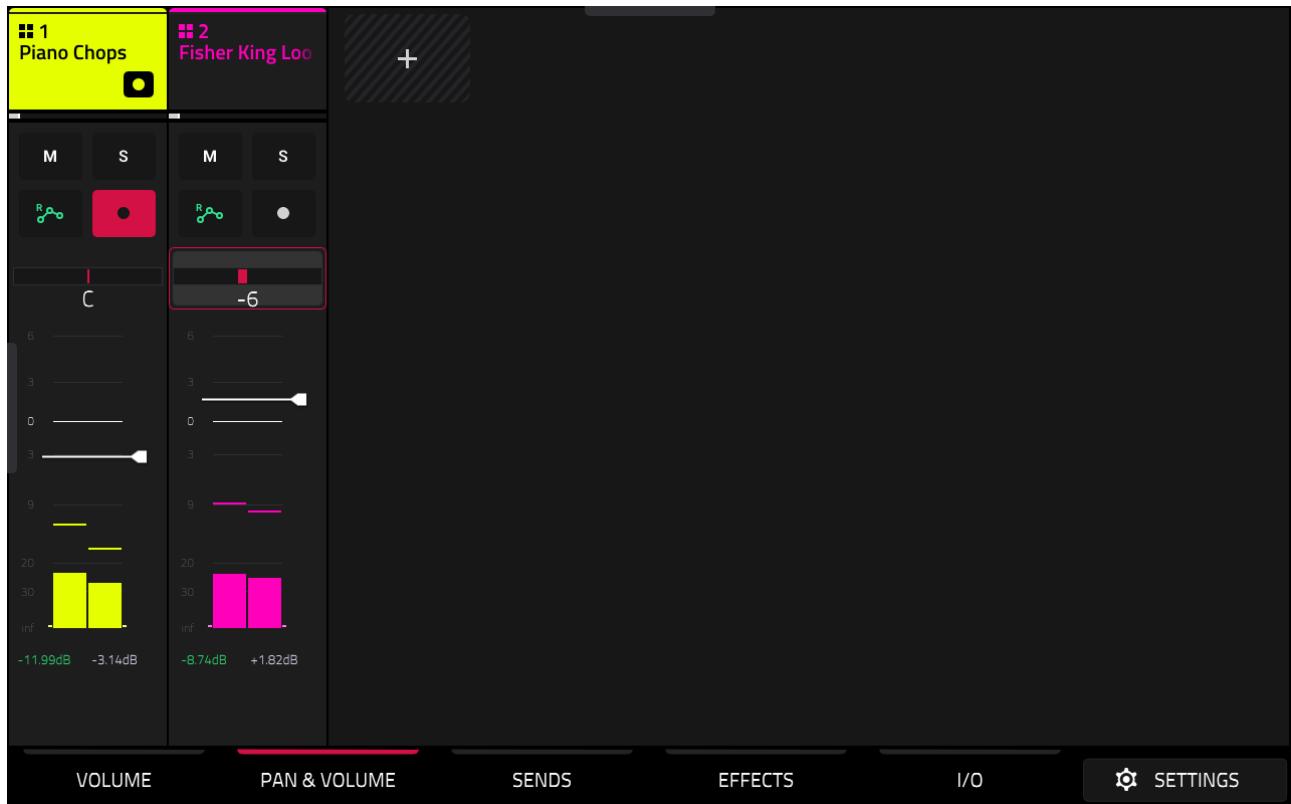
used real time recording, with **FULL LEVEL: ON** and **T.C. OFF** so I could match the un-quantized feel of the piano chops.



The screenshot shows the MPC Software interface in LIST mode. The top bar displays 'BAR 1:', 'BEAT 4:', 'TICK 121', 'TC 1/16', 'VIEW All', and various icons. The main area is a table with columns: #, TIME, PAD/NOTE, LENGTH, VELOCITY, MOD TYPE, VALUE, PROB, and RAT. The table lists 10 events, each representing a piano chop. The 'MOD TYPE' column consistently shows 'Tuning (coarse)' and the 'VALUE' column shows '-' for all events. The 'PROB' and 'RAT' columns show '100%' and '-' respectively. The bottom of the screen features buttons for EVENTS, TEMPO, INSERT, DELETE, a play button, and NUDGE.

#	TIME	PAD/NOTE	LENGTH	VELOCITY	MOD TYPE	VALUE	PROB	RAT
1	001:01:000	♪ A01 (36)	45	127	Tuning (coarse)	-	100%	-
2	001:01:706	♪ A02 (37)	48	127	Tuning (coarse)	-	100%	-
3	001:02:480	♪ A03 (38)	62	127	Tuning (coarse)	-	100%	-
4	001:03:000	♪ A04 (39)	69	127	Tuning (coarse)	-	100%	-
5	002:02:506	♪ A05 (40)	70	127	Tuning (coarse)	-	100%	-
6	002:03:011	♪ A06 (41)	74	127	Tuning (coarse)	-	100%	-
7	003:01:006	♪ A09 (44)	51	127	Tuning (coarse)	-	100%	-
8	004:01:000	♪ A09 (44)	74	127	Tuning (coarse)	-	100%	-
9	004:02:916	♪ A10 (45)	26	127	Tuning (coarse)	-	100%	-
10	004:03:683	♪ A11 (46)	25	127	Tuning (coarse)	-	100%	-

I then used the **CHANNEL MIXER** to roughly balance the two tracks together – I also added a little left panning on the Fisher King track.



Save your project to your 'Projects' folder and load the project file **C2 Chopped Melody.xpj** for my version of the song so far.

With our basic theme in place it's time to start adding additional components to our song. We'll revisit chopping later when we build a multisampled drum kit, but in the next few chapters I want to concentrate on some more intermediate and advanced ways of working with MIDI and keygroup instruments.

C03: WORKING WITH HARDWARE SYNTHS

In this tutorial we'll learn how to incorporate hardware synths into a standalone MPC environment.

TOPICS COVERED IN THIS CHAPTER

- ✓ Connecting hardware MIDI synths
- ✓ MIDI & Audio routing options
- ✓ MIDI track configuration
- ✓ Recording audio from hardware synths
- ✓ **Workshop:** Setting up MIDI controllers

USING MIDI WITH YOUR MPC

We know the MPC contains a powerful MIDI sequencer which utilises MIDI to trigger notes from our various internal sound sources, be it drum kits, keygroup instruments or synth plugins.

We are however not limited to working only with internal sound sources because the MPC is more than capable of triggering and recording sounds from externally connected hardware such as analog synths, drum machines and powerful digital workstations.

In this part of the course I'm going to explain how to both trigger and record performances from any MIDI-enabled hardware synth along with options to transform these 'out of box' sound sources into 'in the box' tracks (be it audio tracks, samples or 'auto sampled' instruments).

So within this particular tutorial I'm going to have to assume you have a hardware synth that you can use to recreate the examples, if not you can just read through for future reference. But either way, once we get to the recording stages of this chapter I'll provide you with some pre-recorded examples that can be used to continue the current song project to completion.

CONNECTING A HARDWARE SYNTH VIA MIDI

The first step to carry out when connecting external synths is to create a MIDI connection from the MPC to the hardware synth. A large majority of modern synths now support class compliant USB MIDI, in which case creating a MIDI connection to the synth is fairly painless.

First make sure your synth is powered up and connect a USB cable from the MPC's **USB 'A'** port to the synth's USB port (typically the synth will use a **USB 'B' port**):



If you don't have a spare USB port then consider attaching a powered USB hub to your MPC, allowing for up to 32 USB MIDI devices to be connected, while simultaneously allowing you to connect more USB storage.

If your synth does not support USB MIDI connections then it you can use a traditional MIDI cable instead. Your MPC will have at least one MIDI output port (plus one or more MIDI 'input' ports); on some models these are full size MIDI DIN ports, but on some units (e.g. MPC One) you'll need to use the provided MIDI adapters:

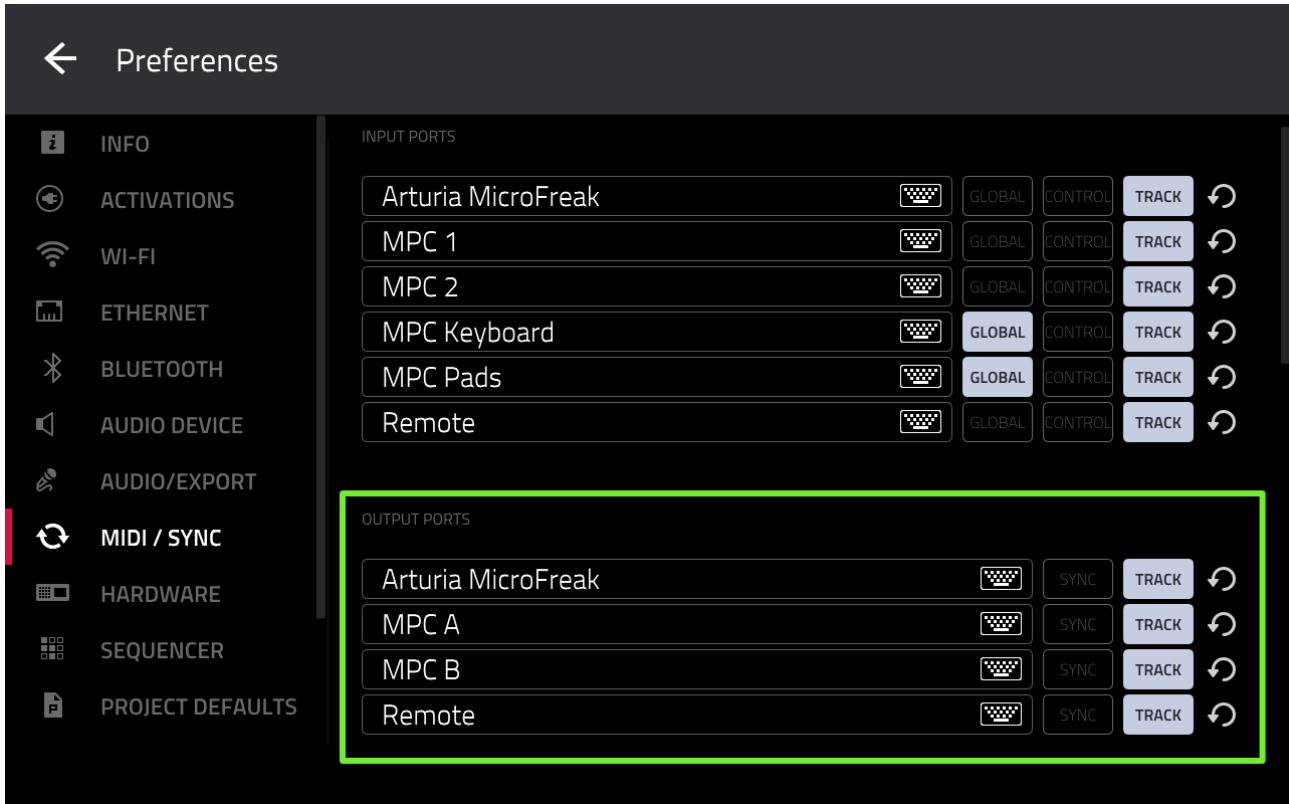


Connect a MIDI cable from a spare **MPC MIDI 'OUT'** port to the **MIDI IN** (input') port of your synth. I'll assume you've used MPC MIDI output 'A':



Depending on your MPC model, you may have between one and four MIDI output ports available to use, it doesn't matter which one you choose.

After connecting, head over to **[MENU] > PREFERENCES > MIDI/SYNC:**



This lists all currently supported MIDI ports available to your MPC. If the USB connection is successful you should now see your hardware synth itself listed as an available MIDI port, typically under both **INPUT PORTS** and **OUTPUT PORTS**, and normally it should be listed by the synth's actual name.

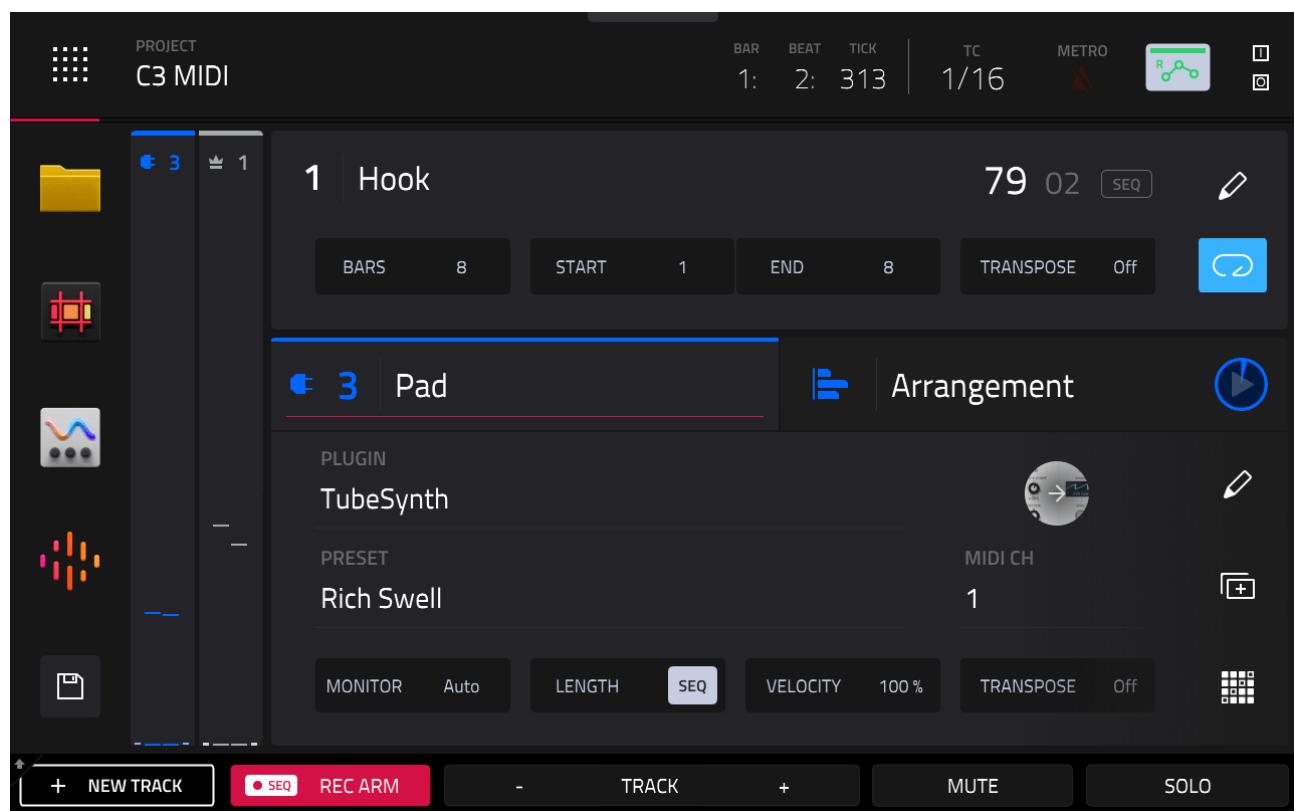
When controlling external synths, the relevant settings will be the **OUTPUT PORTS** section. If you used a traditional MIDI port instead of USB, then port '**MPC A**' would refer to the physical **MIDI OUT 'A'**, and so on for any further MIDI ports on your MPC. If your MPC only has a single MIDI port then this will just be listed as '**MIDI Port**'.

By default, all MIDI output ports are given 'track' privileges, which is exactly what we'll need in order to send MIDI messages from our MPC sequencer tracks, so just leave the '**TRACK**' button 'active'.

Notice that you also have a keyboard icon here, so you can if you wish rename the port to reflect the synth currently connected to a physical MIDI port (this is the name that will be used within sequencer tracks).

CONFIGURING SEQUENCE TRACKS FOR MIDI HARDWARE

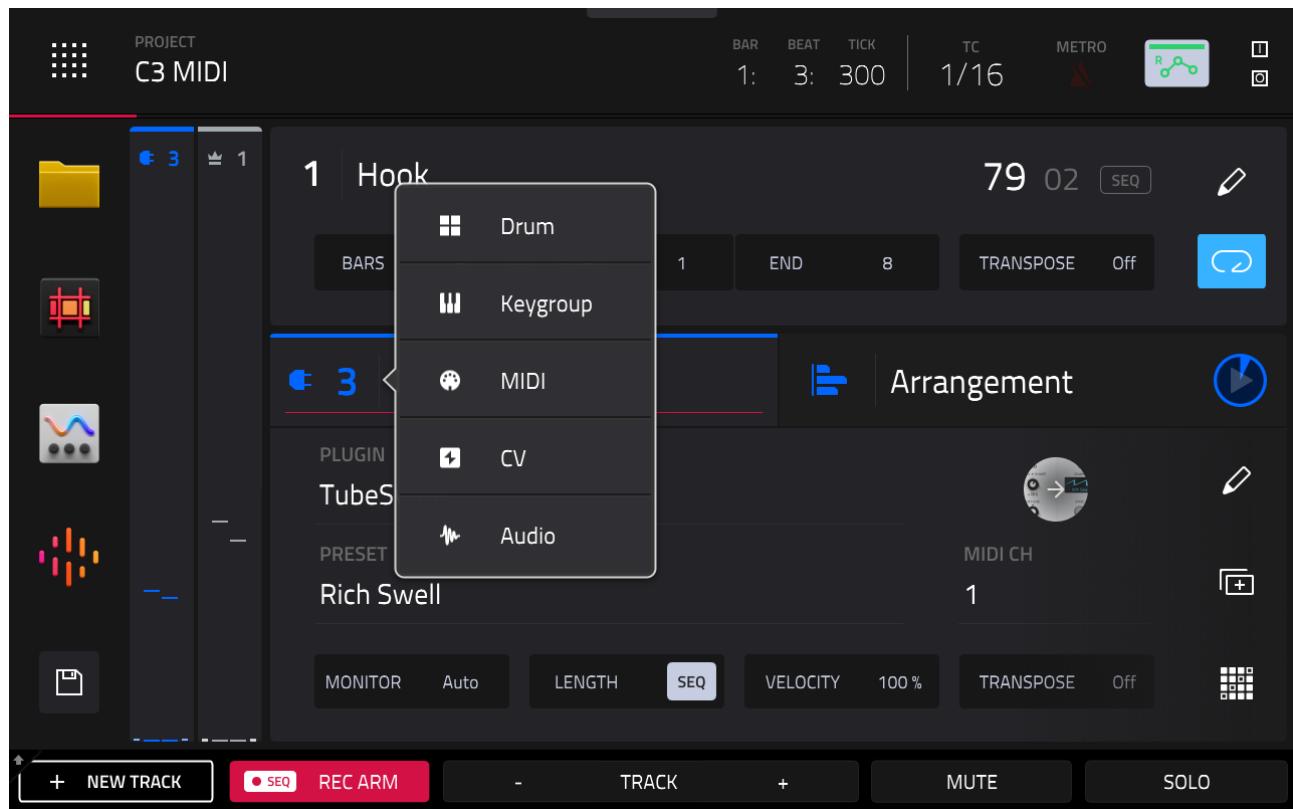
Load up the project **C03 MIDI.xpj**, which is a copy of our currently active project for this section of the course. Go to [**MAIN**] and select **track 3 ('Pad')**.



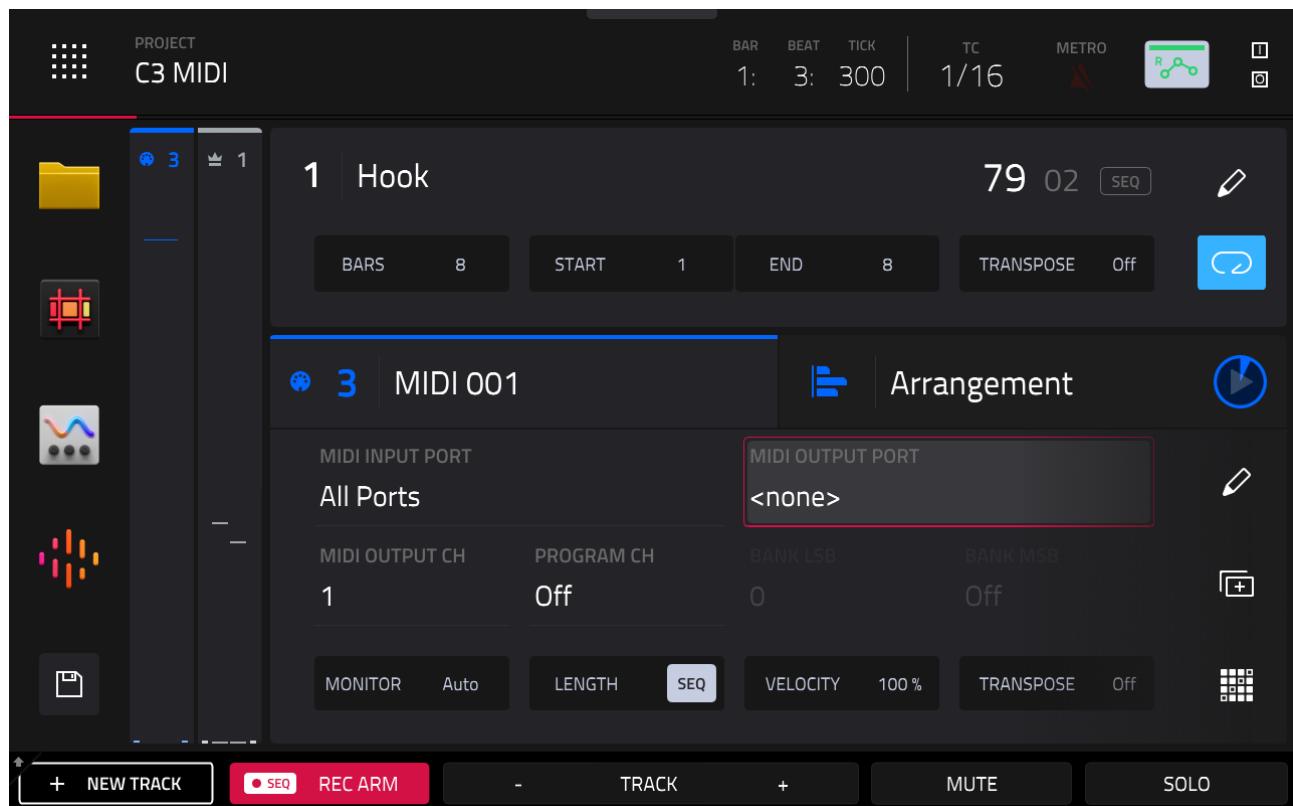
This is currently a **PLUGIN** track on which I've just assigned **TubeSynth** running the default '**Rich Swell**' preset. I've also recorded a little pattern to this, just to hear the track playing along to the existing Piano Chops and Fisher King tracks (press [PLAY START] to hear them).

Now, a **MIDI** track is almost identical to a **PLUGIN** track except it doesn't have any sound source assigned to it, it's completely blank in that respect. The 'sound source' for a MIDI track is the externally connected hardware synth that you point it to.

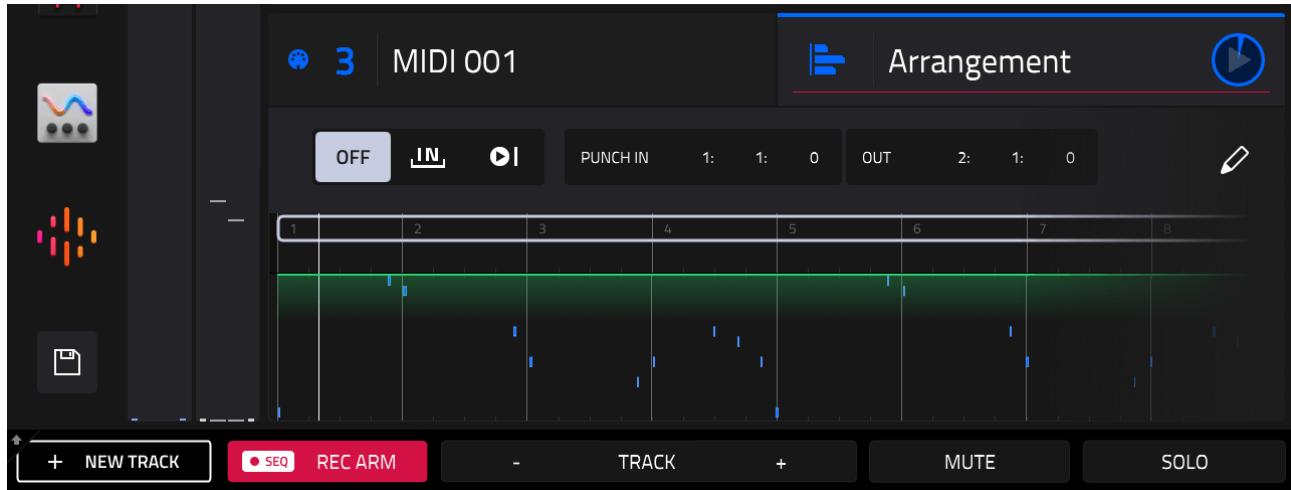
Let's change this PLUGIN track to a **MIDI** track. Hold down on the plugin icon and from the list, select **MIDI**:



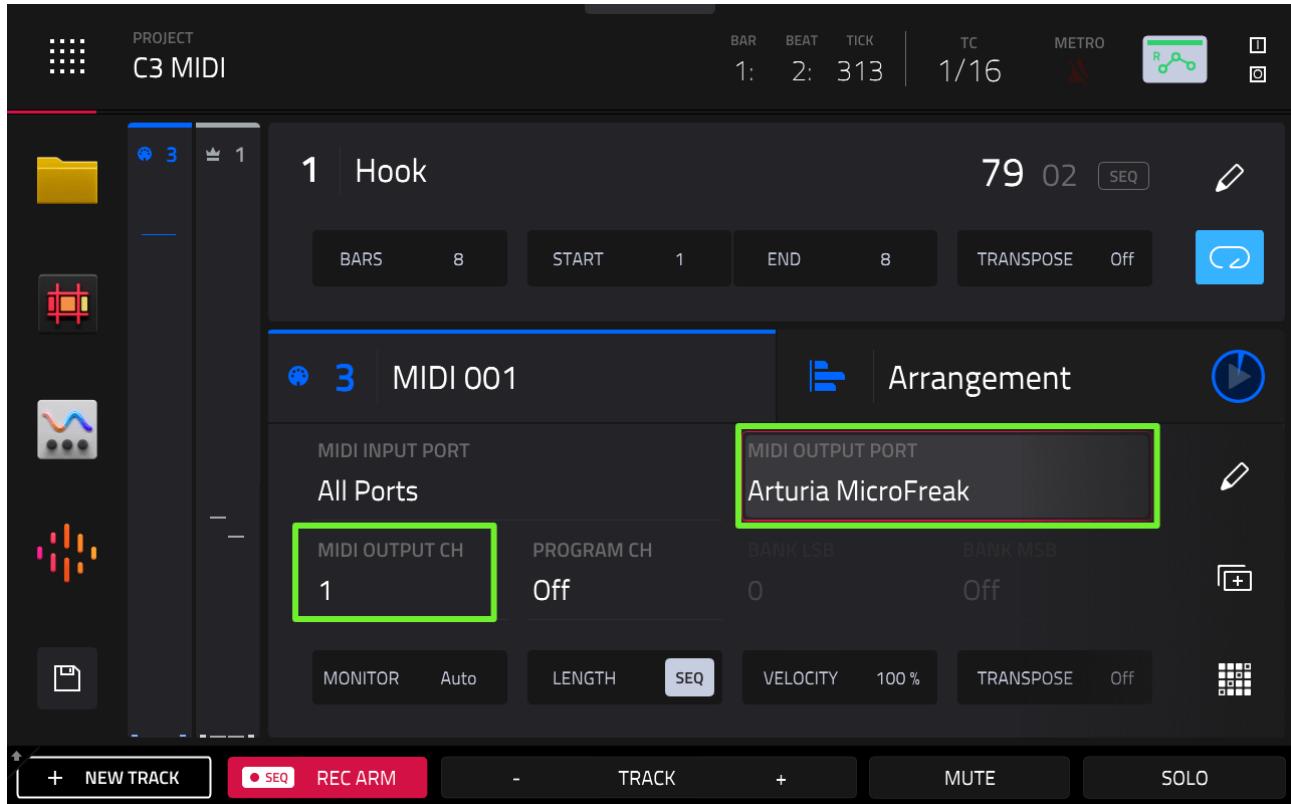
The track is now converted to a **MIDI** track:



If you temporarily tap on the **Arrangement** tab you'll see the events have remained, so once we assign a MIDI synth to this track, those events are going to trigger the sounds of the external synth (rather than the sounds of the internal plugin that was configured there previously).



Back in the main **Track Tab**, single tap the **MIDI OUTPUT PORT** parameter and select the **MIDI output port** you used to connect to your hardware synth; for USB connections this will be the name shown in the **MIDI/SYNC** page, otherwise select the entry that refers to the traditional MIDI output port you used. I'm going to use an Arturia Microfreak connected via USB:



With the MIDI output port set, the MPC will now be able to send MIDI from this track directly to your synth.

Now, a single MIDI connection is actually able to transmit *sixteen* independent MIDI signals over one MIDI connection, with each MIDI signal being assigned to a unique **MIDI Channel**. The patch you've set up on your connected synth will be configured to receive MIDI on a specific MIDI channel, so in addition to the MIDI output port, it's important to also set the correct **MIDI OUTPUT CHANNEL** for your track.

You'll need to check your synth's set up guide to see what MIDI channel you'll need to use; you'll probably be able to set any channel you wish, but it's common to use **MIDI channel 1** by default, unless you are connecting a drum machine where the default would be **MIDI channel 10**.



Some synths are multi-timbral and can be configured to control multiple patches over multiple MIDI channels (all from a single MIDI connection). For example on an Akai Rhythm Wolf the drum sounds are triggered via MIDI channel 10, while the integrated bass synth is triggered via MIDI channel 1.

From a MIDI perspective, this is the bare minimum you'll need to configure to achieve the goal of triggering sounds from an external synth. So while we have the basic MIDI connection set up and even have some MIDI events recorded to our MIDI track, there's still one important aspect missing; audio.

ROUTING SYNTH AUDIO TO YOUR MPC

In order to hear the sounds on your synth being triggered via MIDI you'll need to connect your synth's audio outputs 'somewhere'. For a standalone MPC connected to a single synth, a common destination for your synth audio is actually your MPC itself, where it can be routed into the MPC's own audio inputs.

This not only simplifies the entire audio chain (no need for an additional mixer), it also means you can easily record your synth output directly to MPC audio tracks (or via the sampler).

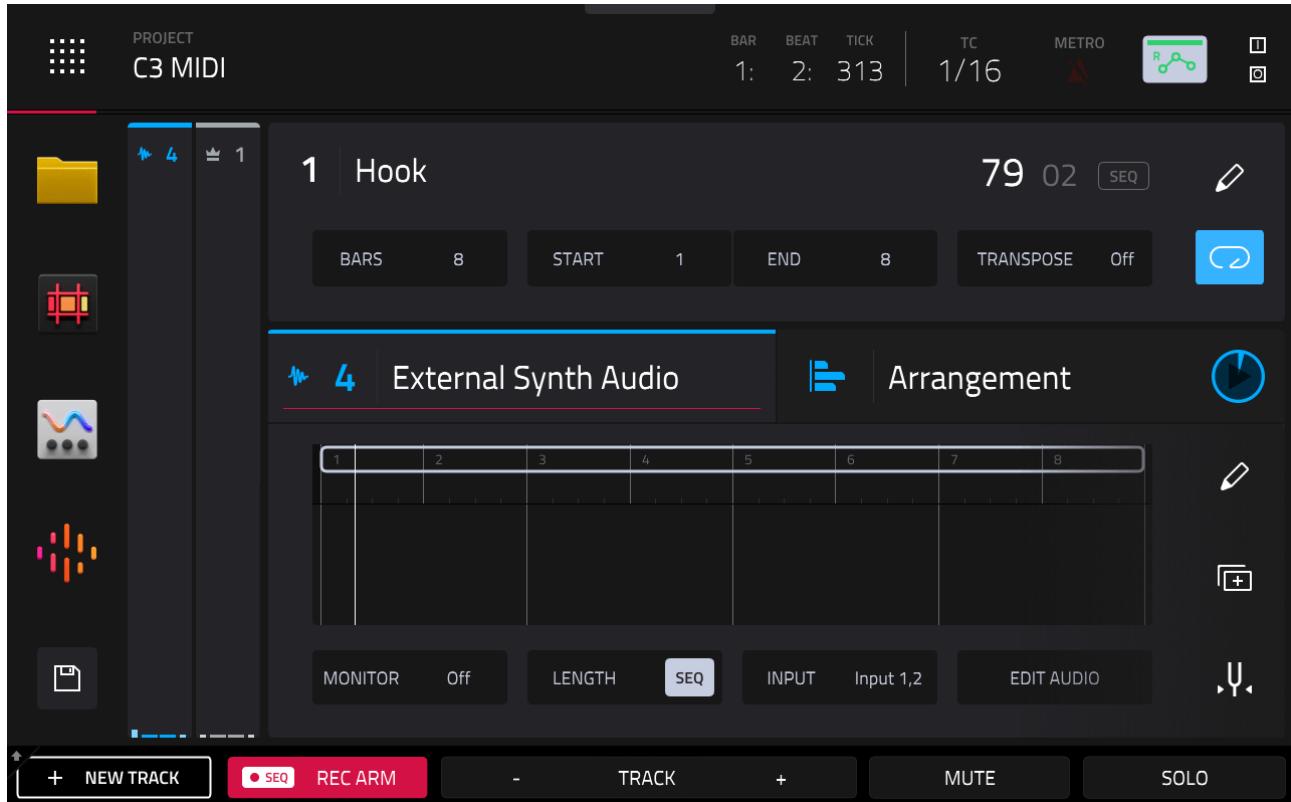
Your synth will have a minimum of one audio output (e.g. analog mono synth), more often a stereo output, and sometimes multiple individual outputs (for example many drum machines have a dedicated output for each drum voice).

If your synth only has a single (mono) output, just connect that to the 'left' MPC audio input. If your synth has a stereo output, connect those two audio outputs into your MPC's 'L & R' audio inputs:



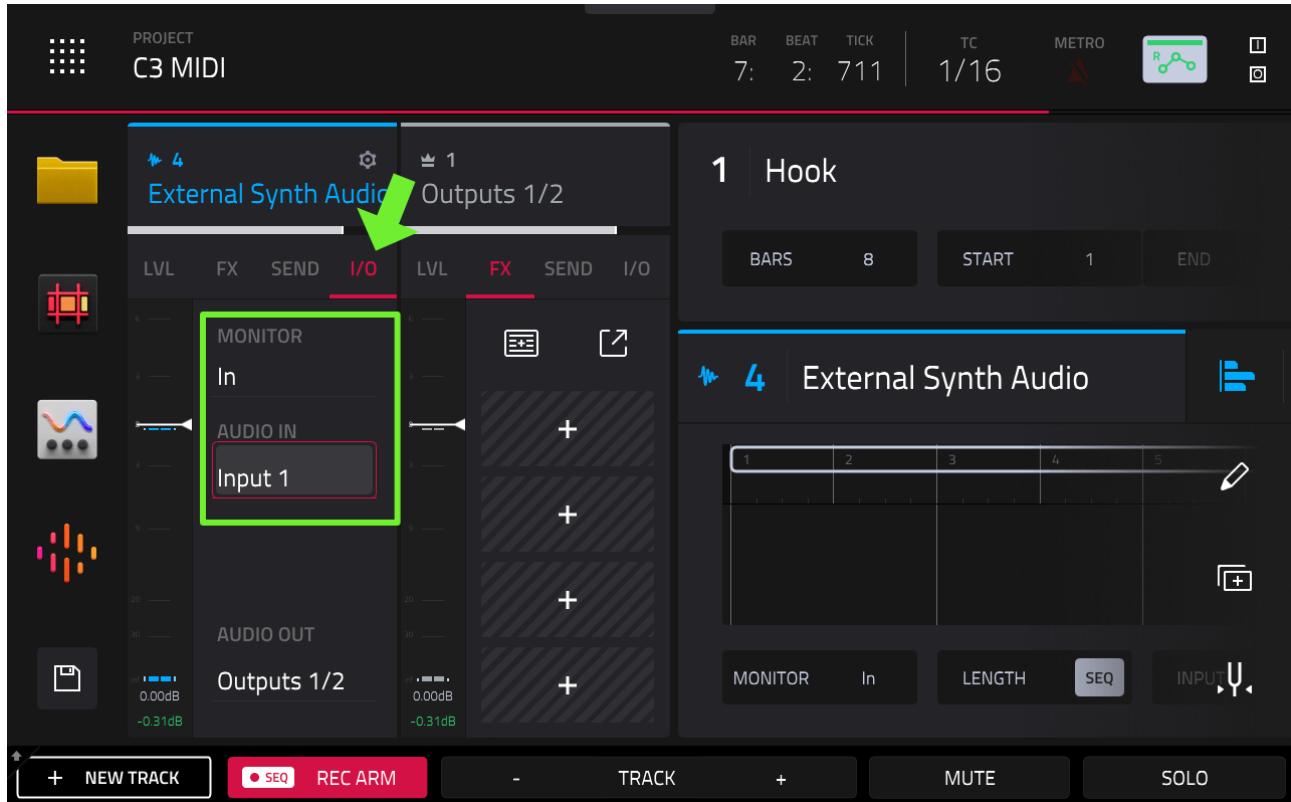
Now in your current project, hit **+NEW TRACK** and create an AUDIO track; call it '**External Synth Audio**'. I recommend you give it the same colour as the associated MIDI track, maybe a slightly different shade.

C03: WORKING WITH HARDWARE SYNTHS



Track colours are set within the TRACK SETTINGS dialog, by holding down on the track 'header'/track name in MAIN or ARRANGE

Expand the **XL Channel Strip** and select the **I/O** tab:

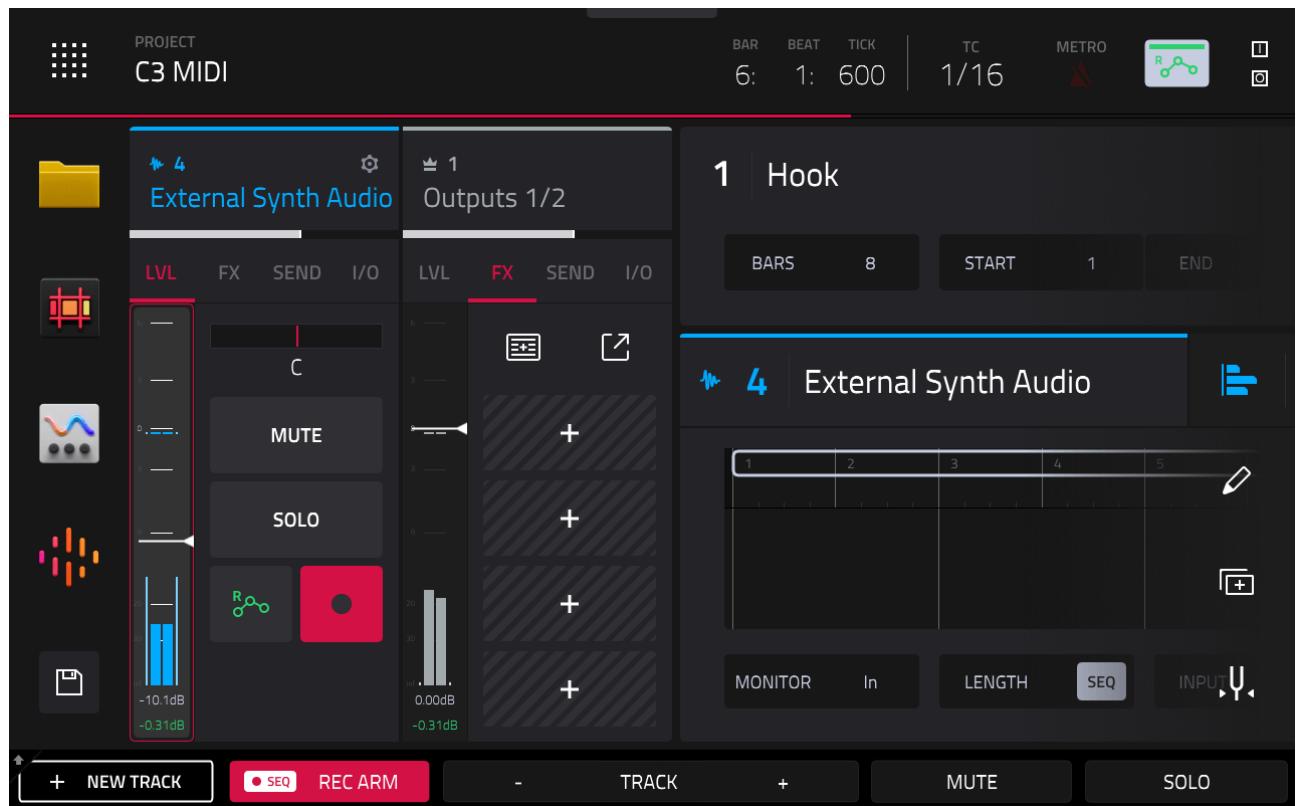


Set **AUDIO IN** to match the MPC inputs that you connected your synth to – typically, '**Input 1,2**', but for a mono synth like the Arturia Microfreak set it to **Input 1**. Now set **MONITOR: In**. This ensures you can always hear your connected synth even when the audio track itself is not currently selected or armed.

Before proceeding, make sure the master volume of your synth is set low, this helps avoid any unexpectedly loud signals running through our system.

Hit [**PLAY START**], start bringing up the volume on your synth and the MIDI events we loaded into the '**External Synth MIDI**' track should be triggering the audio from your synth (which is now being fed into the MPC and coming out of the MPC audio outputs).

With the audio still playing, select the **LVL** tab and adjust the volume of your synth using the XL Channel Strip on the audio track so it sits nicely with all the rest of the tracks in the current sequence.



At this point you can move back to the MIDI track and record/overdub just like you would on a plugin, keygroup or drum track – the MIDI events are stored on the MIDI track and the audio output is just routed to the audio track.



If you have an external FX box, such as a guitar pedal or hardware compressor and wish to apply this to your synth signal in real time you can easily incorporate this into the signal chain; simply connect your synth output(s) into the FX box and then

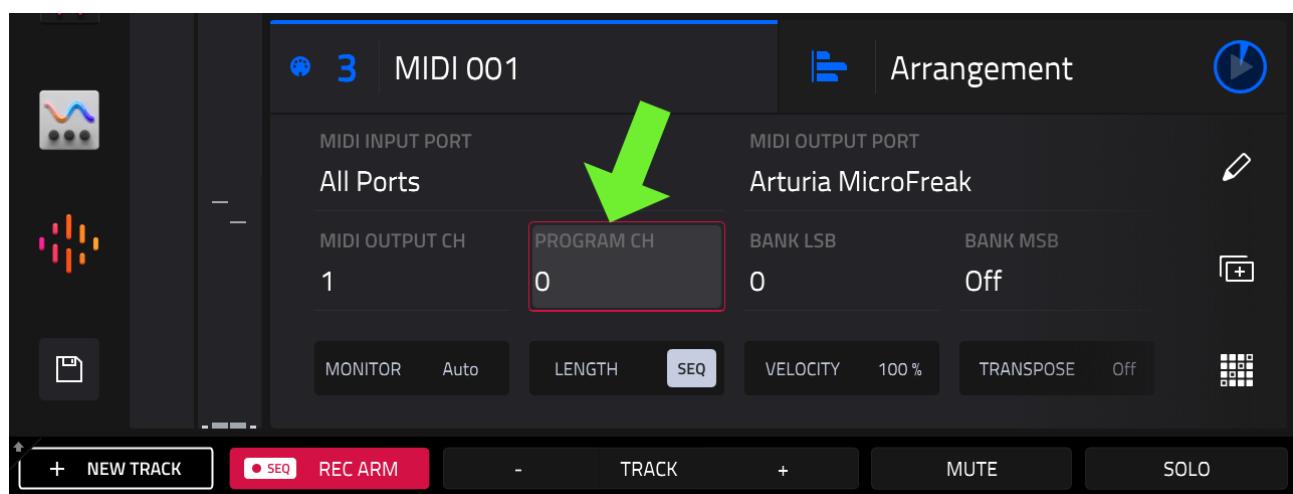
connect the output of the FX box into the MPC. Use the 'bypass' button on your effects unit to disable it from the signal.

SETTING SYNTH PRESETS FROM THE MPC

We've talked about configuring a '**patch**' in your synth, and by this I mean a collection of specific settings that produce a desired instrument sound . Many synths allow you to store these different configurations as '**presets**' which can be recalled by selection a specific preset number within the synth. Most synths also come with a collection of ready-made presets.

While you can manually select a preset in your synth, it's also possible to have the MPC control which preset is selected. It does this by sending **program change** messages to your synth.

In **[MAIN]**, select your **External Synth MIDI** track. Tap on the **PROGRAM CH** parameter and set it from OFF to **0**:



With **PROGRAM CH** ('program change') enabled and set to '**0**', this MIDI track will now send a program change message to the synth that tells it to select a specific preset. The preset number in your synth will be the program change '+1', so a **PROGRAM CH** of **0** means 'select preset 1'.

Change **PROGRAM CH** to a different number, say, **PROGRAM CH: 5**. You should see your synth select **preset number 6**.

Program change numbers run from 0 to 127 and correlate to presets 1 to 128 on your synth. Most synths actually have more than 128 presets, for example the Microfreak has 384 presets. To access presets 129 onwards we use **LSB** and/or **MSB** messages, which tell your synth which 'bank' of 128 presets to access.

You'll need to consult the user guide for your synth to discover exactly how your synth likes to receive bank change requests, but as an example, my Microfreak uses MSB to access presets banks. BANK 0 covers presets 1-128, BANK 1 covers presets 129-256 and so on.

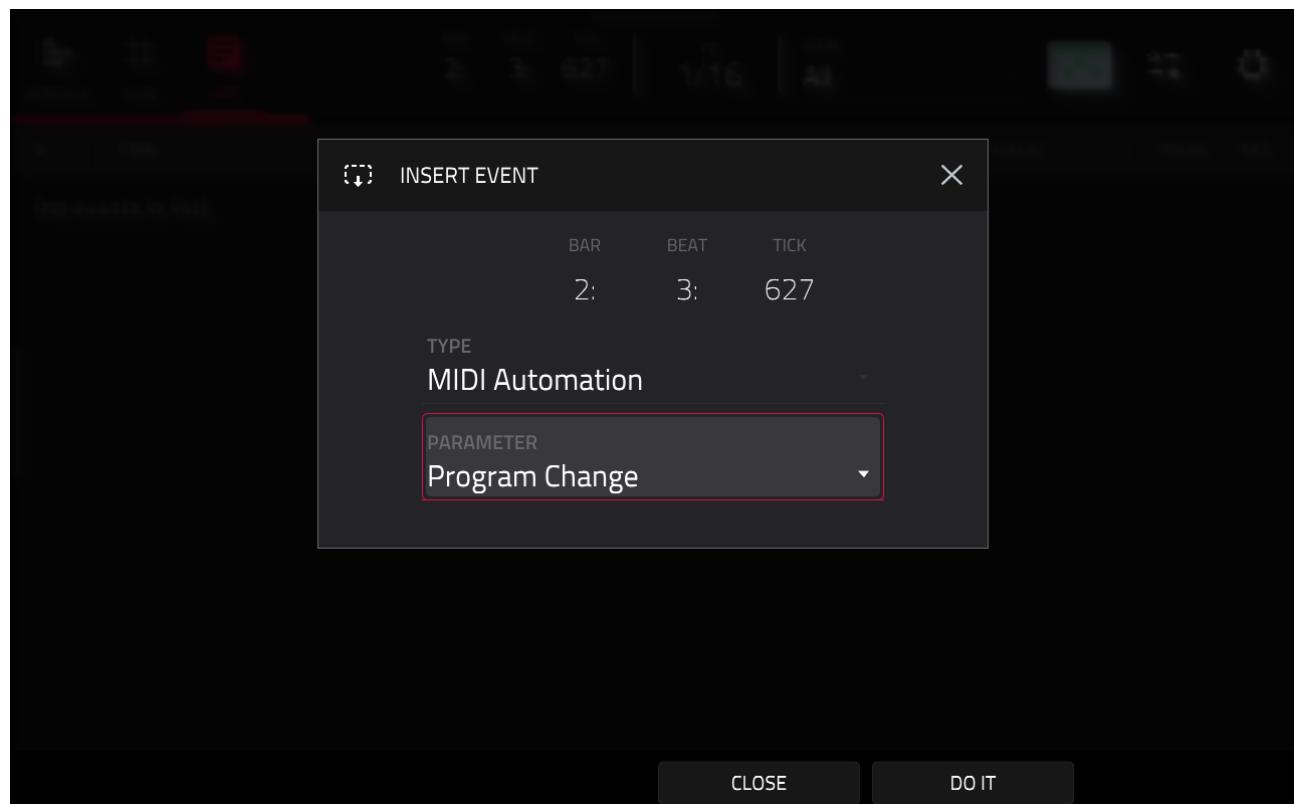
Hence, if we want this MIDI track to set preset 129 on our synth, we configure the track with a **BANK MSB** of **1** and a **PROGRAM CH** of **0**



If you would rather configure the preset manually on your synth itself, just leave PROGRAM CH set to Off.

We can also change preset at any point within sequence itself using **PROGRAM CHANGE** events. Go to **LIST EDIT** and press **INSERT > MIDI**

Automation and from the list of available **PARAMETERS** select **Program Change** (it's towards the very end of the list):



Hit **DO IT** to enter a program change event:

The screenshot shows the MPC software in 'LIST' mode. The top bar shows 'ARRANGE', 'GRID', and 'LIST' buttons, with 'LIST' being active. It also shows 'BAR' 2, 'BEAT' 3, 'TICK' 627, 'TC' 1/16, and 'VIEW' set to 'All'. The main area is a table of events:

#	TIME	PAD/NOTE	LENGTH	VELOCITY	MOD TYPE	VALUE	PROB	RAT
11	002:01:186	E 3 (64)			Aftertouch	17%		
12	002:01:197	E 3 (64)			Aftertouch	12%		
13	002:03:627				Program Change	0%		
14	002:04:543	C 4 (72)	516	127			100%	-

A green box highlights the 'Program Change' column for event 13, which has a value of 0%.

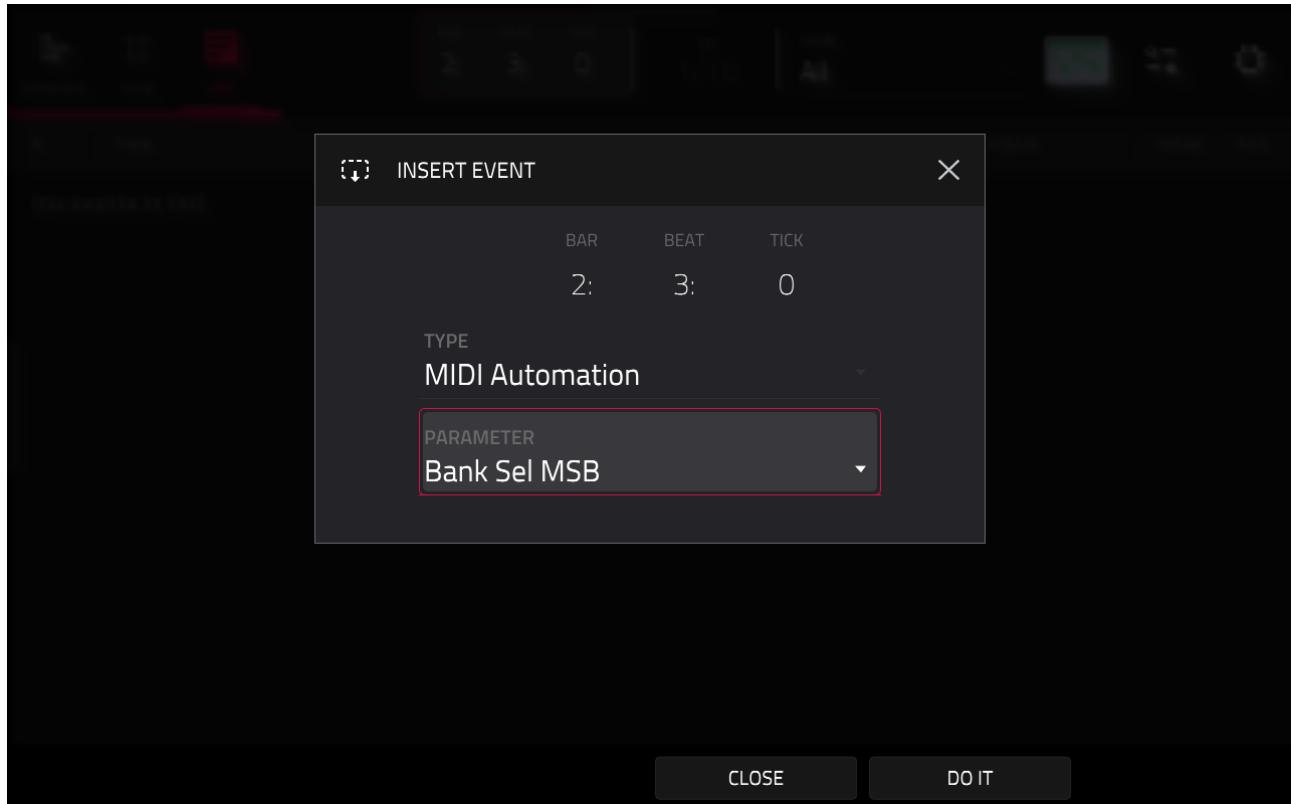
Now at the time of writing, program changes in LIST EDIT are affected by a bug. The PROGRAM CHANGE value is given as a percentage (0-100%), but we know that program changes are measured on a scale of 0-127. This of course makes it tricky to find the correct program change for a specific preset.

With the **VALUE** selected, if you turn your (DATA WHEEL) you'll notice that the **%** value does not visibly change on every 'click' – but even when the **%** does not change, there is a program change value 'behind the scenes'.

Currently the most reliable way to work out the suitable PROGRAM CHANGE value to enter in LIST EDIT is to insert the program change event, select the **VALUE** and turn the (DATA WHEEL) to roughly where you think the program change will be. Then press the **PLAY** (triangle) button in the bottom menu bar to 'trigger' the program change event. Observe the selected preset on your synth and continue using the (DATA WHEEL) and the **PLAY** button combo until you eventually trigger the desired preset on your synth.

So for the moment, program changes in sequences are a lot of hassle to configure, but hopefully this will be addressed by Akai soon.

Also note that you can also send bank changes in LIST EDIT, so you are not limited by the bank set in the MIDI Track configuration. Use **INSERT > MIDI Automation** and select either **Bank Set MSB** or **Bank Set LSB**:



These are correctly displayed as values from 0-127. Make sure the bank change is added *before* the program change.

11	002:01:171	♩	E 3 (64)	Aftertouch	27%
12	002:01:186	♩	E 3 (64)	Aftertouch	17%
13	002:01:197	♩	E 3 (64)	Aftertouch	12%
14	002:03:000	■♩		Bank Sel MSB	1
15	002:03:627	♩		Program Change	24%
16	002:04:543	♪	C 4 (72) 516 127		100% -

RECORDING EXTERNAL SYNTH AUDIO

The configuration so far will ensure that any MIDI performances recorded to your MIDI tracks are sent to the appropriate external synth, with the triggered synth audio returned to, and heard through, one or more MPC audio inputs. When you re-load the project at a later date your project will sound identical as long as a) the synth is still connected to your MPC and b) the same patch is configured in the synth.

The issue is that the synth audio is not currently 'captured' within your project. When you save your project, you only save the MIDI events on the MPC track along with the MIDI track configuration, so when you re-load that project your song will only sound identical if the synth you used is available and connected.

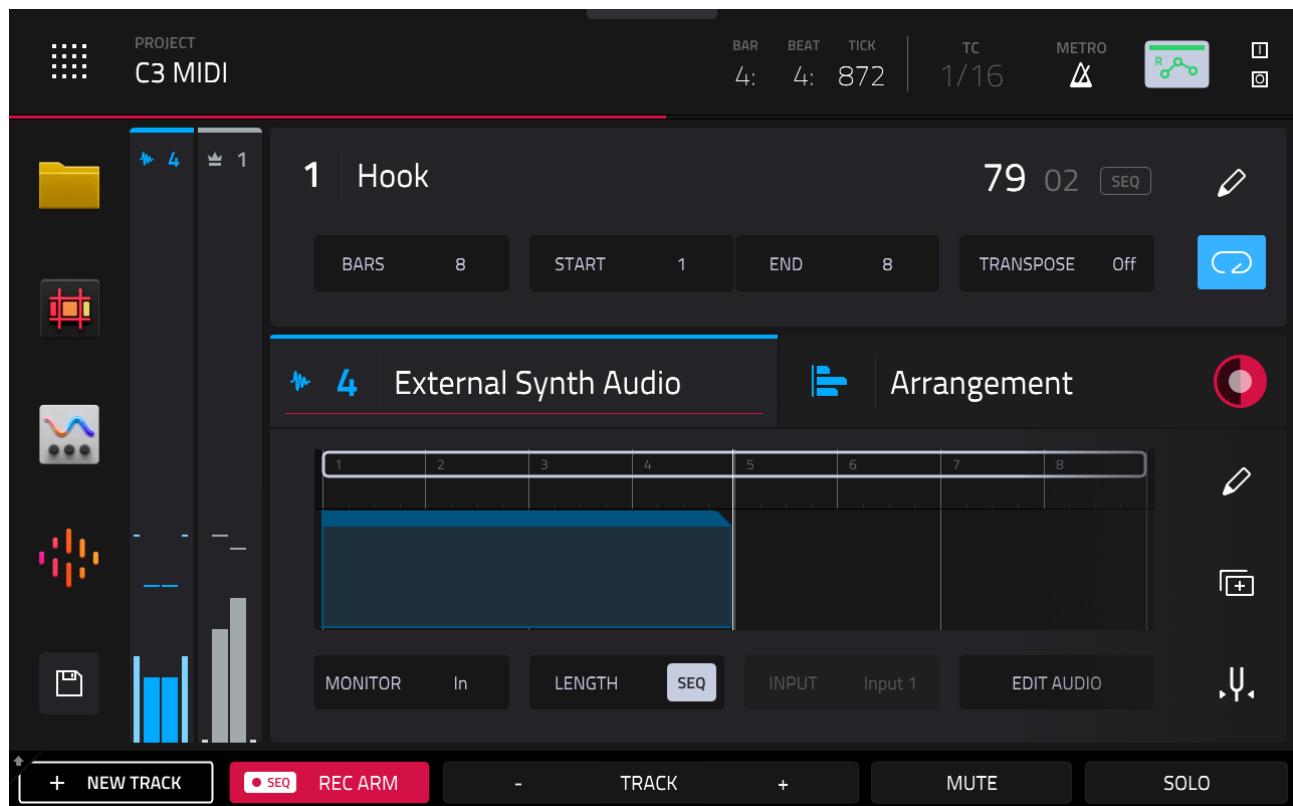
Additionally not all synths remember patches; most analog synths rely entirely on dials and sliders and do not have any way to 'store' your favourite patches for recall at a later date (beyond making a visual reference such as a photo or diagram). If you've ever used an analog synth you'll know that even the slightest change in knob position can cause a massive change in sound!

So at some point you're going to have to 'commit' the audio output of your synth, so the external synth audio becomes an 'in the box' element of your project (at which point you no longer even need to have the synth connected).

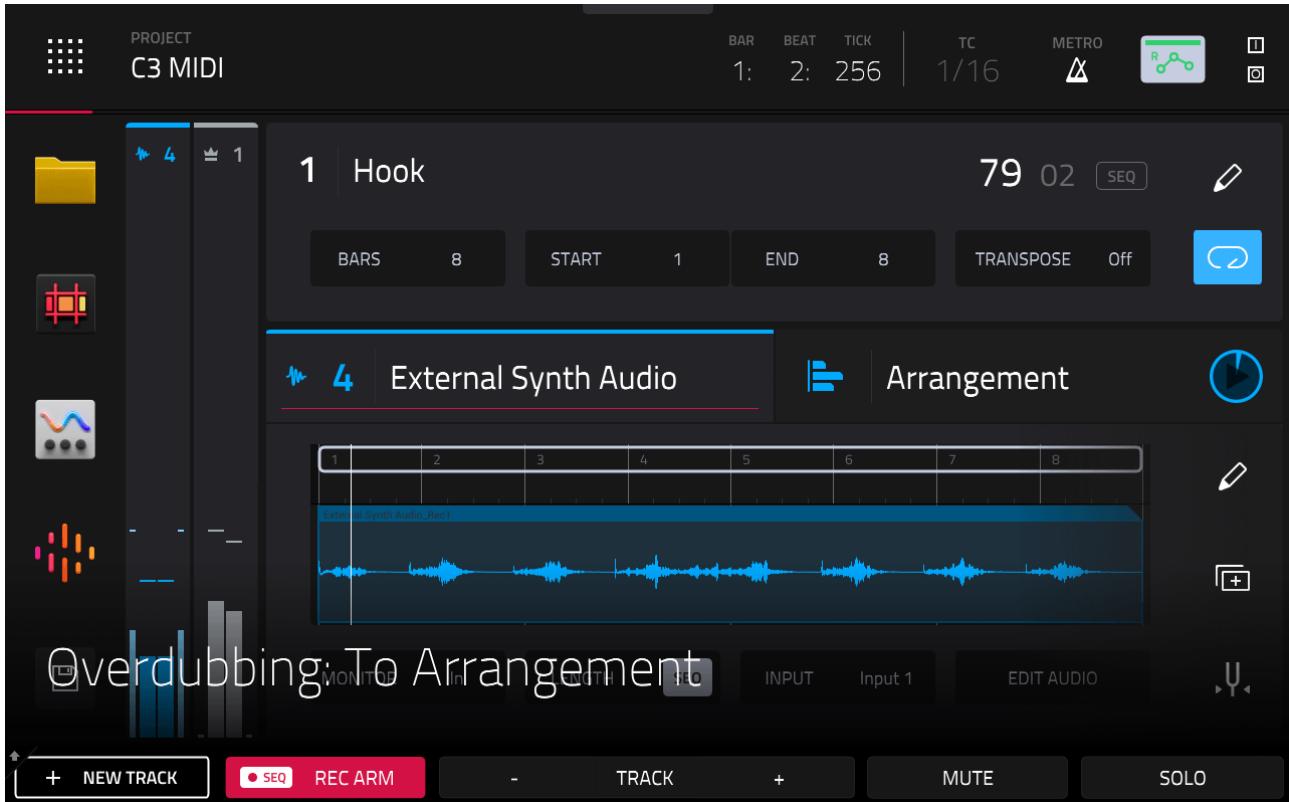
As you already have an audio track configured to play back the audio from your synth, it's actually very easy to also *record* the synth output to that same audio track.

Select the '**External Synth Audio**' track and make sure the **REC ARM** button is enabled, and for the moment, leave **MONITOR** set to **IN**.

Press [**REC**] and [**PLAY START**] and let the MPC record. Hit [**STOP**] once the sequence has finished playing (or set sequence loop to OFF).



While the audio is recording, it will not show a waveform until you press [**STOP**] or it loops back into overdub mode:



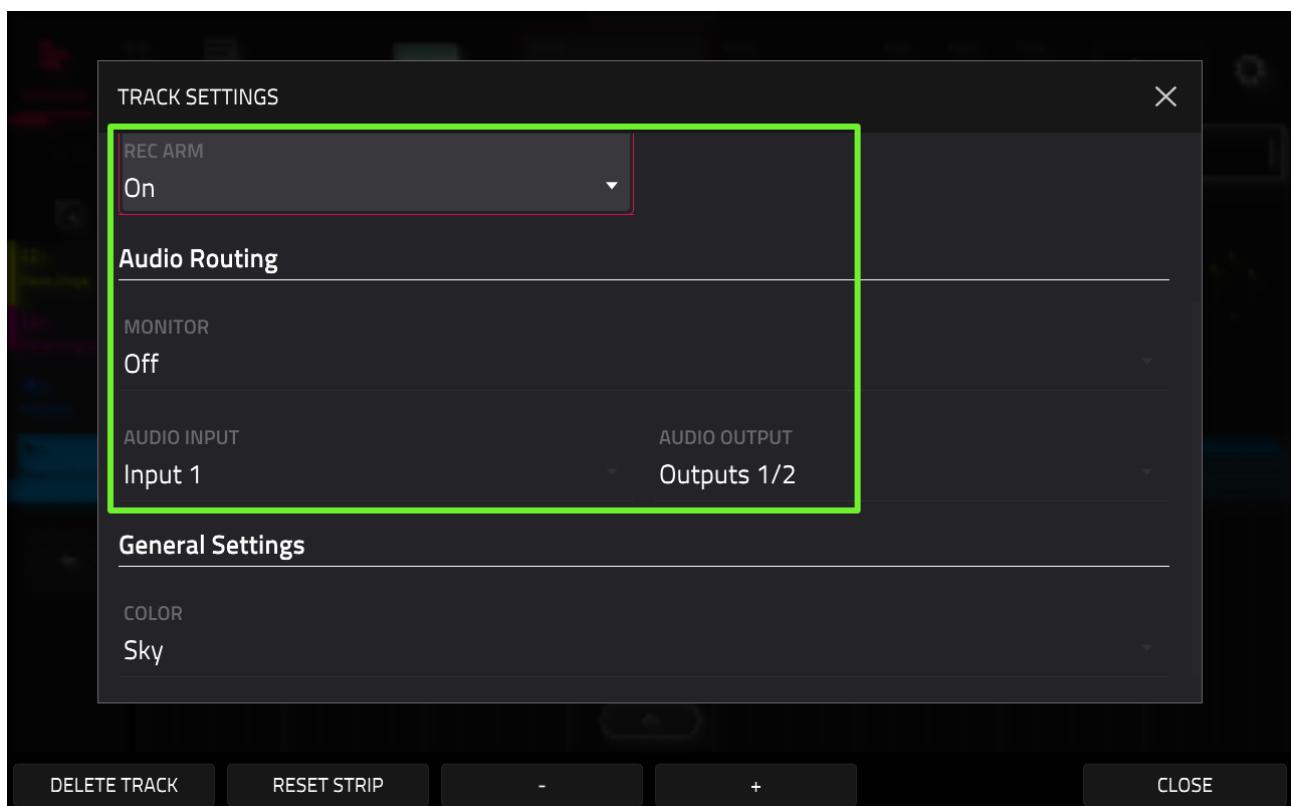
It's important to note that it's not possible to 'overdub' on an audio track, you can only **record**, so when a sequence loops back to the beginning and enters 'overdub' mode, the MPC is no longer recording any audio to the track. What you hear at this point is simply the audio continuing to be triggered from your synth (due to the events still being triggered on the MIDI track) – you are not actually hearing the audio you just recorded to the audio track.

So with **MONITOR** set to **IN**, you'll actually still be hearing the 'live' audio feed from your synth. To hear the newly recorded audio only, you can set **MONITOR** to **OFF** on the audio track. Now press [**PLAY START**].

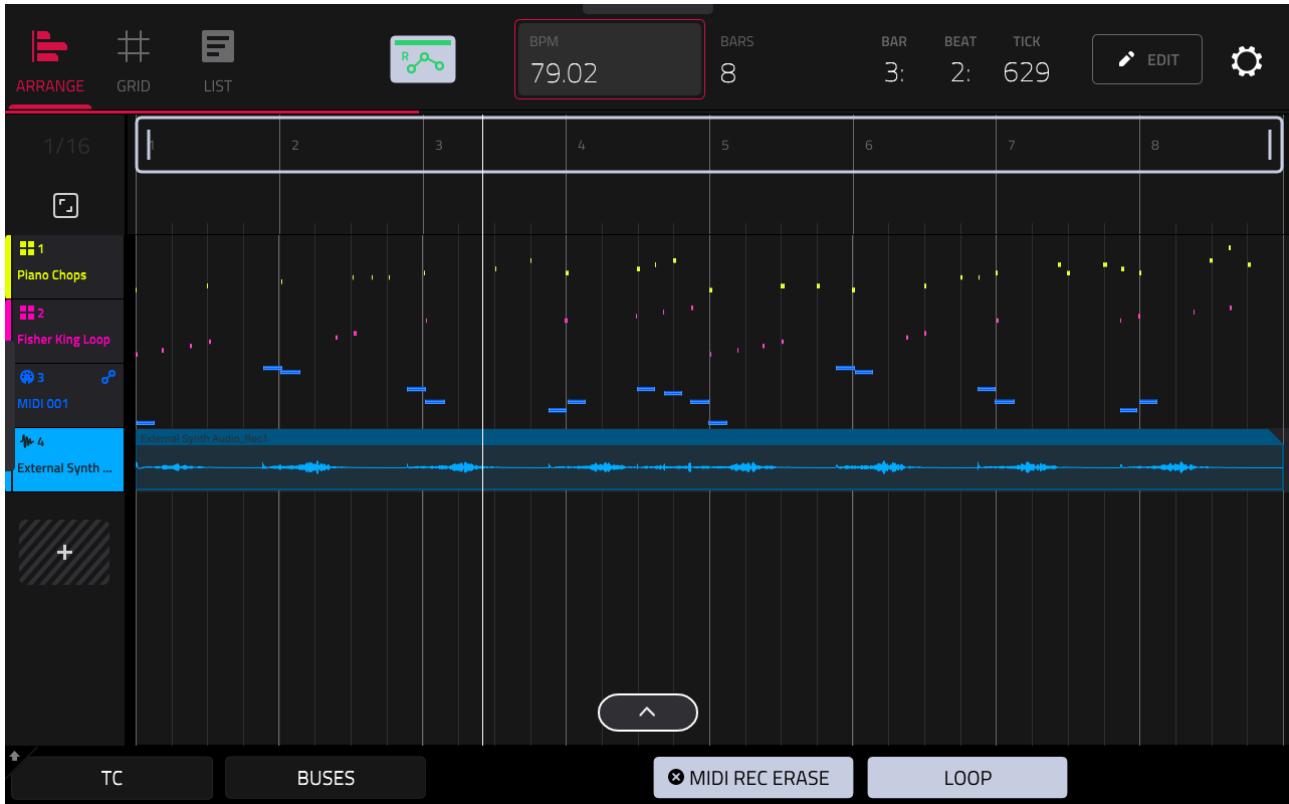
If you are not happy with your recording (e.g. too hot signal, sound patch needs tweaking etc), simply make your desired changes to the synth, hit

[**REC**] and [**PLAY START**] and re-record the whole thing again. The new recording session will completely overwrite the existing session.

This can also all be carried out from the **ARRANGER** screen. Track configuration settings are less 'immediate' on this screen, but ultimately just a double tap on the relevant track header:



The procedure for recording your audio in the **ARRANGER** is identical to **MAIN** – hit [**REC**] and [**PLAY START**]. As with **MAIN**, the waveform itself is not visible until after recording:



So that was pretty simple. You can record the audio from your synth at any point in the song creation process; for example you might want to do this as soon as you find a nice analog synth patch just to make sure you capture that unique sound. You can always just set the audio track back to **MONITOR:IN** if you wish to continue listening to 'live' synth audio (the recorded audio will happily sit there – just set **MONITOR:OFF** to listen to it).

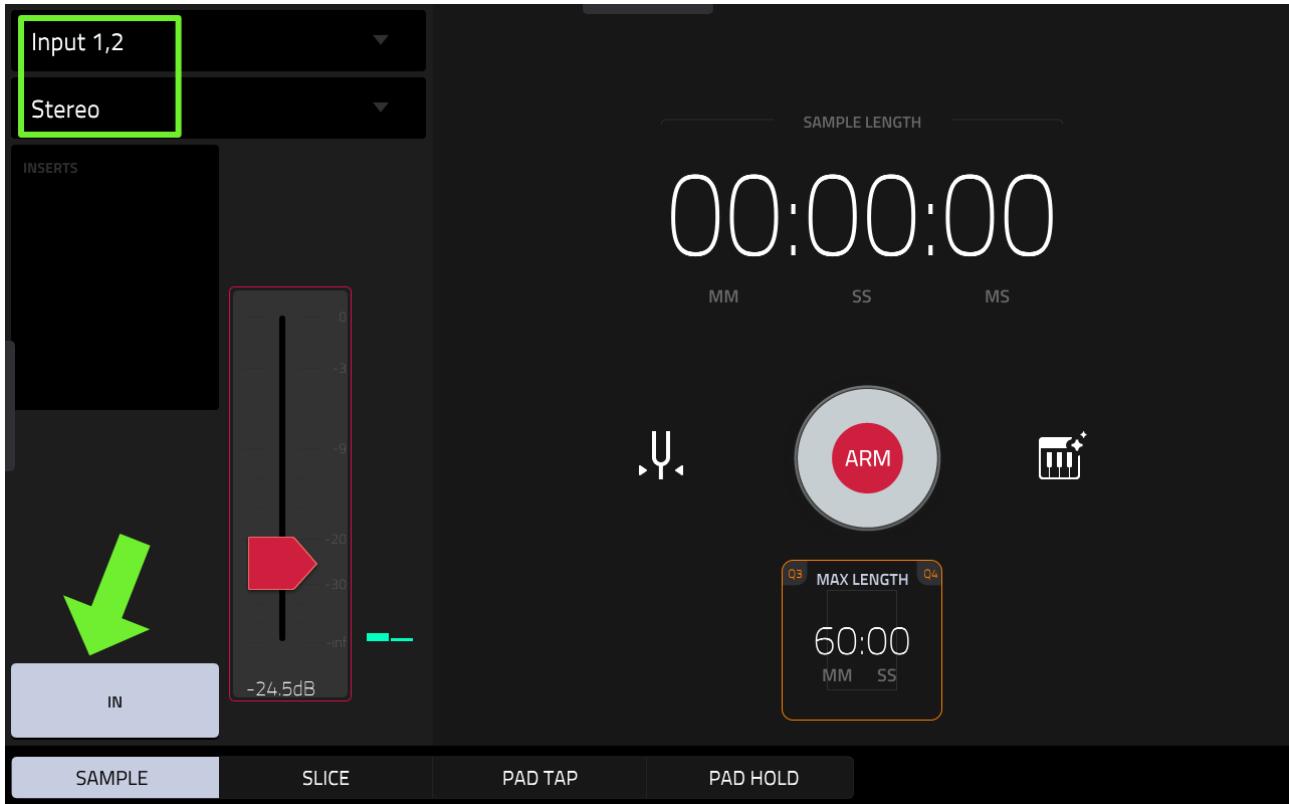
And if later down the line you decide to tweak the sound or use a completely different patch (or synth) for that track you can always just re-record the audio track whenever you need to. Or you might just leave all your tracks firing off the sounds 'live' from the synth and wait until the final song mix down before committing the audio. It's all very flexible.



You can add insert FX to your audio track these are just applied to the output of the track itself and are not 'baked in' to the actual audio. The only time these FX are permanently applied to that audio is when you perform an Audio Mixdown. If you are looking to permanently effect the incoming audio, use external FX boxes or record to the SAMPLER (I cover this later in this chapter).

RECORDING SYNTHS WITH THE SAMPLER

If you just want to record some snippets of audio from an external synth, you can also use the SAMPLER. First, make sure the MIDI track that triggers the synth is selected and then go to **[MENU] > SAMPLER**:



Set the **INPUT** to match the audio inputs you've connected your synth to, set a suitable number of channels for the output file (mono vs stereo) and set **MONITOR** to **IN**. The rest of the settings are the same as we covered in Section B when sampling vinyl, so for example:

- Set a suitable sampling time – remember you can use (Q-LINK 5) and (Q-LINK 1) for this
- Set a **THRESHOLD** above the general noise floor
- Hit **ARM** and your MPC will start to record as soon as you exceed the threshold level.

You can now play your synth any way you prefer; from the pads, from the synth itself (if it has keys or similar), or from an attached MIDI controller

(see the workshop at the end of the chapter about configuring controllers).



Unfortunately PAD PERFORM does not currently work when in the SAMPLER screen, the pads default to standard 'chromatic' mode, where pad [A01] is the lowly C-2 MIDI note.

Alternatively you can hit [**PLAY START**] to trigger any pre-recorded MIDI events on any MIDI track in the currently selected sequence that's been set up to trigger the synth (i.e. as per the example in the earlier part of this tutorial).

Whichever input method you choose, the SAMPLER will create a complete recording of your track but instead of making an audio track out of it it will simply just place the recording as a sample in the sample pool.

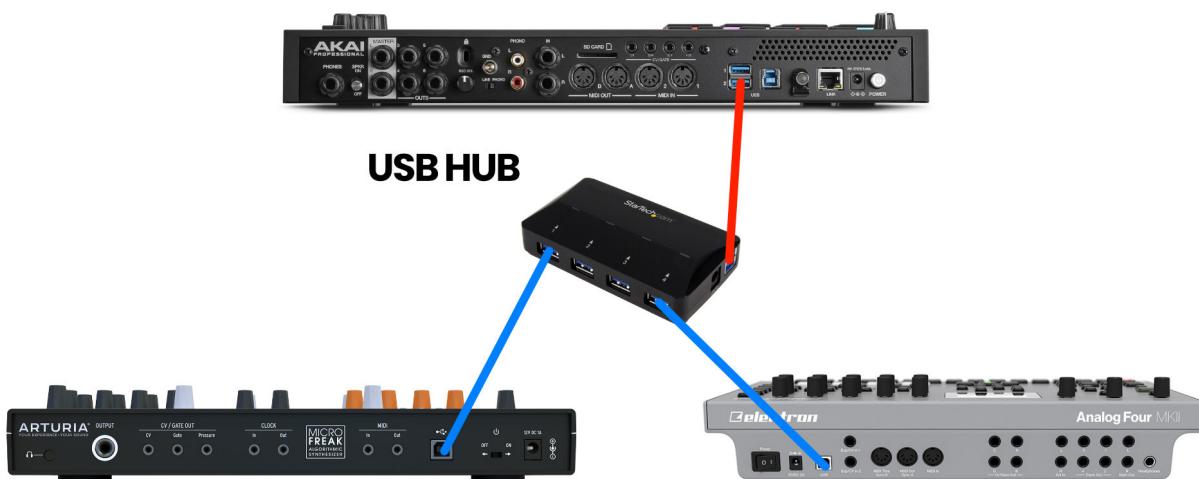
One difference when using the SAMPLER is that any insert FX configured on this screen will permanently effect the recorded audio; so for example, insert a reverb here and the resulting sample you create will have reverb on it.

So the same advice applies as before – use real time FX if it helps achieve a particular goal (e.g. limiting incoming levels, helping you get a better groove, more inspiration etc), otherwise generally leave the FX until later as it allows for more flexibility.

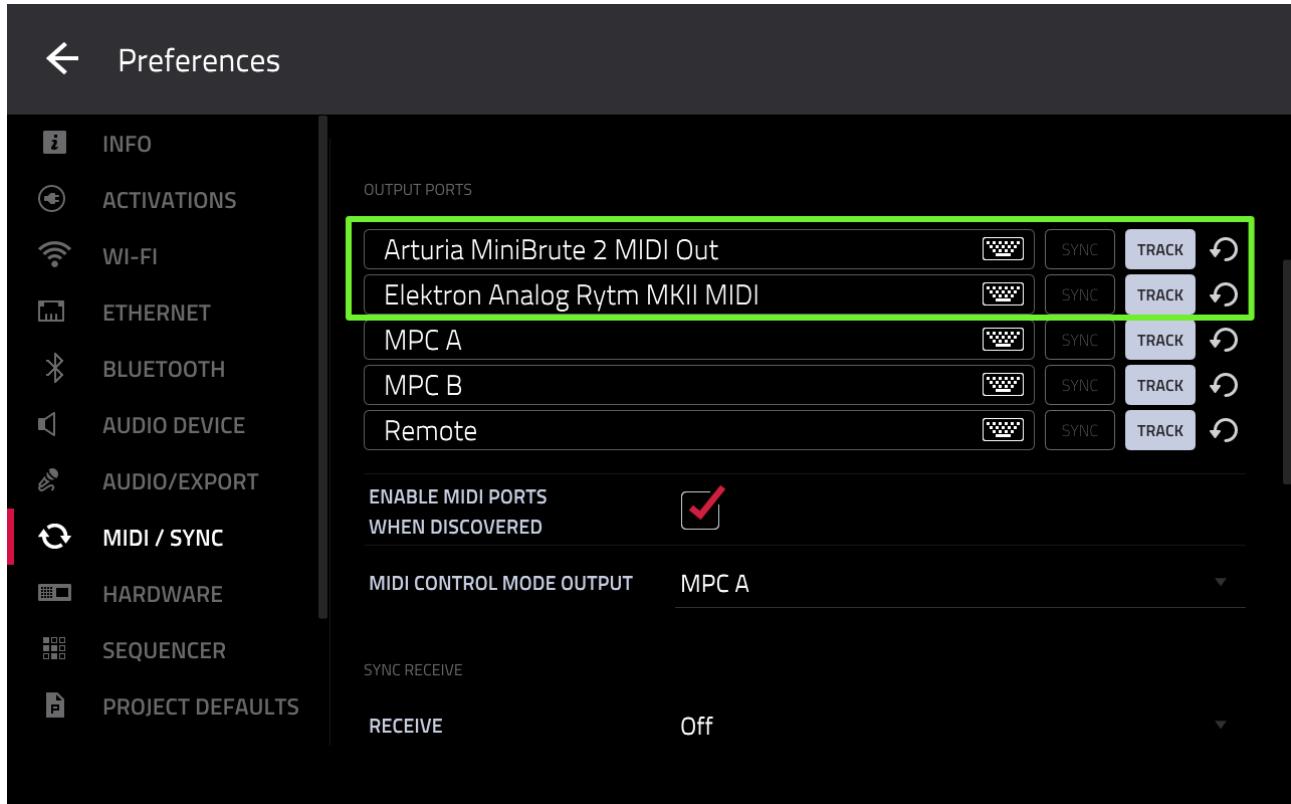
MIDI CONNECTIONS FOR MULTIPLE SYNTHS

The examples in this tutorial are for a single synth but you can of course use multiple synths with your MPC, the principles are the same. Each synth must be configured to accept its own unique MIDI triggers from a dedicated MPC MIDI track, and the audio output of synth must be routed to an MPC audio track via available MPC audio input(s).

If all your synths support USB MIDI then the MIDI configuration aspect is very simple. Each synth simply needs its own USB connection which you can do by attaching a USB hub to a USB 'A' port on your MPC.



With all your synths connected to the USB hub, they should all appear as available ports in the **MIDI/SYNC** page:



You can now create a MIDI track for each USB synth and set the track's **MIDI OUTPUT PORT** to the USB synth, along with any relevant **MIDI channel**, **program change** and **bank** settings for the patch you need to trigger.

MIDI can get a little more complicated when you need to connect multiple synths via MIDI 'DIN' connections. If your MPC model has more than one MIDI OUT port you can connect a synth to each one via its own MIDI cable:



If you don't have enough MIDI OUT ports for all the MIDI DIN connections required you can '**daisy chain**' synths, as long as all the synths in the chain (apart from the last one) have a **MIDI 'thru' port**. Here the MIDI OUT of the MPC goes to the MIDI IN of the first synth, then the MIDI signal is continued via that synth's MIDI 'thru' to the next synth's MIDI IN, and so on:



Alternatively you can connect an MPC MIDI OUT to a [MIDI 'thru' box](#) which splits the incoming MIDI signal and creates a bunch of separate 'thrus':



Either way, as all the devices effectively share the same single MPC MIDI OUT, you'll need to differentiate the MIDI messages accordingly, so we'll use the **MIDI channel** setting on the to achieve this.

First, create a MIDI track for each synth and configure the **MIDI OUTPUT PORT** to your **MPC MIDI 'DIN' Port**. Connect this port to a MIDI thru box or daisy chain.

Now configure each track with its own unique MIDI OUTPUT CHANNEL. Remember there are sixteen independent MIDI channels on each MIDI port connection, so you can run up to 16 hardware synths from 16 different MPC MIDI tracks as long as each track sends out MIDI on its own unique MIDI channel.

Most synths will allow you to change the MIDI channel that they will be triggered on, so make sure each synth is assigned to a MIDI channel set on the MPC MIDI track it's to be triggered from. This will either be a setting within the operating system of the synth, or physical switches on the back of the unit, e.g:



Alternatively you can effectively add further IN and OUT MIDI ports to your MPC by using a [USB MIDI hub](#). These hubs also offers a plethora of other features and will also provide more stability and flexibility compared to a typical 'midi thru' set up.

AUDIO CONNECTIONS FOR MULTIPLE SYNTHS

Once the MIDI is configured you'll need to work out how you wish to handle the audio output of your synths. There's many different audio configurations possible with an MPC which are dependent on the number of audio inputs available, the hardware you are connecting and the specific use case for the connection.

I'm going to cover the 'direct to MPC' example here, but for other audio configuration suggestions, check out [Appendix B](#).

In an ideal world you want to connect every synth to its own set of MPC audio inputs, but many MPCs only have two audio inputs so at best that's two mono synths, or only one stereo synth. If you have an MPC X you have potential for four mono synth connections.

If you do have enough dedicated audio inputs for all your synths then life is easy as it's the same process as we did with a single synth, but just repeat it for each connected synth.

So, just set up an audio track for each synth and configure the audio track **INPUT** parameter to match the MPC audio input(s) used by associated synth. Set **MONITOR: IN** on the audio track. Whenever that synth is triggered via the MIDI track, you'll hear the audio through the audio track. Triggering can be from MIDI events you record to the MIDI tracks or MIDI events triggered 'live' from your pads or MIDI controllers.



Check out the workshop at the end of this chapter for details on how to use additional MIDI controllers to play any of your attached hardware synths (very useful if your synths don't have a built in keyboard).

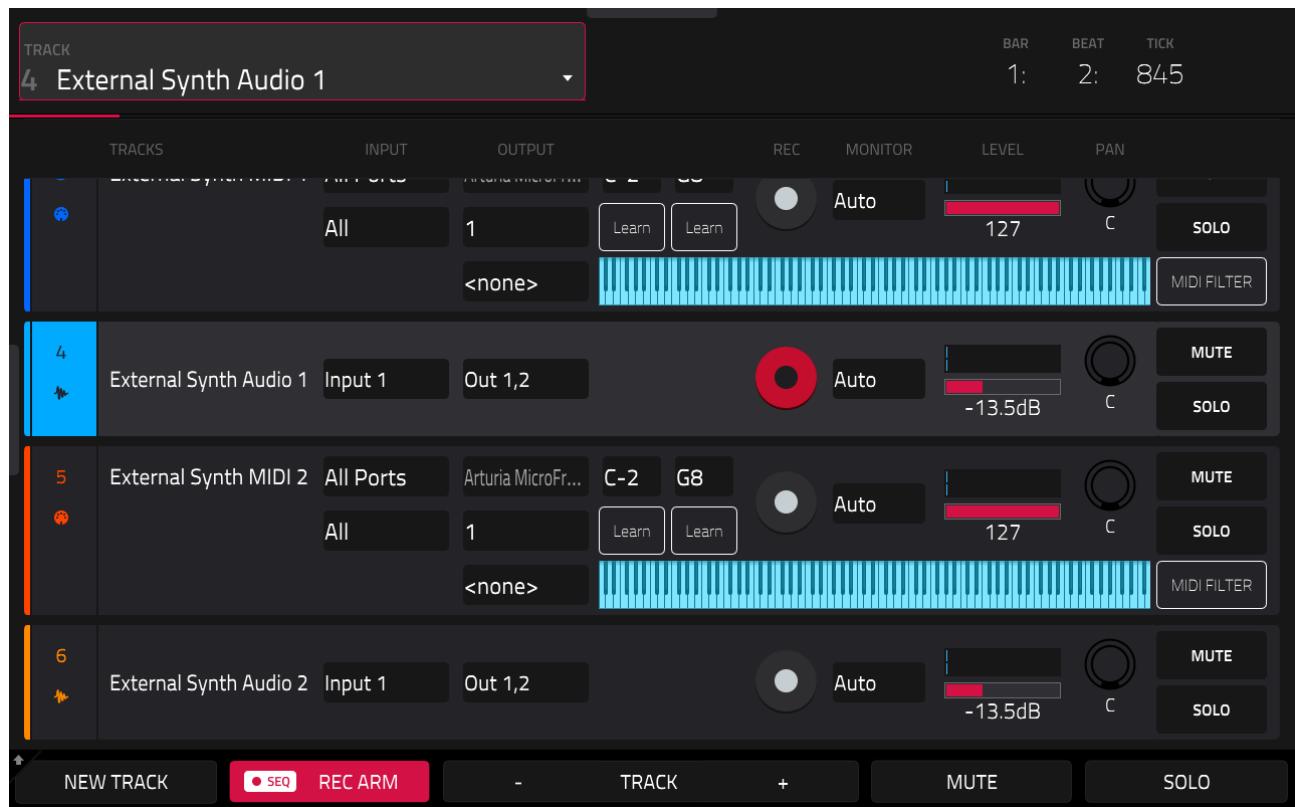
RECORDING MULTIPLE SYNTHS SIMULTANEOUSLY

We've already looked at how we can record ('bounce') the audio signal from a single synth into an audio track, creating an 'in the box' version of the synth audio and thus negating the need for that synth to be permanently connected.

This workflow is also possible when we have multiple synths connected to their own audio tracks within a project. One option is to record each track individually, one at a time; that is, select the first synth audio track in **MAIN**, hit **[REC]** and **[PLAY START]** and record that track, then select the next track and record that one, and so on.

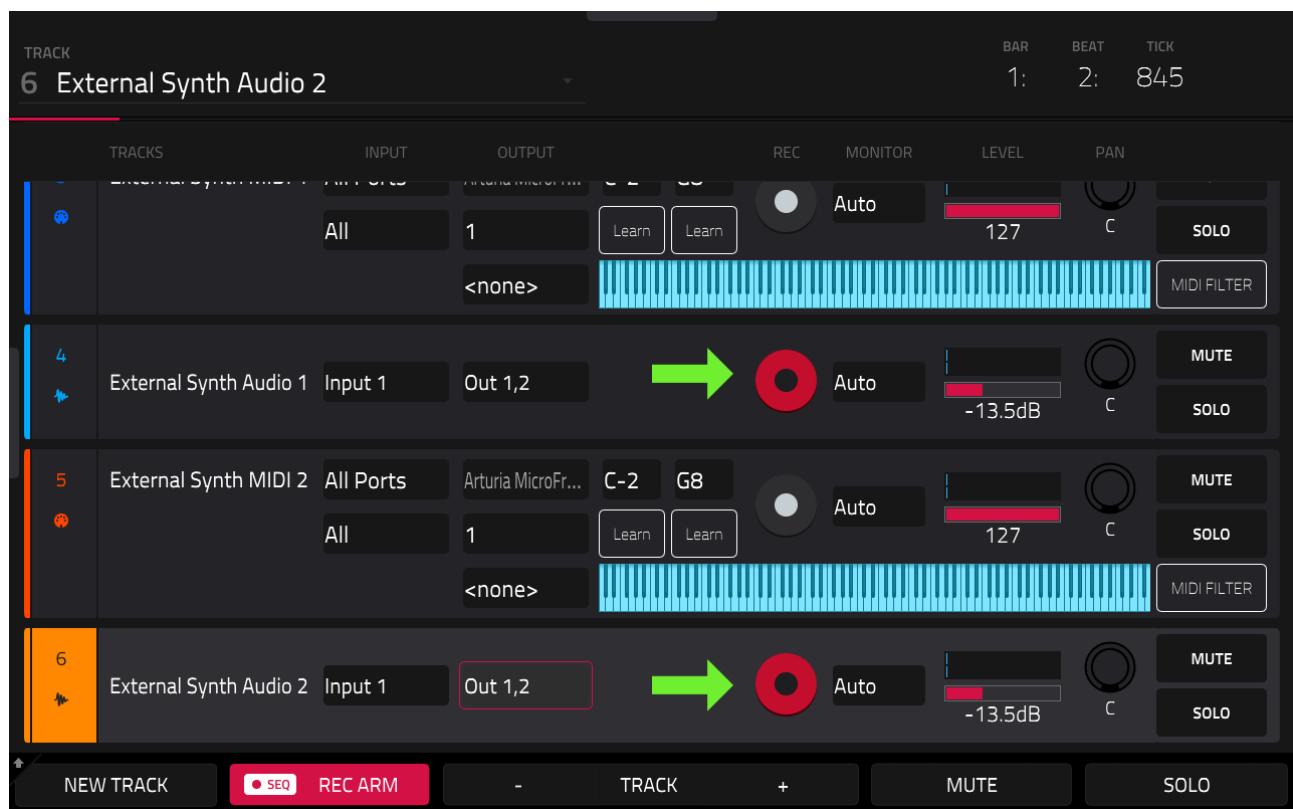
However you can also record *all* tracks simultaneously which will save loads of time. In order to do this we first have to simultaneously **REC ARM** all those tracks. There's two ways to achieve this, the first is to use the **TRACK VIEW** screen.

On some MPCs, **TRACK VIEW** can be opened via **[SHIFT]+[MAIN]** (or a quick double tap of **[MAIN]**), otherwise go to **[MENU] > TRACK VIEW**:



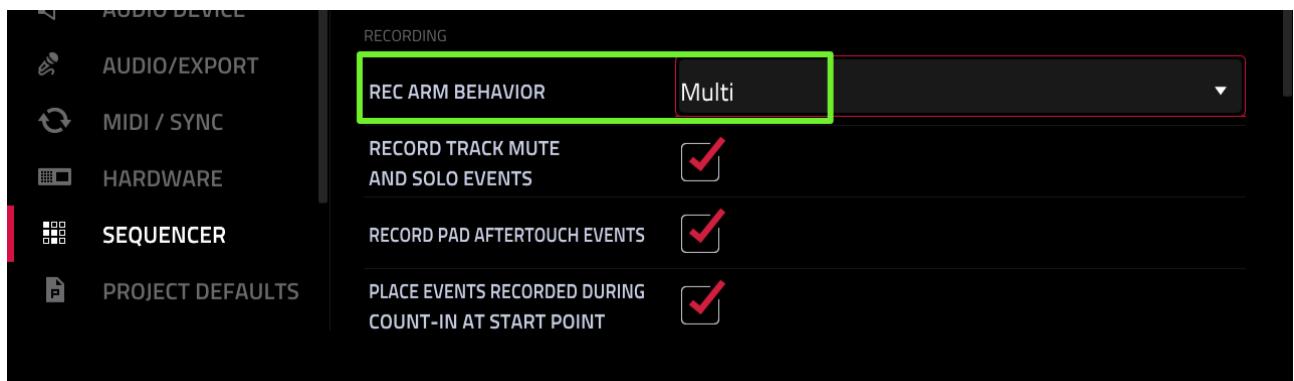
Here you can see several track in your project simultaneously and quickly adjust MIDI settings, record arm status and basic mixer settings (level, pan, mute/solo).

To REC ARM multiple tracks hold down [SHIFT] and tap on the **ARM** button for all the tracks you need to record to simultaneously:



You can now go ahead and hit [**REC**] and [**PLAY START**] to record all the audio tracks in one go. If you leave this screen the multiple REC ARM settings will get reset the moment you select a track that was not in the 'multi-arm' group.

If you want an option that remains in place as you move around the various MPC screens, first go to [MENU] > **PREFERENCES** > **SEQUENCER** and set **REC ARM BEHAVIOUR: Multi**

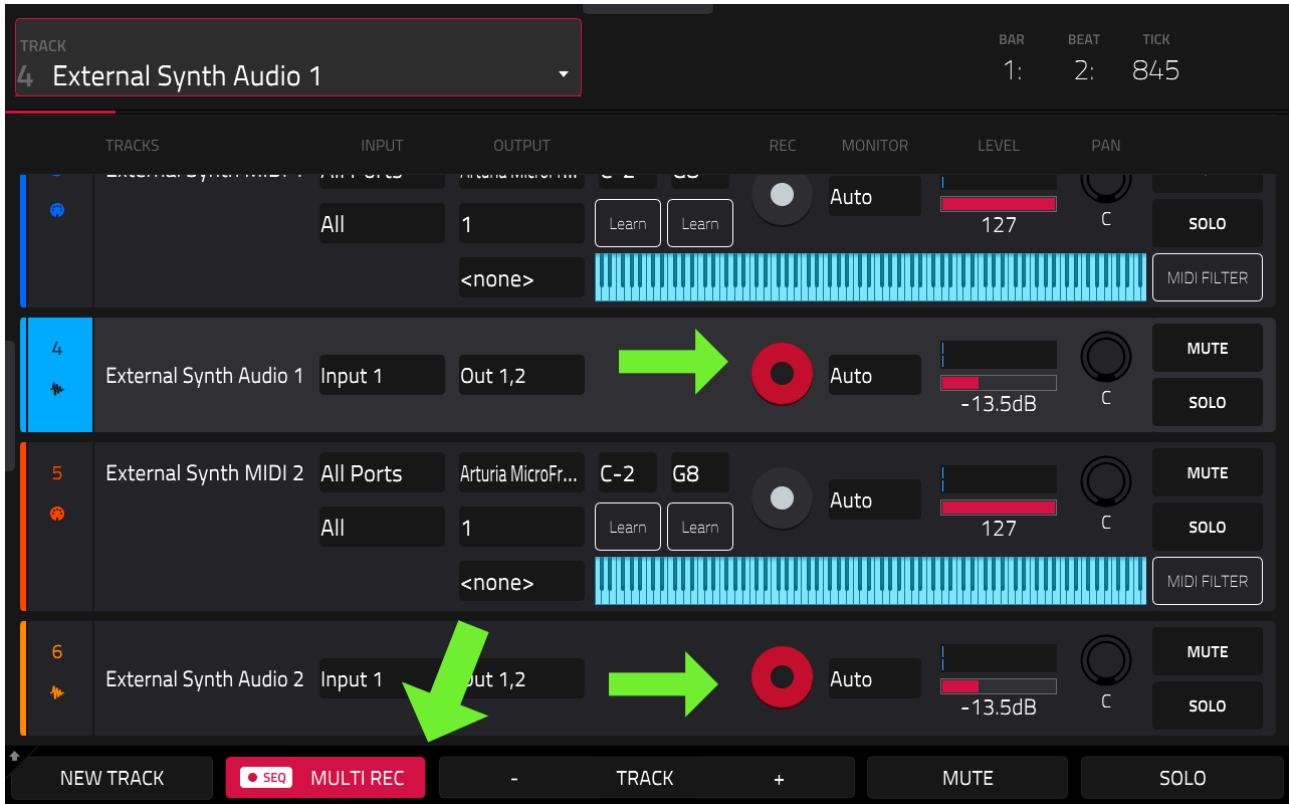


With '**Multi**' enabled, the way the MPC handles track arming for all tracks is changed. When set to '**Single**', each time you select a track, be it in MAIN, ARRANGE or TRACK VIEW, it is automatically armed, ready for recording.

When the **REC ARM BEHAVIOUR** is set to '**Multi**', tracks are no longer automatically armed when selected. Instead you will always have to *manually* arm a track before you can record to it – the default is for a track to be '*disarmed*'.

Once any track is armed, the ARM settings for that track are always remembered no matter which screen you go to or which track is currently selected. And if you arm multiple tracks, they all remain armed until you specifically choose to disarm them.

When '**Multi**' is enabled the REC ARM button changes to a **MULTI REC** button:



These settings affect all tracks in your sequence, not just audio tracks. This means you can also record to multiple tracks of any track type (DRUM, KEYGROUP, PLUGIN), but it also means that when you want to record to just *one* MIDI track you must remember to first hit the **REC ARM** button as it will no longer automatically arm itself while in '**MULTI**' mode.

A MORE FLEXIBLE ALTERNATIVE TO AUDIO TRACKS

Load up the project file **C3 MIDI Audio.xpj**. Here I've captured the output of the synth to the audio track on track 4, using the MIDI output from track 3, as detailed in this tutorial.

Now, one problem with recording synths as audio performances is that those performances are difficult to edit at a later date and hence quite inflexible. You can apply FX and basic audio editing (e.g. reverse, warp, cut and pastes etc), but if you need to change the notes played within the performance or tweak the synth sound itself, the best option is to make the changes to the synth preset and just completely re-record.

An alternative to using audio tracks is to literally 'clone' the sound of your synth patch and convert it into a playable keygroup instrument. This way you have all the flexibility of working with a MIDI events and the freedom to further edit the overall sound of the instrument using the MPC's sound design tools such as filters, envelopes, LFOs, sample layers and FX.

Sounds complicated, but luckily the MPC has a built in feature that makes light work of the cloning process, and we'll meet it in the next chapter!

WORKSHOP: WORKING WITH MIDI CONTROLLERS

In the main example throughout this tutorial we were triggering our synth from pre-programmed MIDI events on a MIDI track, created using GRID VIEW or LIST EDIT, or by recording in 'real time' using the MPC pads (or via the keyboard on an MPC Key model).

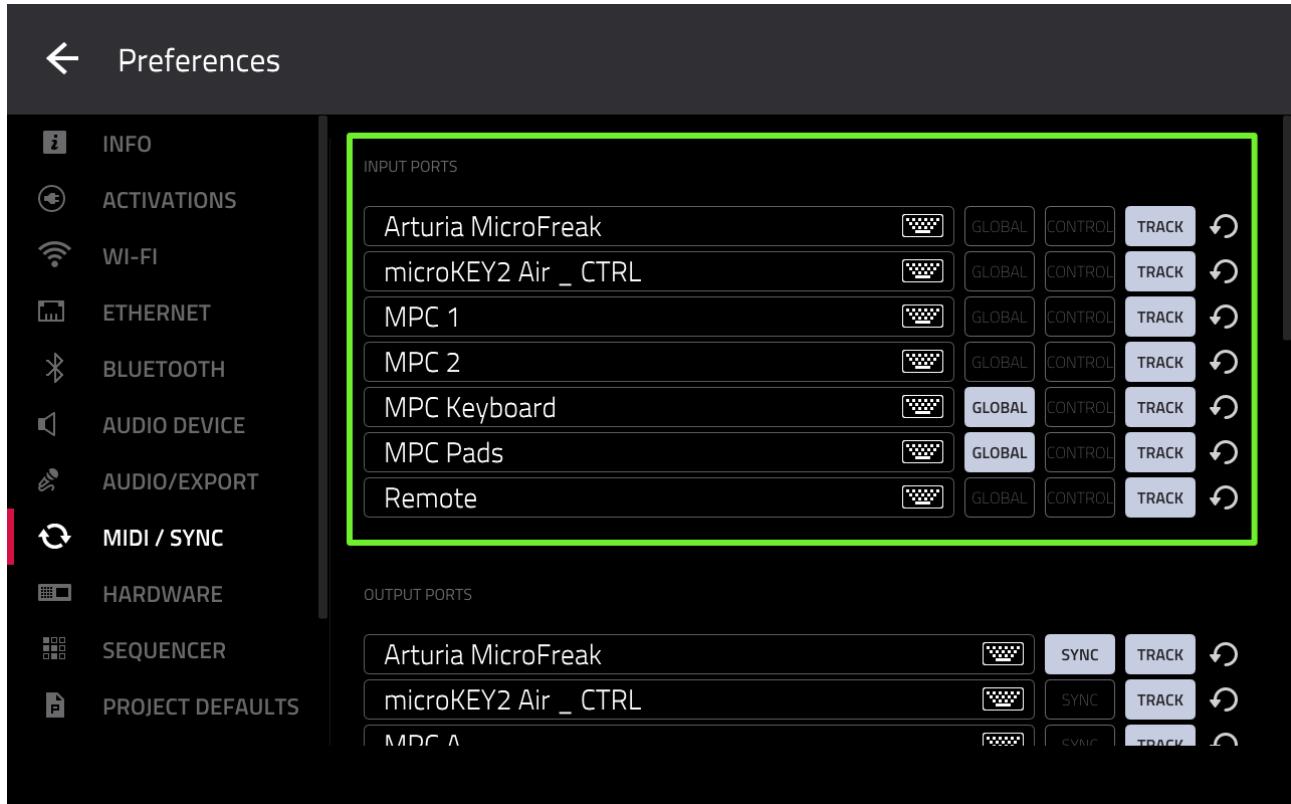
However, the MPC can also use external **MIDI controllers** to capture MIDI performances; these include MIDI 'control' keyboards, pad controllers and even the built in keyboard found on many hardware synths.

The MPC accepts incoming MIDI via USB, bluetooth and MIDI 'DIN' cables. The only real requirement for USB connections is that the MIDI controller must be 'class compliant', which means it must not need additional software drivers to work. Most MIDI controllers should be class compliant these days, but always make sure before purchasing one!

It's possible to have multiple controllers connected to your MPC which will allow you to configure each controller to play a specific track in your project.

Important: *This workshop assumes that you have at least one MIDI keyboard controller (or a hardware synth with built in keyboard) connected to your MPC!*

Configuration of MIDI controllers is initially achieved in **PREFERENCES > MIDI/SYNC** – specifically under the '**INPUT PORTS**' section:

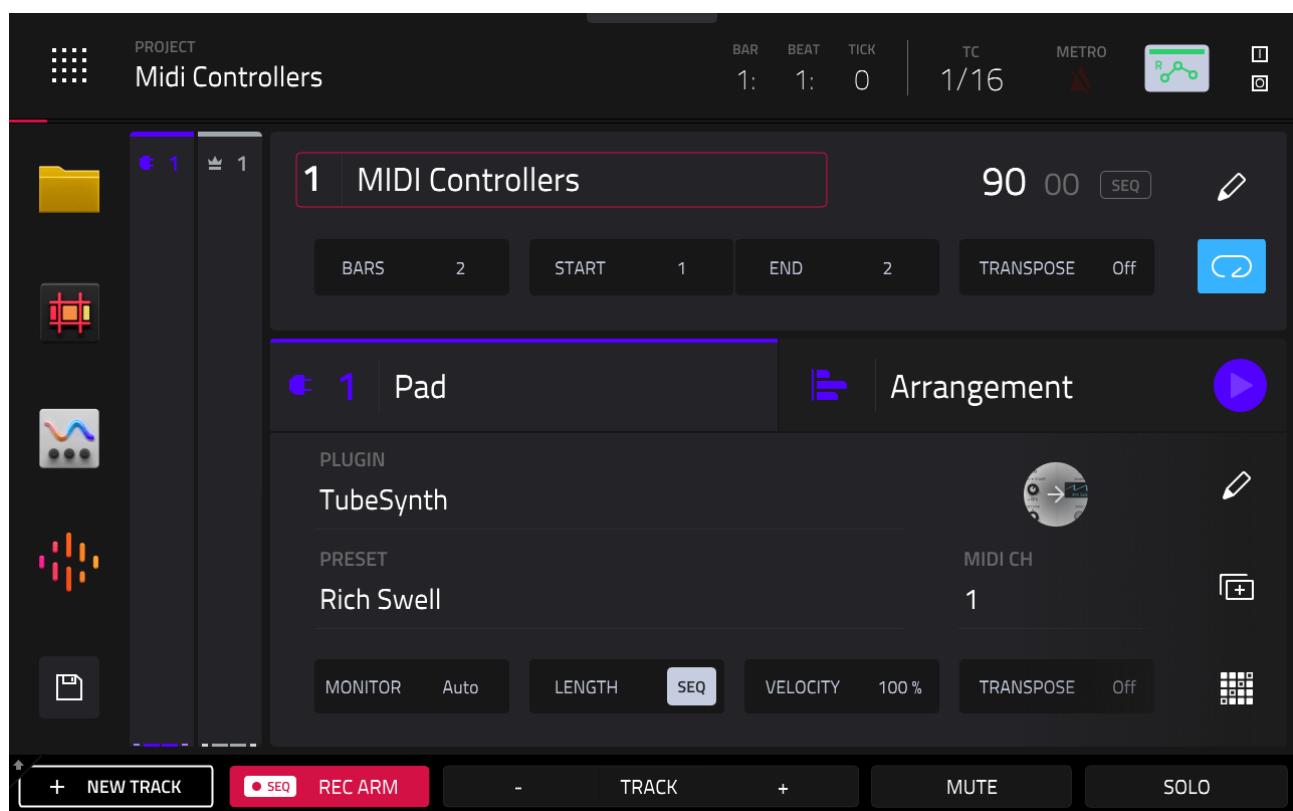


The first two entries here show two devices connected via **USB**. The Microfreak is a synth with a built in control keyboard (as used in the MIDI 'out' parts of this tutorial), while the **microKEY2 Air** is a dedicated USB MIDI keyboard controller (it can only send out MIDI, it has no internal sounds itself). A single USB connection will support both incoming and outgoing MIDI, so just connect the USB 'B' port of the MPC to the USB 'A' port of the controller.

Underneath, **MPC 1** and **MPC 2** represent any controllers that may be connected to the physical 'DIN' MIDI ports on your MPC (if your MPC model only has a single MIDI IN port, this will show as '**MIDI Port**'). So if your MIDI keyboard only supports 'traditional' MIDI connections, just use a standard MIDI cable to connect the MIDI OUT of your controller to the MIDI IN on your MPC.

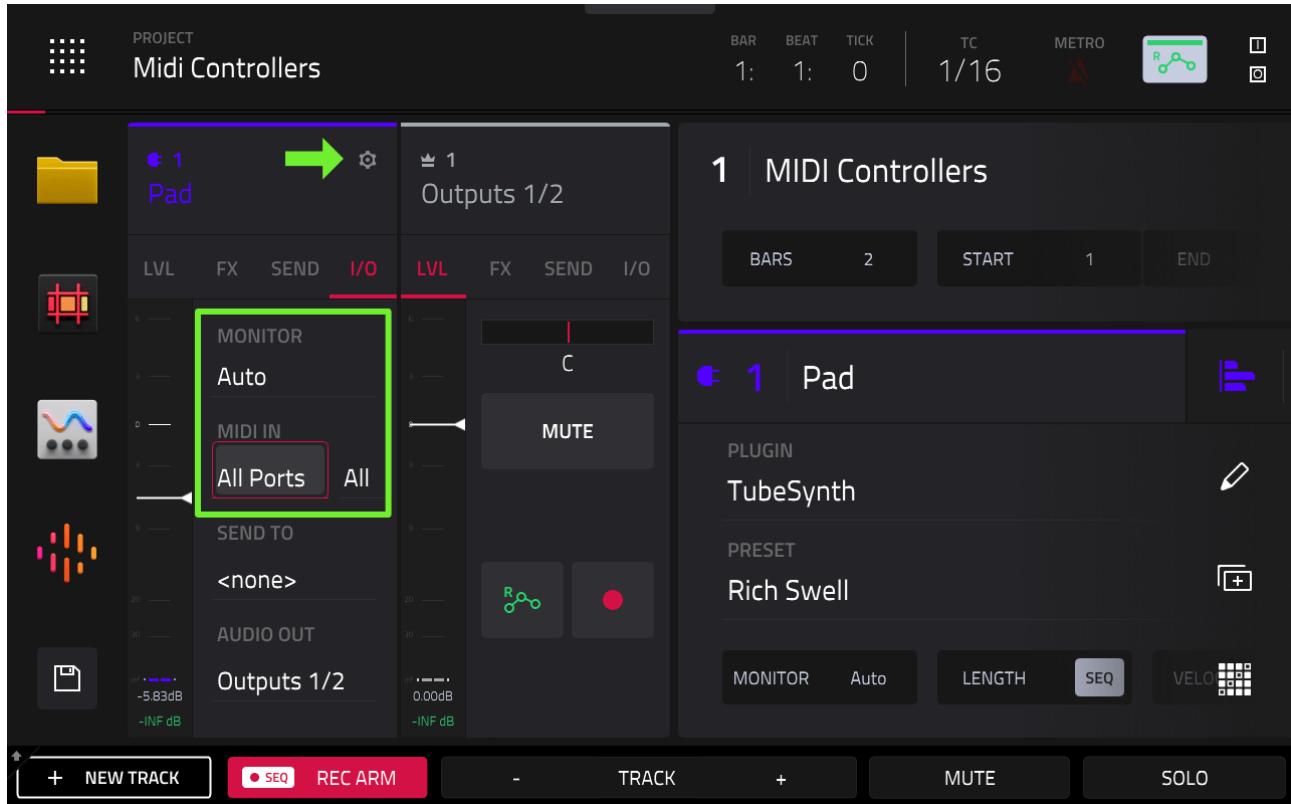
By default all controllers are given '**TRACK**' privileges, meaning they can control any MIDI enabled track in any sequence within your project.

Load up the project '**C3 MIDI Controllers.xpj**' – here I've just set up two plugin tracks. Go to [**MAIN**] and select track 1 (**Pad**):

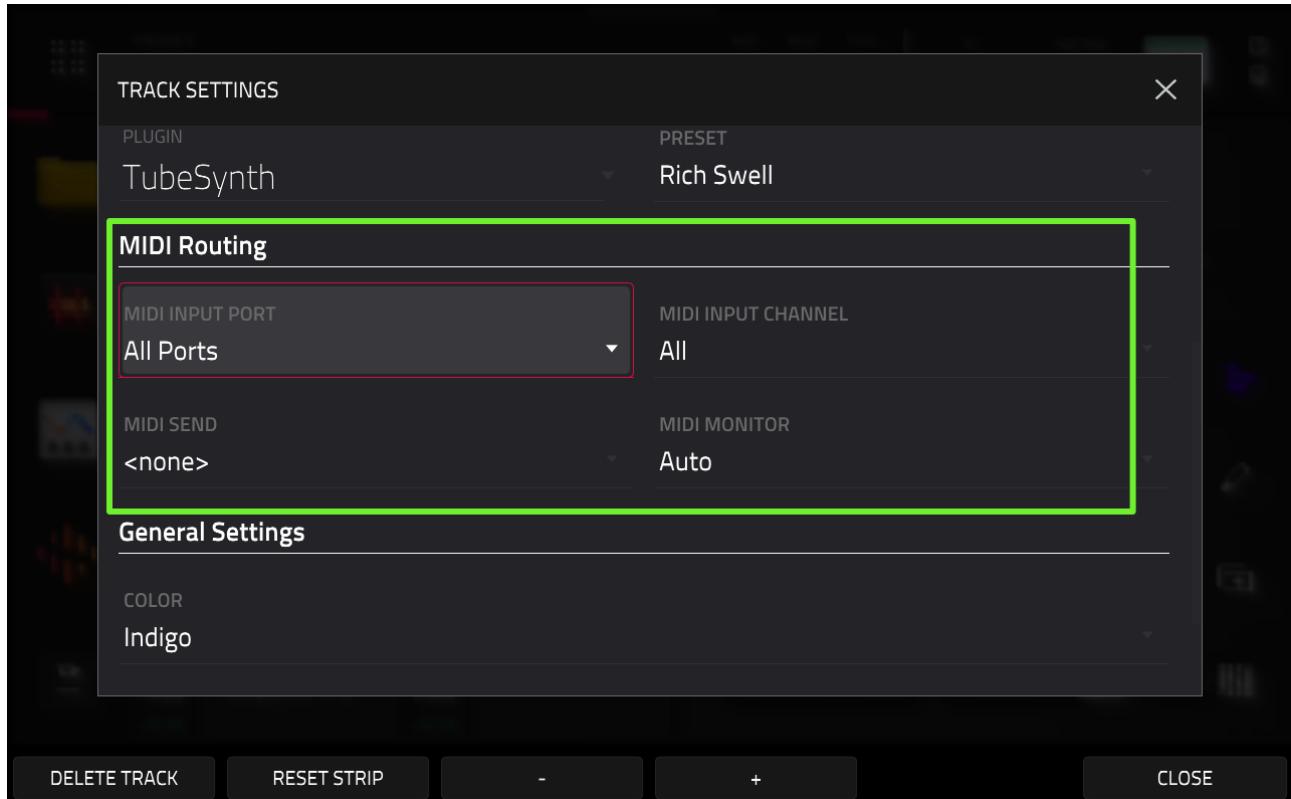


Here I've set up the default pad preset in Tubesynth. The default view for PLUGIN tracks in MAIN does not display any MIDI input configuration settings. To view these, you can expand the **XL CHANNEL STRIPS** and select the **I/O** tab:

C03: WORKING WITH HARDWARE SYNTHS

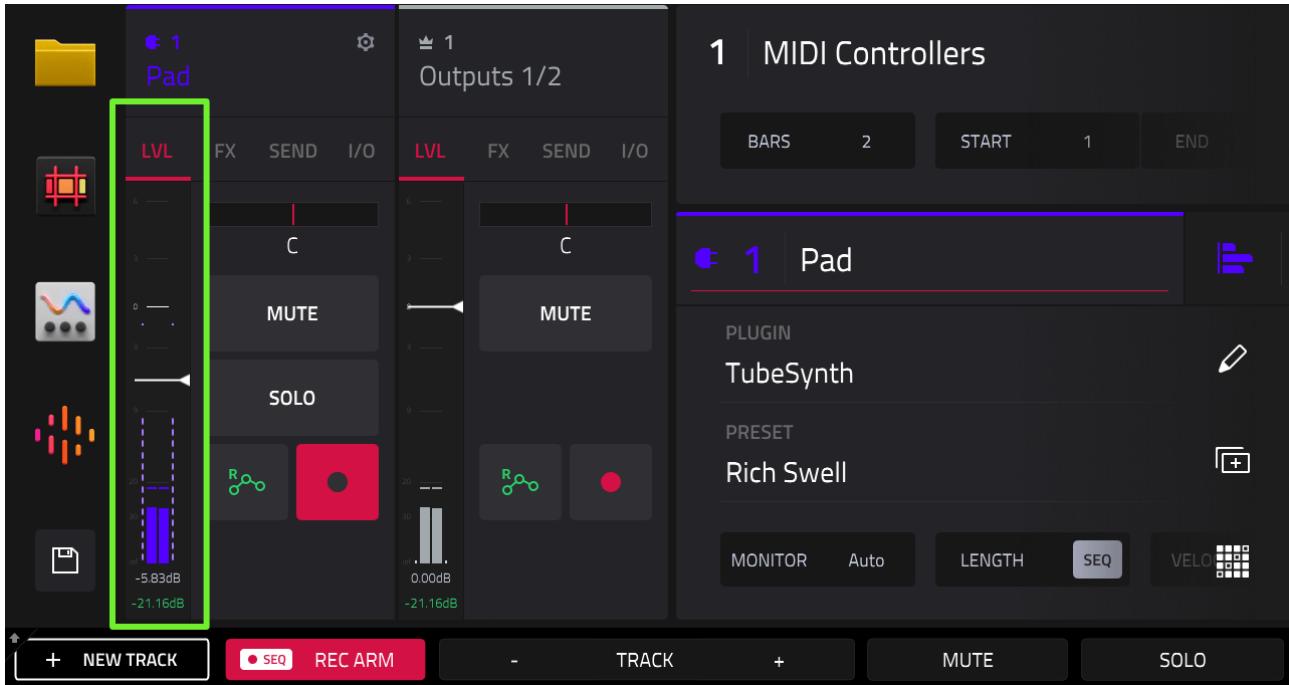


Alternatively hit the **gear icon** in the top right of the channel strip, or tap and hold on the track header in the Track tab to bring up the **TRACK SETTINGS** dialog:

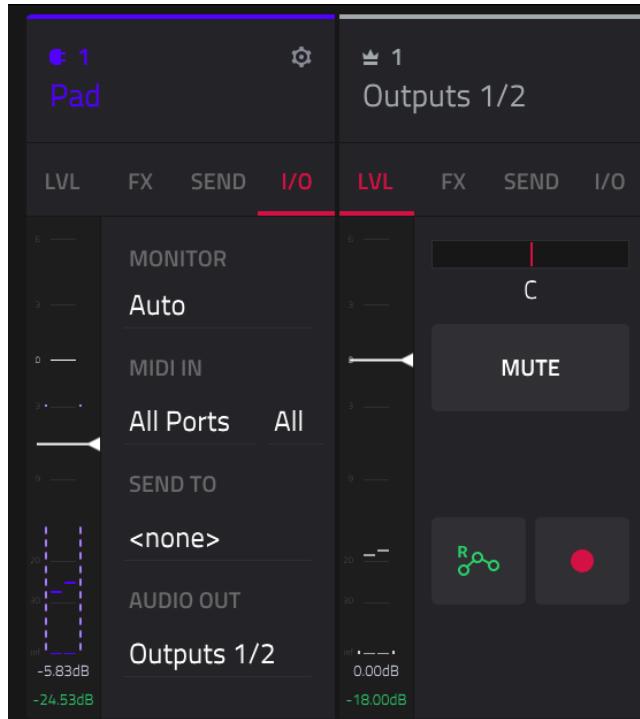


The **MIDI INPUT PORT** parameter lets us define which devices can send MIDI events to this track. With the default '**All Ports**' setting, any and all of your connected MIDI controllers should now be able to play MIDI notes on this track.

Play some keys on your controller to test it. You should see the channel strip for the MIDI track moving up and down as you play; on a MIDI track this **LVL** meter actually represents the **velocity** of the incoming MIDI, not 'volume' like it does on other tracks, and hence is measured on a scale of 0-127.



If there's no activity showing on the LVL meter then make sure your track is set to **MONITOR: AUTO** and the track is set to **REC ARM**. If the track is not armed you should still see the dotted outline on the LVL meter moving up and down when you play, but there will be no sound:

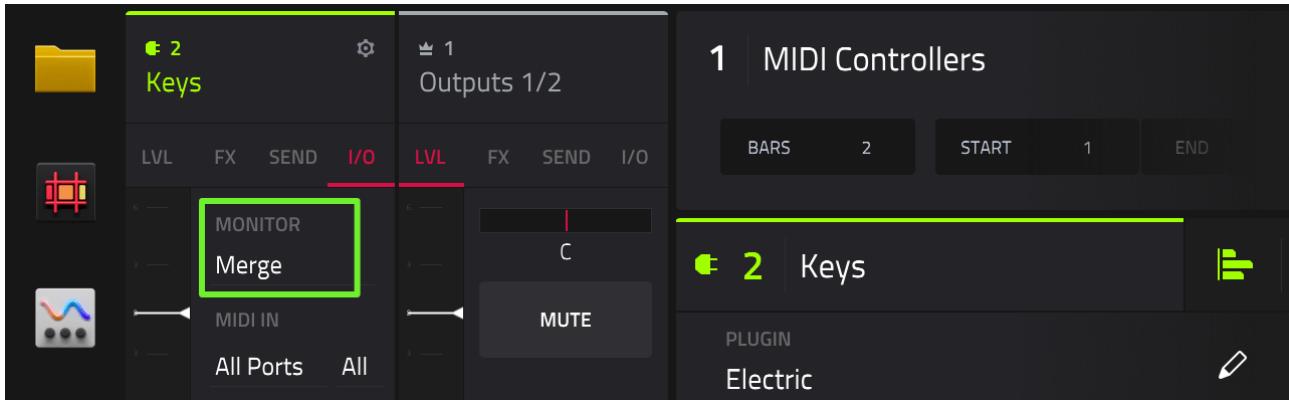


Now select **track 2 (Keys)** and play your keyboard. The controller should now switch to controlling only this newly selected track (an electric piano patch).

As it stands your attached controller is acting no differently to the pads, controlling only the currently selected track.

CONTROLLING TRACKS WHEN THEY ARE NOT SELECTED

It's possible for a MIDI controller to control tracks even when they are not currently selected. With **track 2** selected, set **MONITOR: MERGE**:

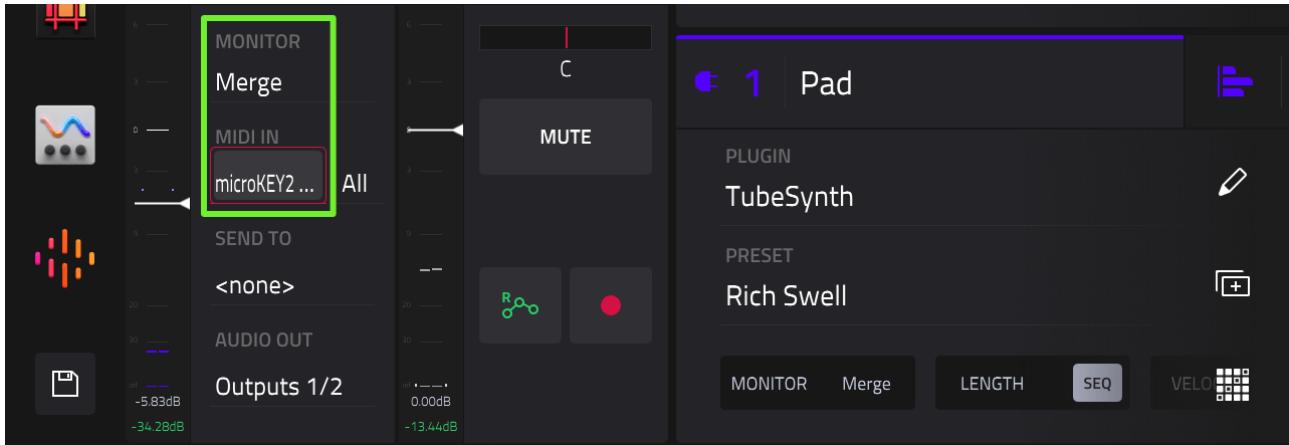


With **MONITOR: MERGE**, your current **Keys** track will continue to be triggered by your controller – however, now select **track 1** and play your MIDI controller – you should hear *both* tracks playing together. With **MONITOR: MERGE** set on a track it can be triggered at all times without the track needing to be selected.

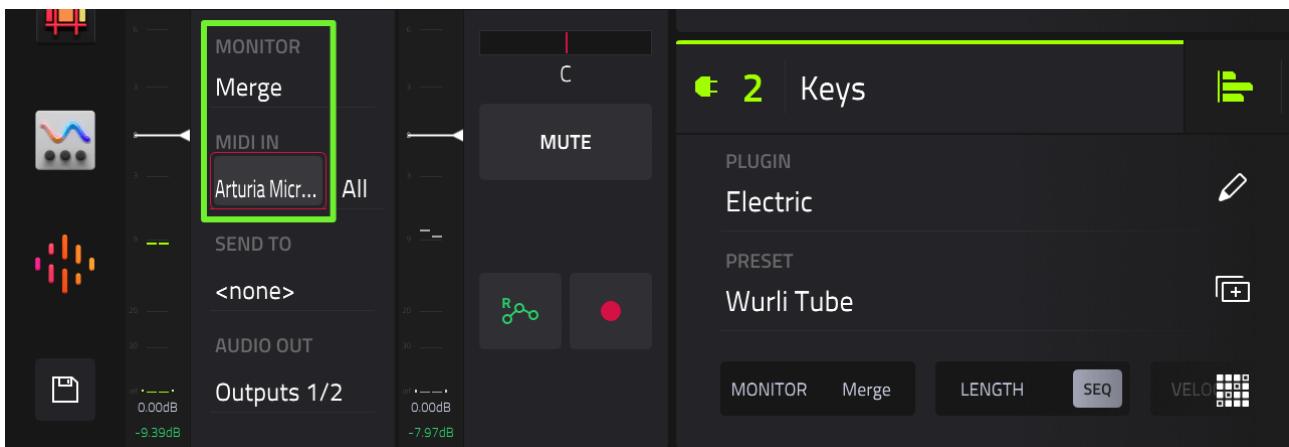
If you now set **track 1** to **MONITOR: MERGE** as well you'll hear both instruments layered together at all times – try it with the pads as well.

ASSIGNING A MIDI CONTROLLER TO A SPECIFIC TRACK

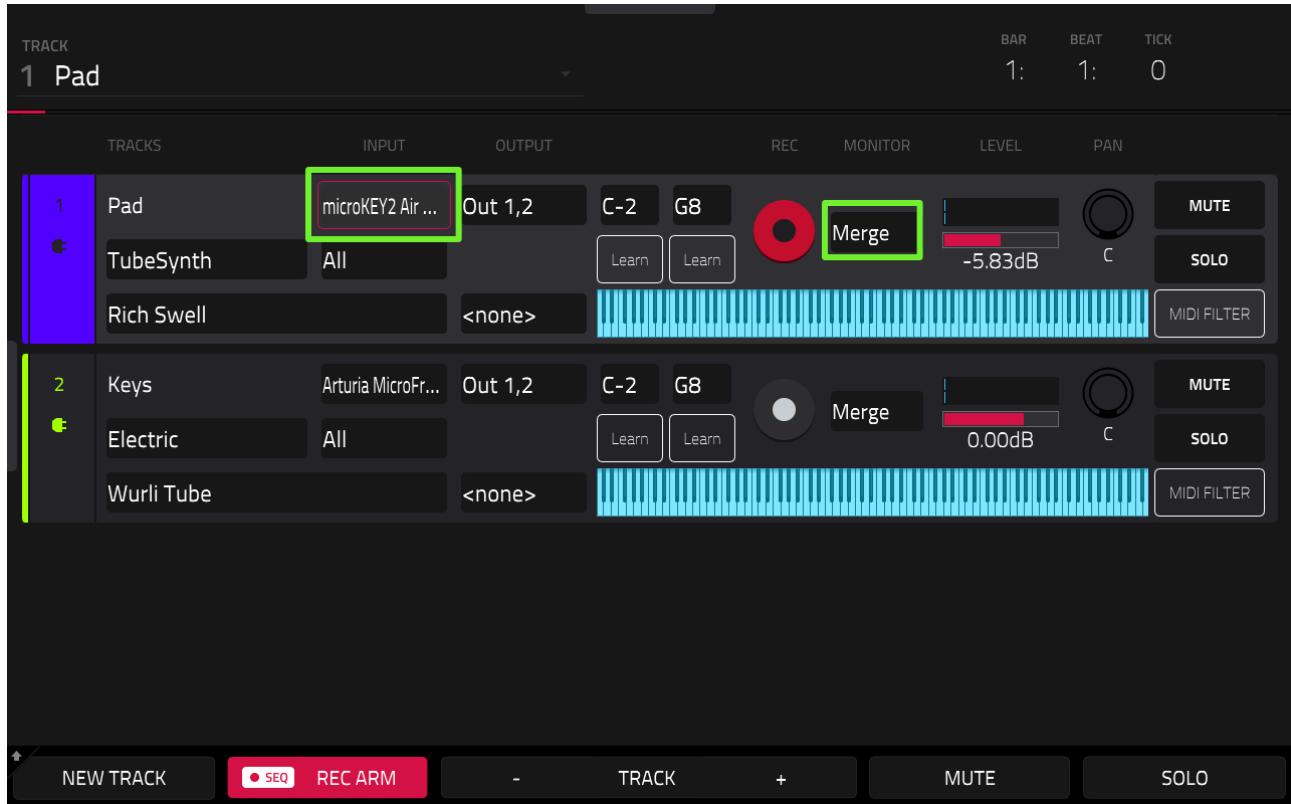
The **MIDI INPUT** settings also allow you to limit which controllers are allowed to send MIDI to a track. If you have two controllers attached to your MPC, try this. On **track 1**, tap on '**All Ports**' and change it to the port relating to your first MIDI controller – in my case, the Korg **MicroKey**:



Now select **track 2**, and set the **MIDI INPUT** to your second controller, in my case, '**Arturia Microfreak**'.



You might prefer to manage the MIDI settings for multiple tracks using the **TRACK VIEW** screen:



Make sure your two tracks are assigned to a unique controller, and both set to **MONITOR:MERGE**. Now play the controller assigned to track 1 and you will only hear track 1 play; now play controller 2 and you'll only hear track 2 play.

You are now able to independently play each track from its own controller. It doesn't matter which track is currently selected (in TRACK VIEW, this is the track with the lighter grey background). However you should note that the pads will still only play the currently selected track.

UNWANTED AUDIO FROM AN EXTERNAL SYNTH?

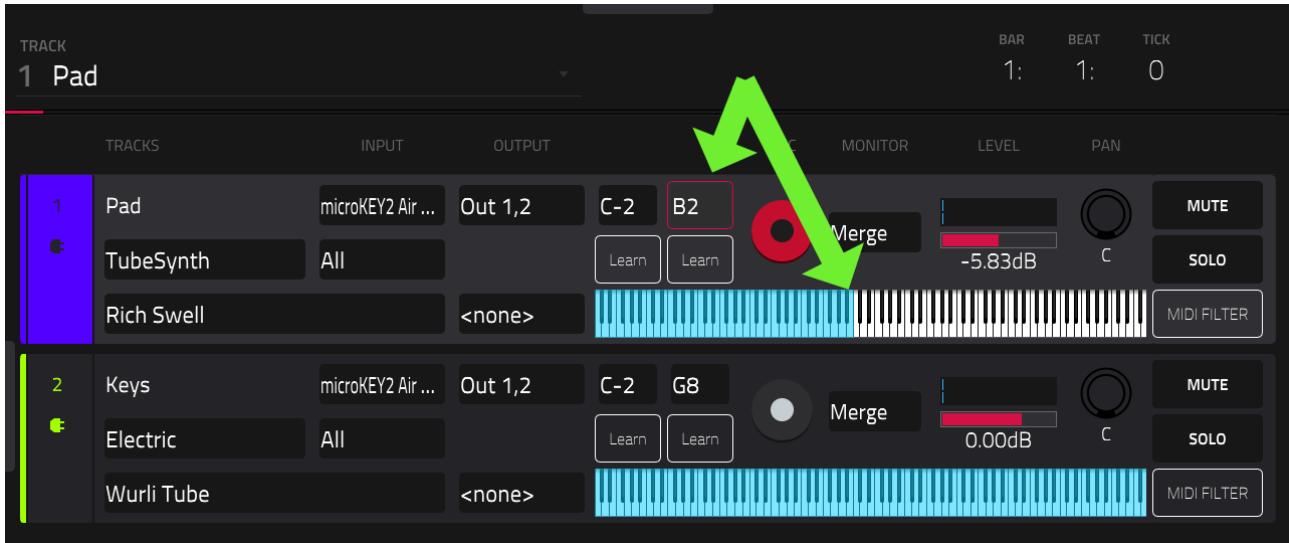
When using an external synth as a MIDI controller remember that by default it will also emit its own audio when you play its keys. If the audio from that synth is connected to an actively monitored MPC recording location (e.g. audio track or SAMPLER set to MONITOR:IN), you will hear the sounds of that synth alongside the sounds of the track you are controlling with the keys of that synth.

If this is not the desired result and you just want to use the synth as a MIDI controller, either set **MONITOR: OFF** on the MPC audio track/sampler, or if available, consider setting your synth to '**Local:OFF**', which will temporarily stop your synth triggering its own internal sounds while still emitting outgoing MIDI. Consult your synth's user guide for more information on how to configure this.

CREATING KEYBOARD SPLITS

In **TRACK VIEW**, set both merged tracks to the same **MIDI INPUT** (it can be the same MIDI controller, or 'All Ports'). You'll notice that each track contains a blue keyboard graphic – this represents the **NOTE RANGE** covered by the track, which by default is the entire MIDI note range of **C-2** to **G8**.

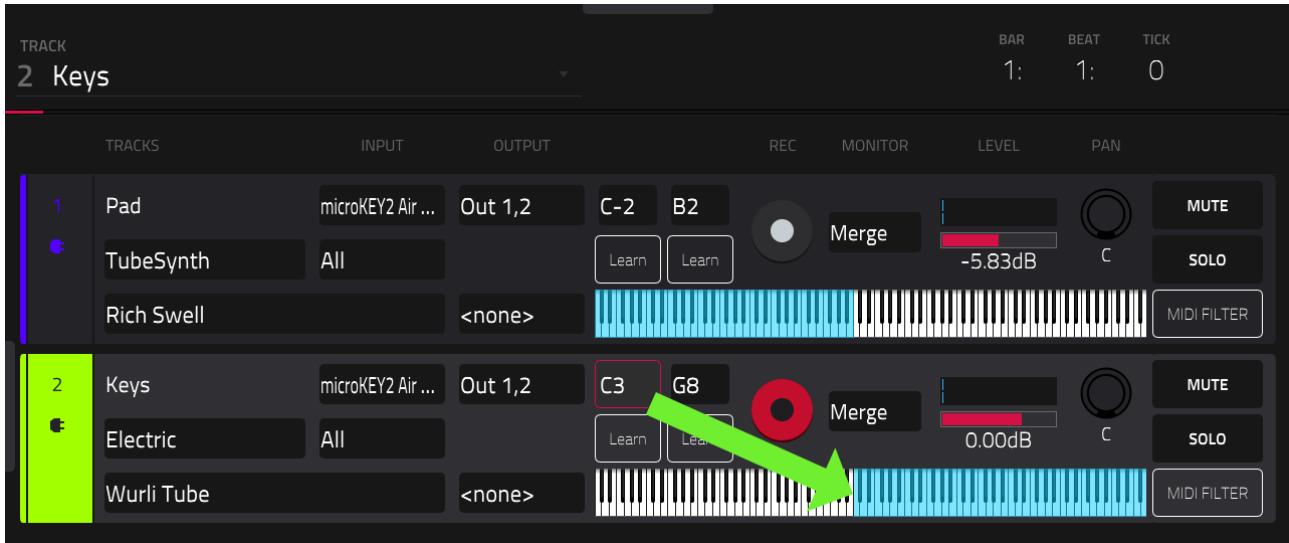
On **track 1**, change the '**MAX**' note to **B2**:



You can do this by changing the parameter with the (DATA WHEEL) or double tapping it to bring up the note select box. Alternatively, press the **LEARN** button underneath it and hit the **B2** note on your controller.

Upon doing this, the notes C3 onwards on track 1 no longer accept MIDI triggers and therefore no longer emit any sound when played.

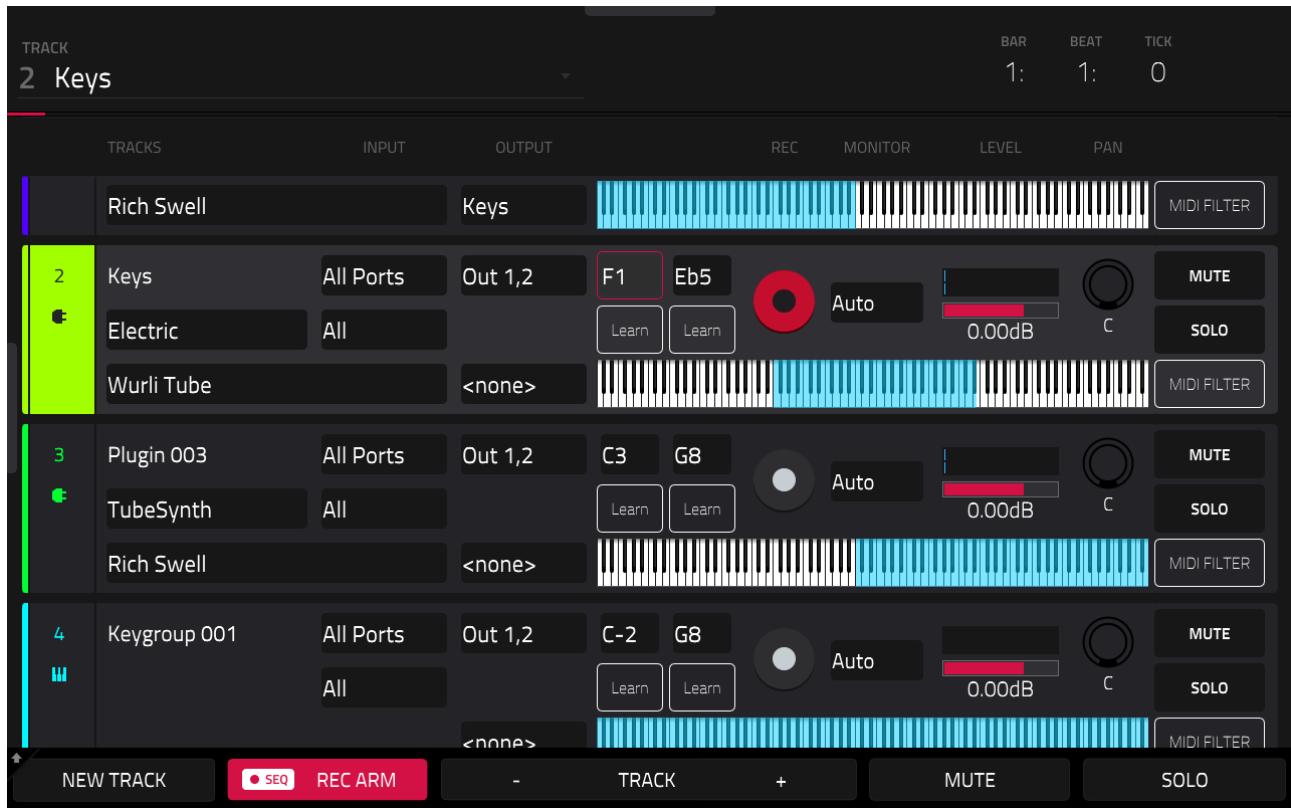
Now set the **MIN** note on **track 2** to **C3**:



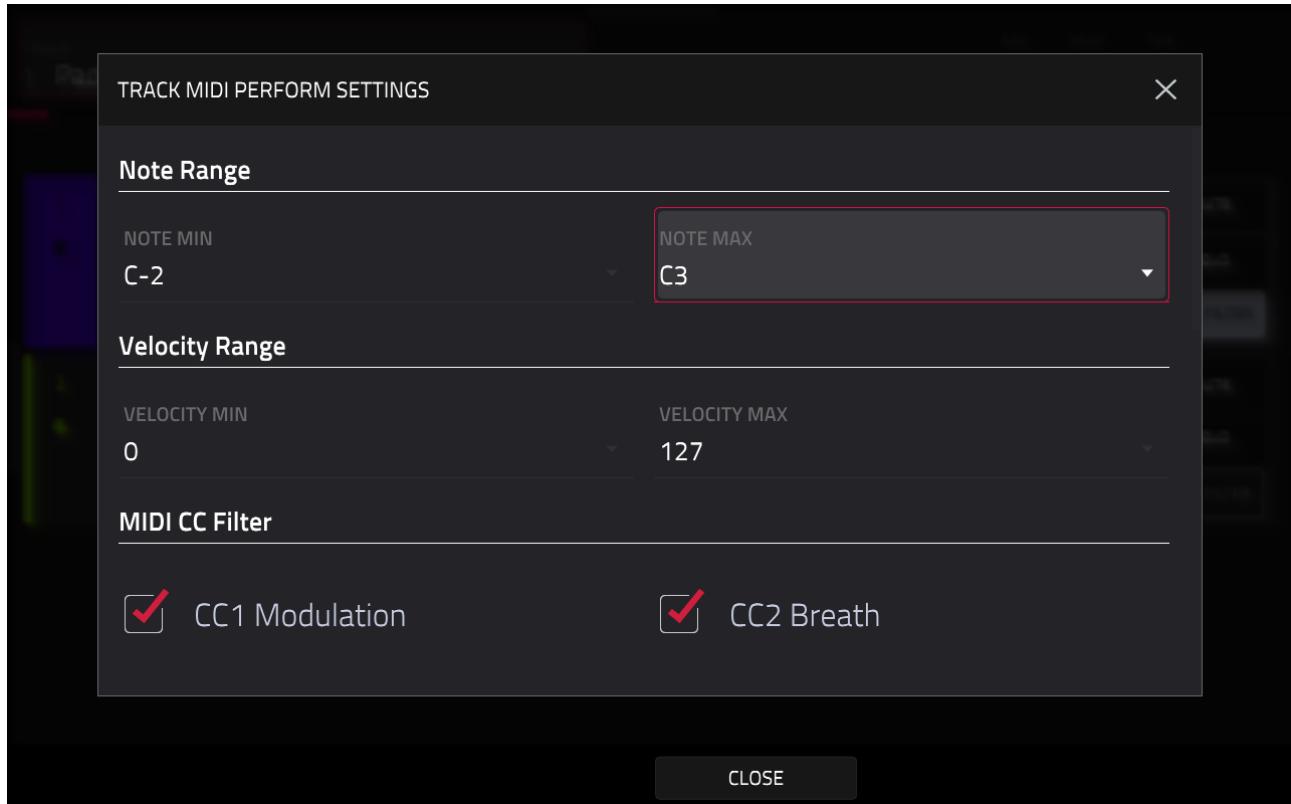
Now the notes below C3 on track 2 are disabled. As the two tracks are still triggered together by your controller, the entire note range is still covered by 'active' notes, but the sounds are now split across your keyboard controller, effectively allowing you to play two independent instrument parts within the same controller. For example, a low pad chord progression combined with a higher electric piano lead line.

The examples here use two tracks, but will work with as many tracks as you need -you could for example configure four tracks, with one track covering the entire range (and hence triggered on all notes), two tracks split in the middle, and a fourth track set to play on the central third of the keyboard:

C03: WORKING WITH HARDWARE SYNTHS

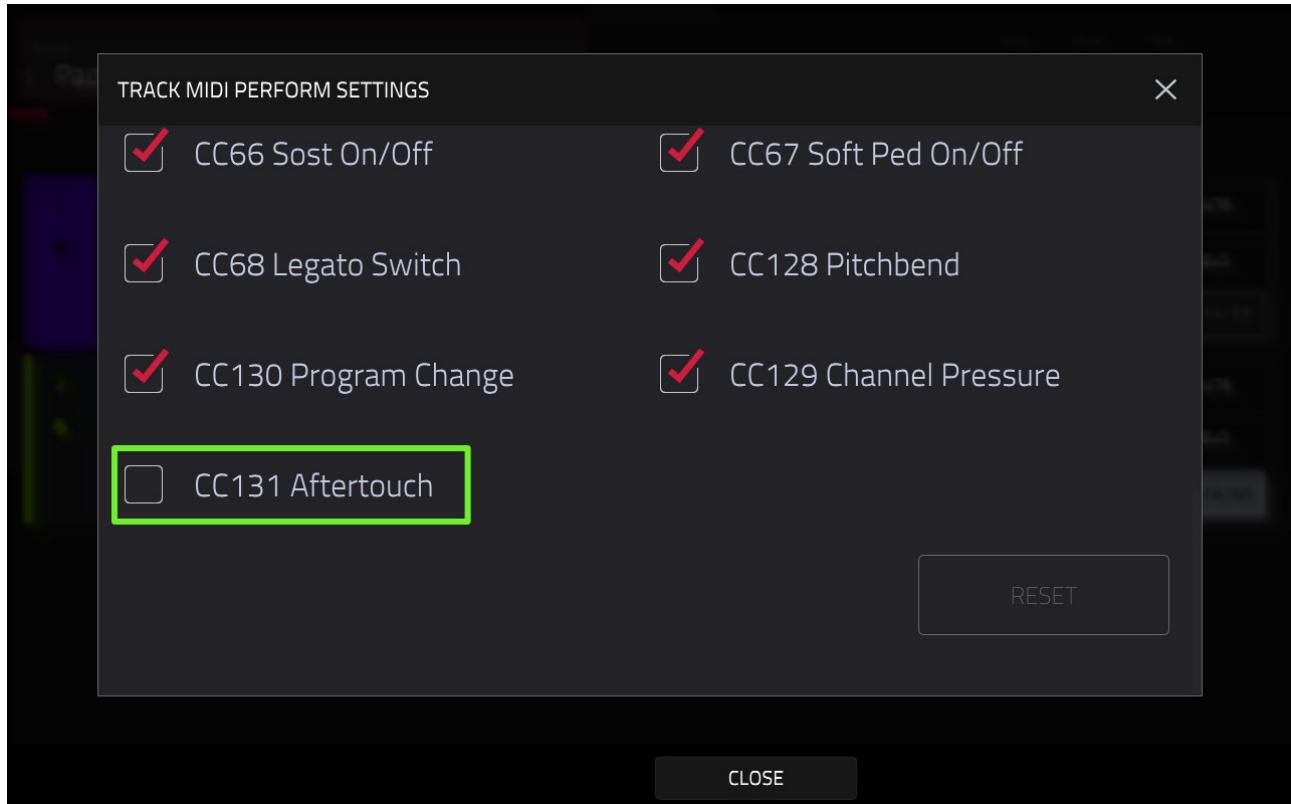


Tap on the **MIDI FILTER** button on a track:



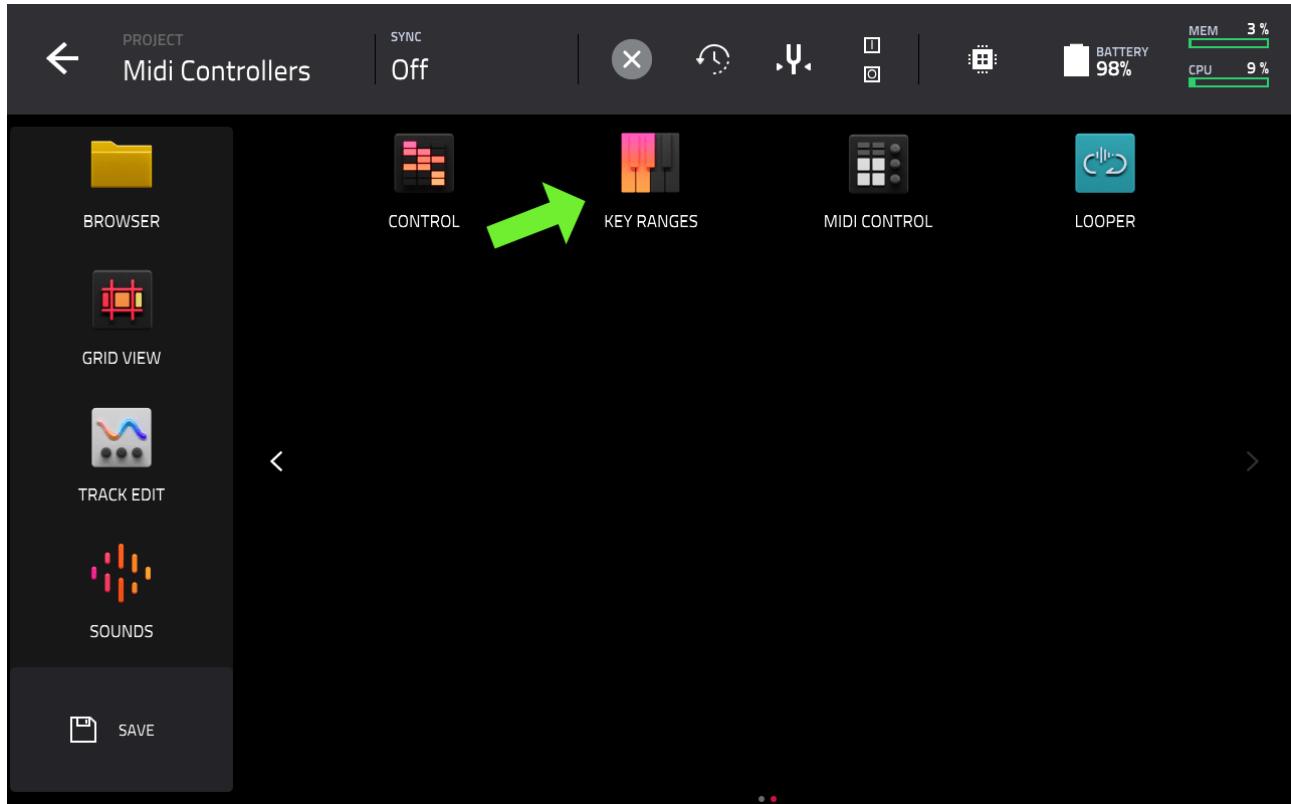
Here you can also limit the velocity range at which a track can be triggered (with or without note range restrictions). For example, hard velocities (over 80) could trigger the Keys notes, soft velocities could trigger the notes on the Pads track.

You can also use the **MIDI CC filter** to disable certain MIDI messages reaching the track – for example, drag upwards and **uncheck CC131 Aftertouch** to stop any aftertouch messages being sent to the track:



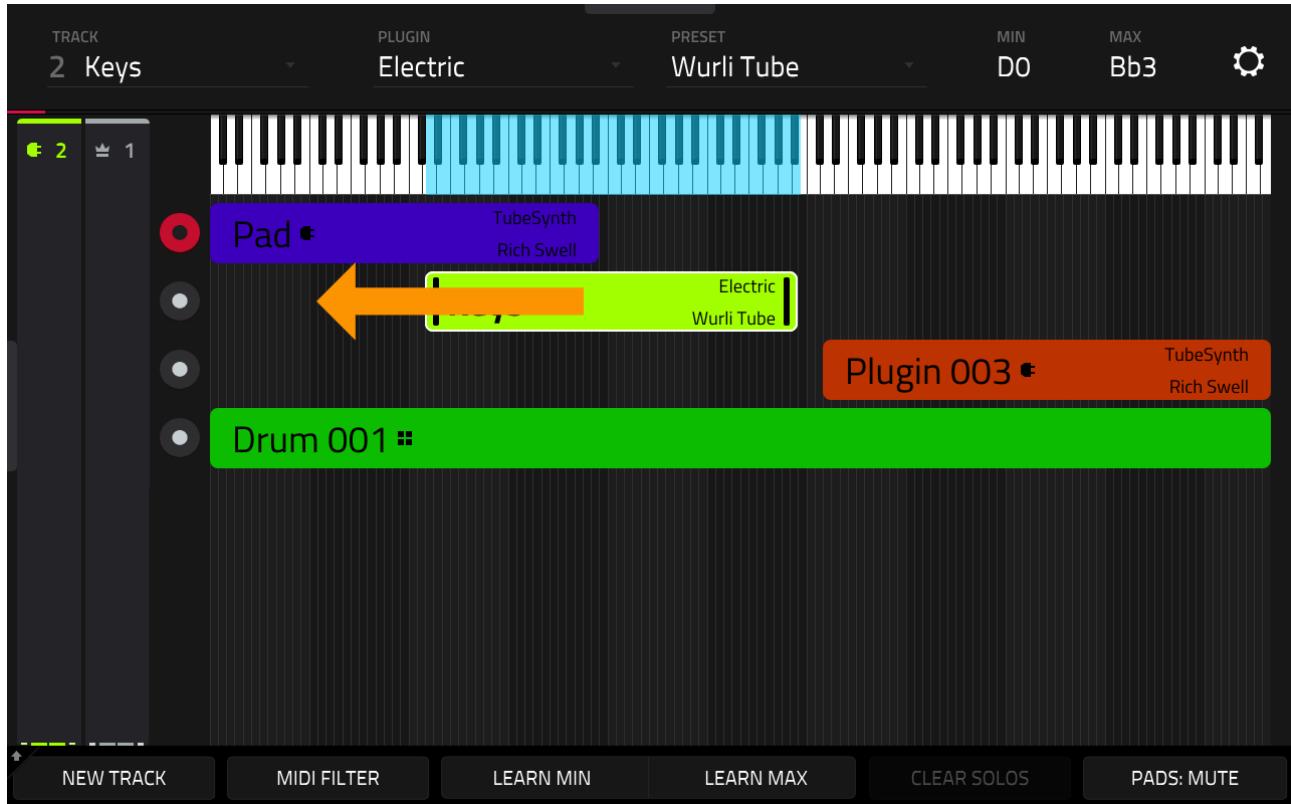
And of course you are not limited to plugin tracks, this all works with MIDI and KEYGROUP tracks as well. It even works with DRUM tracks to allow you to place a drum kit on the pads and melodic instruments on your keys; in fact there's a special customised split available for this, but it's accessed in a different screen.

Go to [**MENU**] > **KEY RANGES** – by default, the key ranges icon is found in the second **MENU** screen:



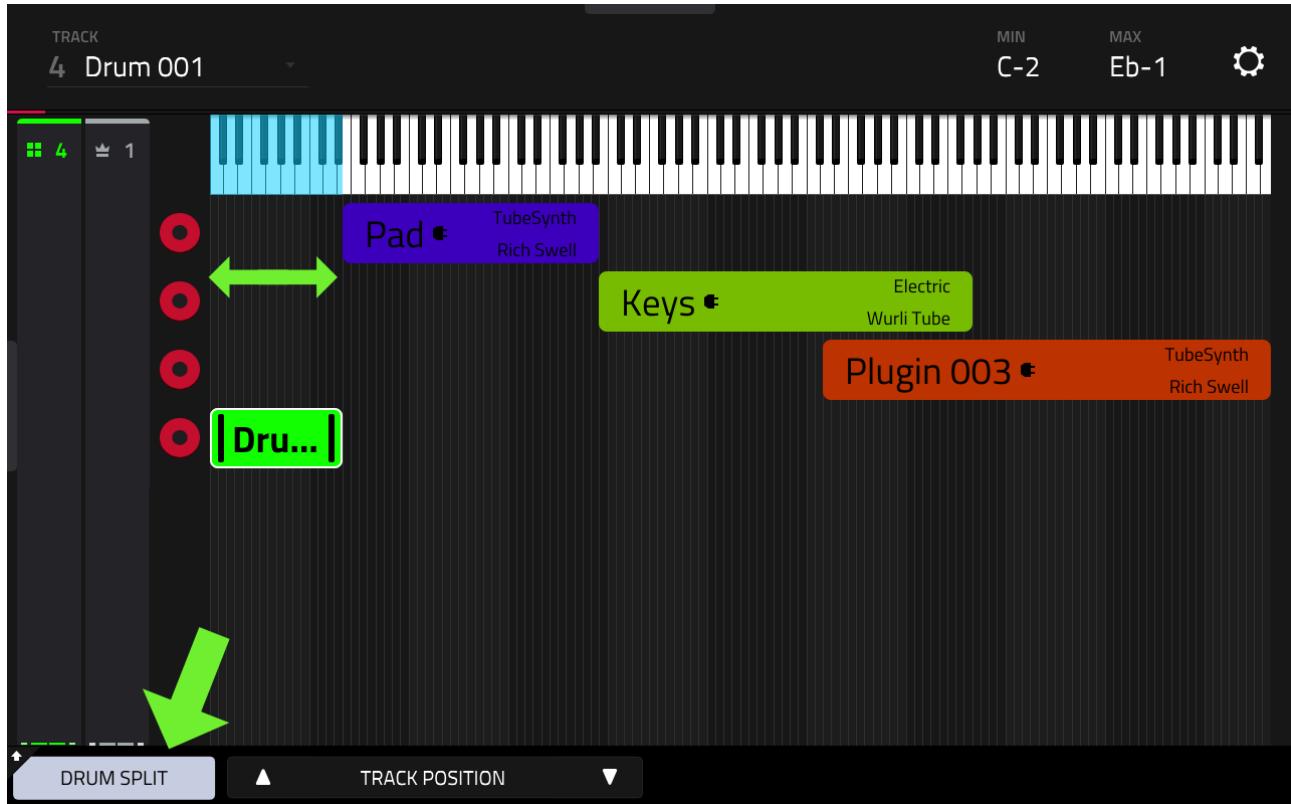
The KEY RANGES screen offers a more tactile way of managing and editing the note ranges across tracks. Here you are also able to change the note range assignments on the touchscreen by dragging the colours bars for each track.

C03: WORKING WITH HARDWARE SYNTHS



Tap on a track to view its note range (blue notes). You can also drag the entire note range up and down the keyboard (hold from the middle of the track rather than the edge).

Hold down **[SHIFT]** and select **DRUM SPLIT**



This function assigns **BANK A** of the DRUM track to MIDI notes **C-2** to **Eb-1**. You can now use the MPC pads to play any drum samples assigned to those pads while your MIDI controller plays the instrument tracks using the defined keyboard splits (from note E-1 onwards). This also works great with the pads and built in keys on 'MPC Key' models.



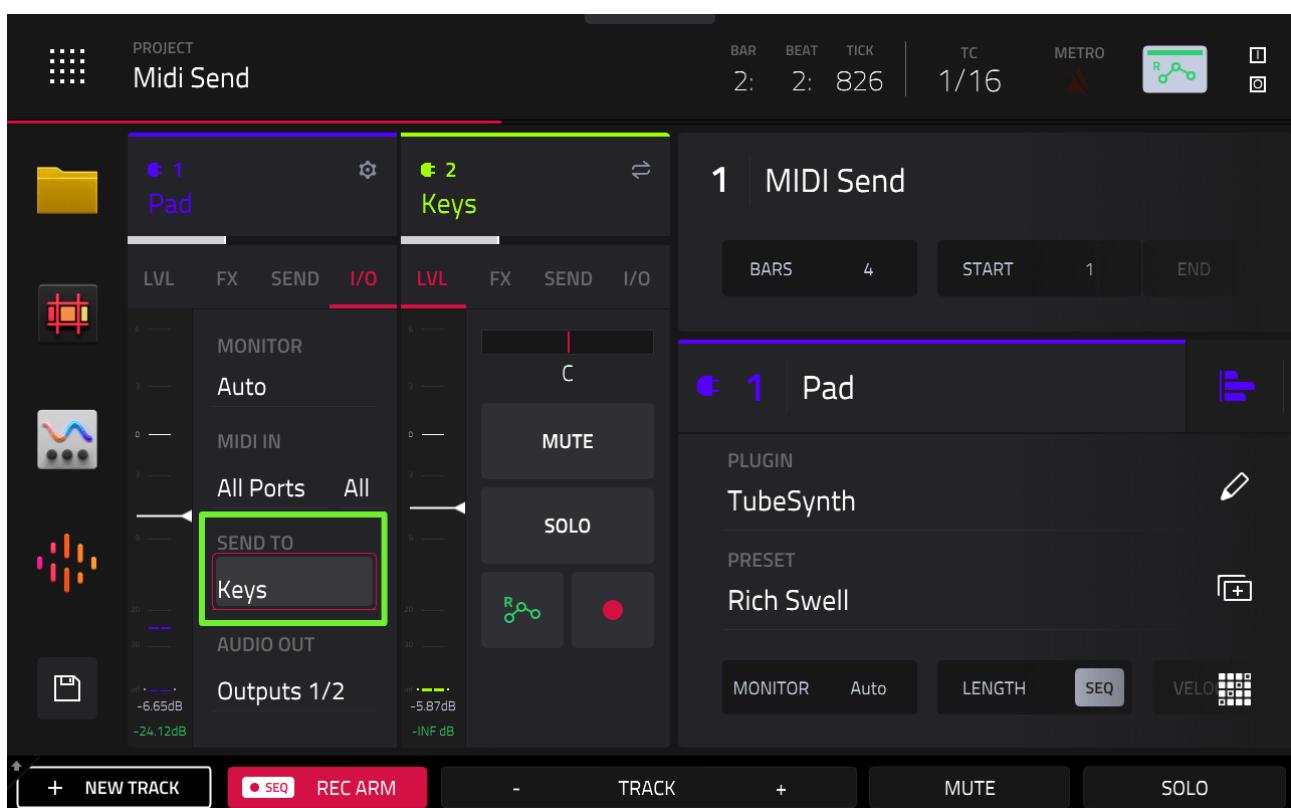
While you are in this screen, the pads themselves can be used as track mute/solo triggers, allowing you to quickly mute (or solo) tracks while you work on the note range configuration.

USING MIDI SEND TO LAYER TRACKS

We've seen that one use of the key ranges option is to provide a way of 'layering' multiple tracks. Another way to layer tracks is to use the MIDI SEND feature.

Load up the project **C3 MIDI Send.xpj** – it's the same two track set up as before, this time I've created a short melody on track 1. Hit [**PLAY START**] to hear the pad melody.

From the **XL CHANNEL STRIP** for track 1, set the **SEND TO** parameter to **Keys:**



Hit **[PLAY START]** again – this time you'll hear both tracks play together, creating a layered pad and keys sound. Track 1 is now simultaneously

sending all the MIDI from track 1 to track 2, thus triggering the Keys patch on track 2.

If you hit the pads with track 1 selected you'll hear that SEND TO also works fine – in fact will continue to work when track 1 is triggered from any controller.

Now select **track 2** and hit the pads. As you can hear, SEND TO does not create a reciprocal relationship, it's a purely 'one way' trigger.

C04: AUTOSAMPLING

We've learnt how easily external hardware synths can be incorporated into a standalone MPC workflow, including how we can capture their audio output to audio tracks within our projects. But we can utilise hardware synths in other ways, including 'cloning' them to make our own unique 'in the box' keygroup instruments.

TOPICS COVERED IN THIS CHAPTER

- ✓ How to autosample external hardware synths
- ✓ Understanding keygroup instrument structure
- ✓ Customising auto sampled keygroup instruments
- ✓ Configuring filters and filter envelopes
- ✓ Sustain looping samples

AUTOSAMPLING HARDWARE SYNTHS

As we've seen, external synths can be permanently connected to your standalone MPC and can be recorded directly to MPC audio tracks to capture their audio output as an integrated part of any standalone project.

Working with audio tracks is of course fairly limited compared to working with MIDI data, as it's very difficult to make any changes to the performance within that track (unlike a MIDI performance). But there is another option that allows us to capture the unique sound of a hardware synth while still giving us the flexibility of working with MIDI data – the **Auto Sampler**.

Auto sampler is able to automatically sample a selection of individual notes from any connected hardware MIDI synth and transform them into a playable **keygroup instrument**. The resulting instrument can then be further edited and customised just like any standard keygroup program and can form an integral 'in the box' element within your project. At this point you no longer need the hardware synth attached to your MPC, you can just use the 'cloned' keygroup instrument and record fully-editable MIDI performances with it.

While the most common aim of the auto sampling process is to initially clone a specific synth patch, we'll also discover that auto sampled recordings can also be used as a foundation to a completely new and unique 'MPC-enhanced' instrument – in my opinion it's an absolutely essential tool to learn how to use as it opens up so many different sound design opportunities.

The first part of this tutorial primarily assumes you have a hardware synth connected to your MPC (using the configuration described in the previous chapter); however, if you don't have a hardware synth to hand then you can still follow every step of this tutorial simply by autosampling one of the internal synth plugins instead – the process is almost identical and I'll explain how to configure both options.

Either way, we'll be loading up a 'raw' auto sampled instrument for you to practice your keygroup editing skills later in the chapter.

INITIAL SET UP

Load up the project **C04 Autosampler.xpj**, this is our ongoing Section C project. Remember from the previous tutorial that we set up two tracks to handle our hardware synth; a MIDI track (3) called '**External Synth MIDI**' which sends MIDI data out to the hardware synth, and the audio track (4) '**External Synth Audio**' which was configured to receive the audio output of the synth.



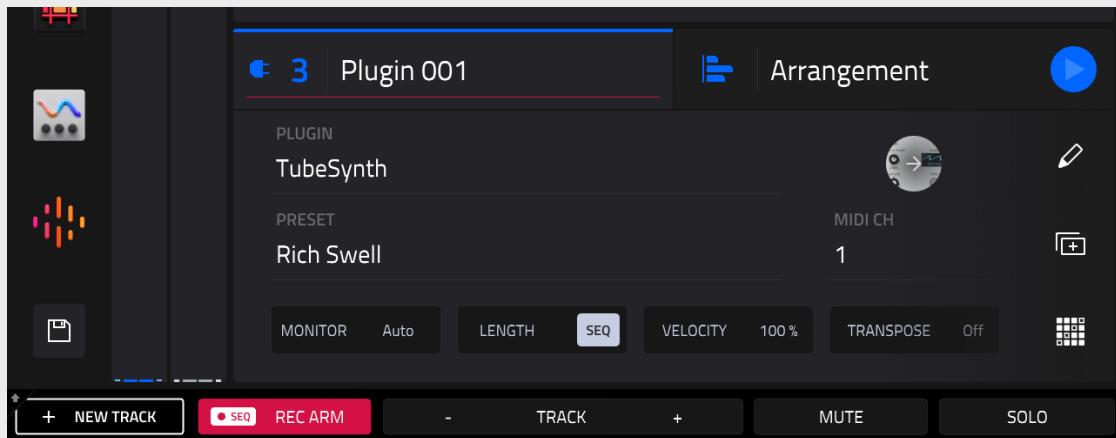
At the end of that last tutorial I actually recorded the synth audio to that MIDI track, but I've removed that audio now as we won't be needing it anymore.

The first step is to ensure that this configuration is still working as expected; so select the **External Synth MIDI** track, hit some pads and you should hear the audio via the 'External Synth Audio' track. If it's not working, please refer back to the previous chapter to troubleshoot where the issue may be.

PLUGIN ALTERNATIVE

If you don't have an external synth to hand you can still follow along to this tutorial by autosampling a patch from one of the internal

synth plugins – the procedure is pretty much identical. To do this, go to [MAIN], tap and hold down on the **MIDI** icon in the **External Synth** **MIDI** track panel and from the pop up choose '**PLUGIN**' to convert the MIDI track to a **PLUGIN** track.



Now configure any internal synth plugin (and preset) as described previously in the course and make sure this track is selected before heading over to the SAMPLER screen.

With your synth or plugin successfully playing audio through your MPC, take little time configuring the patch to ensure it will give the best autosampling results possible.

Firstly, turn off any ambience FX such as reverb and delays as well as modulation FX such as chorus and flanger. It's much more flexible to record dry and add MPC FX later. The exception would be where the synth effect makes up an important part of the 'character' of the sound you are trying to capture, such as an analog distortion or other similar 'harmonic' FX or unique EQ or filters.

Secondly, avoid any patch that contains 'tempo' elements, for example 'arpeggiated' patches, 'sequenced' patches or any kind of delay or tempo based modulation effect. This is because a typical auto sampled instrument relies on tuning samples up and down ('**keytracking**'), and the tuning process is going to cause havoc with any sample containing 'embedded' tempo elements.



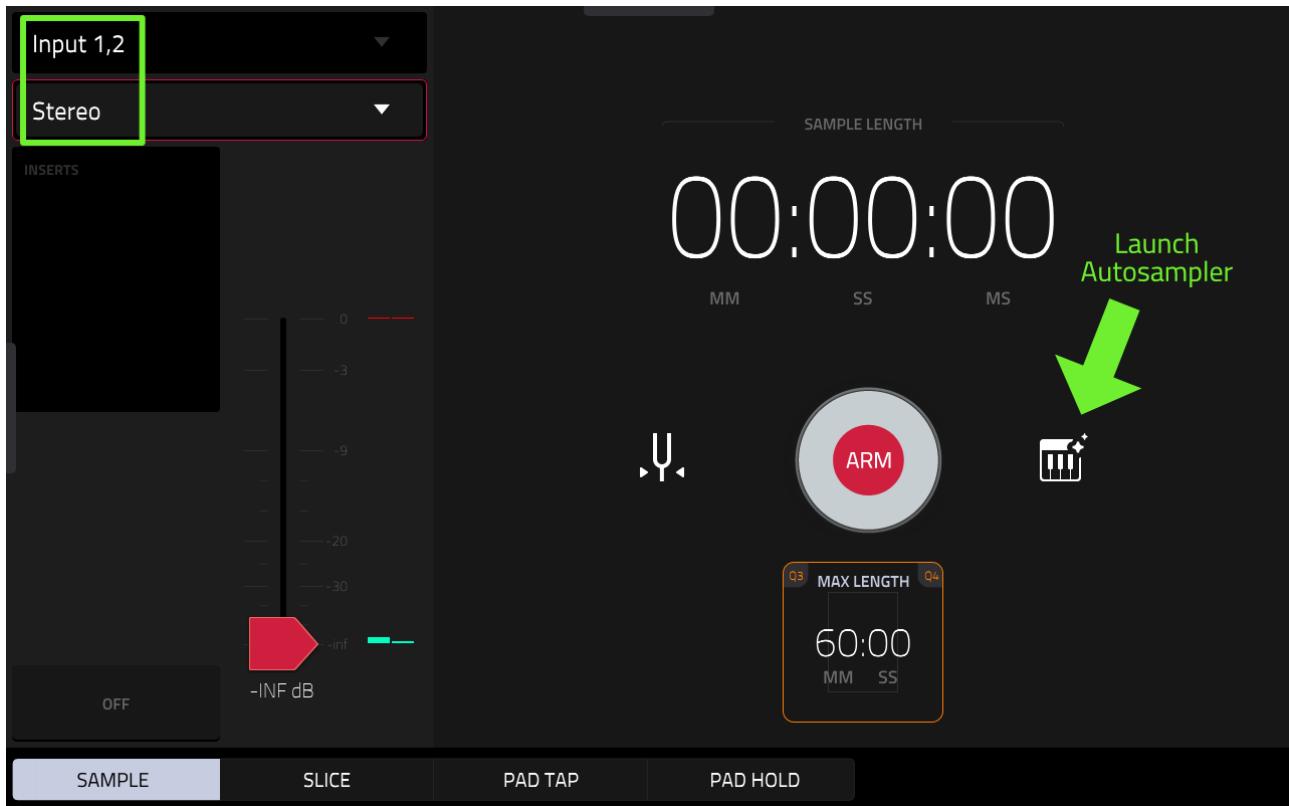
There are other more advanced ways you can set up a patch, but I'll describe these later in this tutorial as they are not strictly a requirement.

Beyond configuring the sound parameters of your patch, don't forget to double check all of the following:

- set a nice hot output signal from the synth
- Make sure your analog synths are always warmed up and tuned to 440Hz concert pitch
- no nasty hums or hisses from your cables
- make sure the recording input gain on your MPC is set to leave plenty of headroom (try to aim for around -9dB average headroom)

AUTOSAMPLER SETTINGS

Select your **MIDI** (or **PLUGIN**) track (not the audio track) - now go to **[MENU] > SAMPLER**.



Before we head over to the actual AUTOSAMPLER screen, first, set the **INPUT** to match the inputs your synth's audio outputs are connected to (e.g. **Input 1/2**).

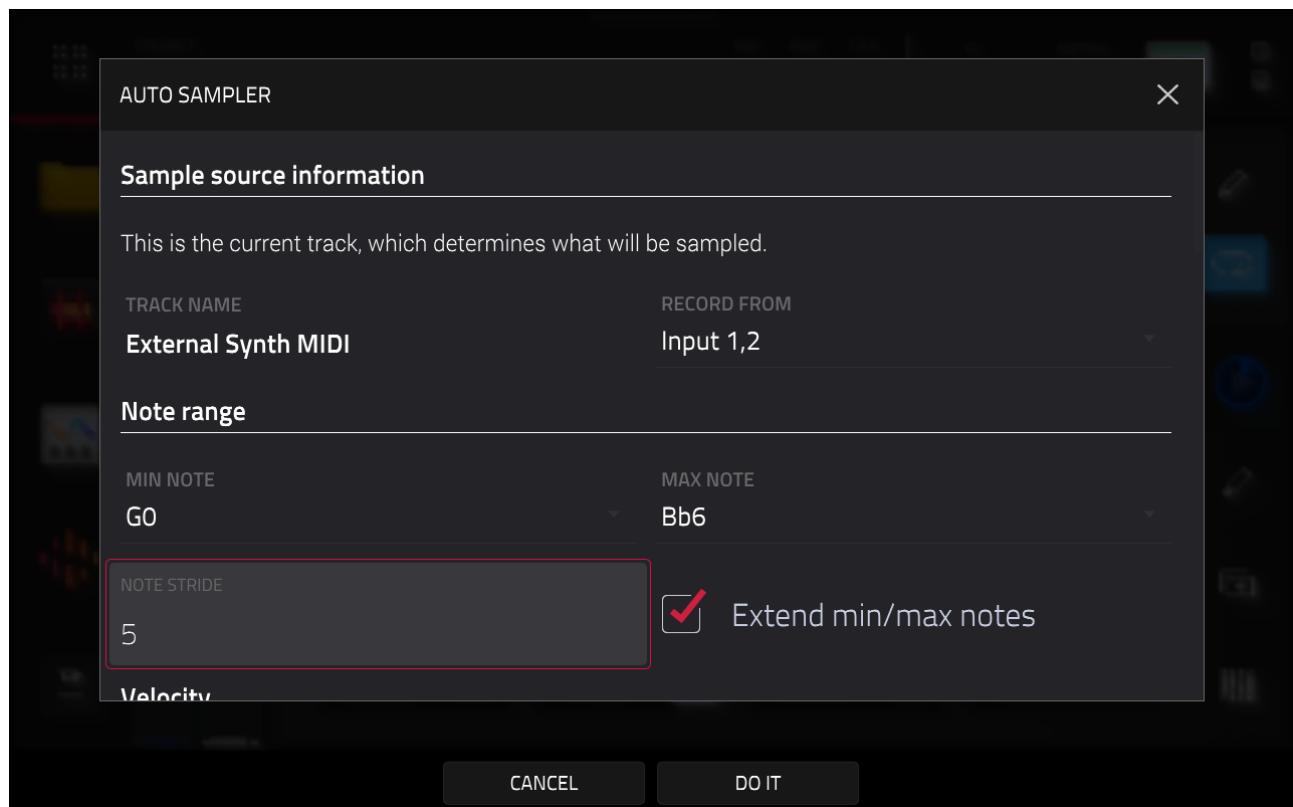
Plugin Alternative: If you are going to autosample an internal plugin, set the **INPUT** to **Resample L+R**



Next decide on whether you want to create a mono or stereo recording of each sample. Listen to the patch on headphones and if clearly it contains stereo content that you want to capture in the final recording, then set the

channel setting to **Stereo**. Otherwise we can halve the size of the resulting instrument simply by setting this to **Mono**; remember we can always add stereo FX at a later date.

Now hit the **keyboard icon** to the right of the ARM button to launch the **AUTO SAMPLER**:



TRACK NAME reminds us which track we are auto sampling; in this case it's our **External Synth MIDI** track (or your **Plugin 001** track, if sampling a plugin). Here the **RECORD FROM** is the same settings we configured in the Sampler screen – notice there is no option to set the **OUTPUT** channel to stereo or mono, hence why we set it in the SAMPLER screen instead.

Next up is the **NOTE RANGE**. Configure this to ensure you cover the *usable* range of notes on the original synth patch. Realistically most synth patches are often effectively unusable at the extreme ends of the keyboard, be it ear piercing high pitches squeaks to barely audio low rumbles, so there is absolutely no need to record these notes, it's just a waste of memory.

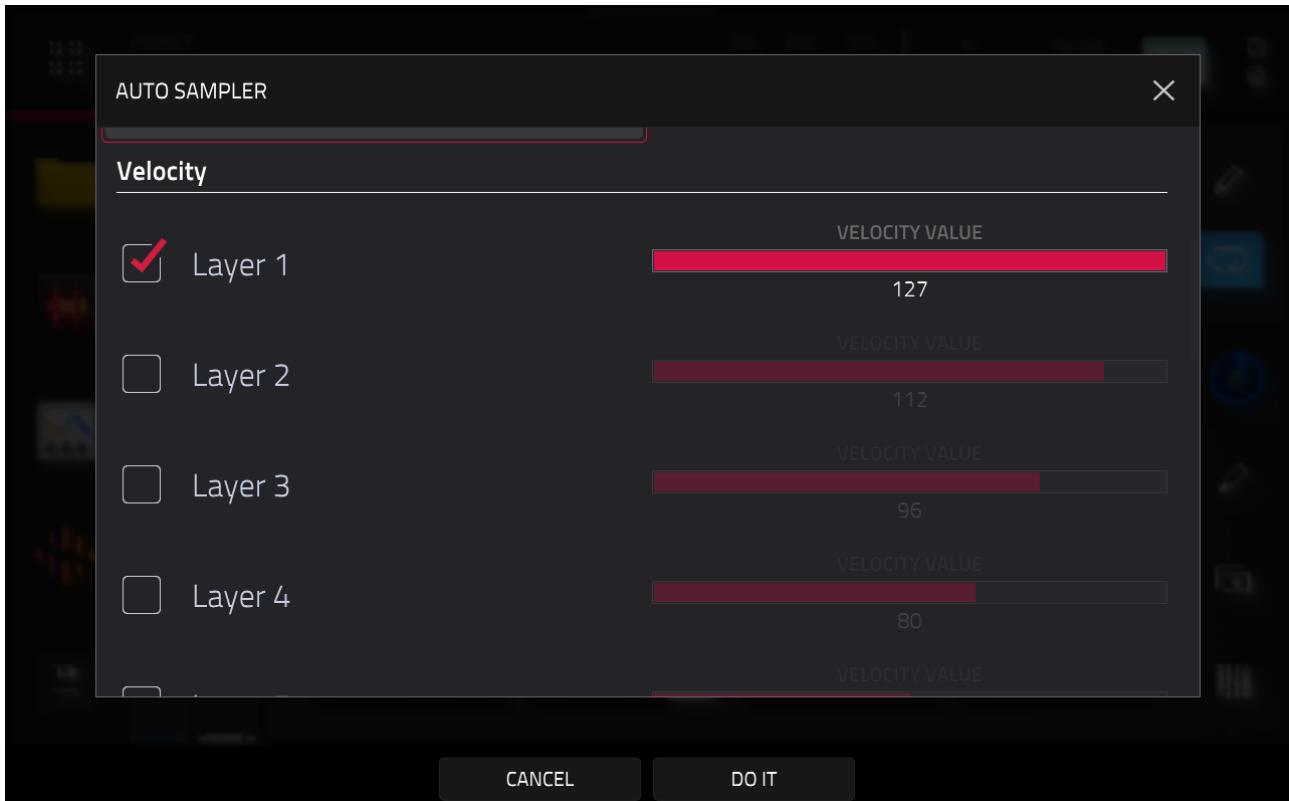
You'll have to have a play using a keyboard or use pad perform to work out the usable note range for your current synth patch as this will vary, but generally I find **MIN NOTE: G0** and **MAX NOTE: Bb6** will cover most synth patches pretty comfortably (we can always remove unwanted samples and keygroups from the instrument at a later date).

NOTE STRIDE determines how many notes will be sampled. A NOTE STRIDE of 1 will mean every single note within the defined note range will be sampled (i.e. chromatic sampling). This will give the most accurate recording but also use the most memory. Generally speaking you should avoid chromatic recording unless you have a good reason to do so (I give examples later in the tutorial).

For most synth patches, where you've performed some reasonable preparation of the patch, a **NOTE STRIDE** of **5** typically yields excellent results, both sonically and in terms of efficient memory usage.

Extend min/max notes should normally be left 'checked'. This ensures that the final instrument is spread across the entire note range (probably most of these notes will be unusable, but it doesn't impact memory so you might as well enable it and see what happens).

Now drag the page upwards:



VELOCITY determines how many **velocity layers** will be sampled per note in an attempt to capture any velocity sensitive features your synth may have. The issue is that every note you sample increases the memory usage of the final instrument (8 layers equals 8 times the memory) so for most synth patches I would recommend you leave this set to sampling only **LAYER 1** at the maximum velocity of **127**.

I will show you later in this tutorial how to create velocity modulations within the MPC itself, which will have the advantage of not having the obvious 'steps' in timbre that we get when using discrete velocity layers.



NOTE LENGTH is simply how long each sampled note should be; to determine this, first consider what type of note we are sampling.

Some synth patches tend to be what I would call '**pulses**', these are notes that will eventually decay to zero volume (e.g. plucks, piano notes, percussion etc). With these notes, try to determine the length of the *longest* sounding note across all keys in the instrument (often found at the lower end of the note range) and set the **NOTE LENGTH** to match this – if required, you can always manually edit and discard any 'silent' sample data at the end of the shorter notes.

That said, always be conscious of memory usage, so either way I would recommend that you limit **NOTE LENGTH** to no more than around **8000ms**; if this means that your notes will be cut off then this is not

normally a problem as we can truncate and fade then 'on the fly' in the final instrument.

Other types of patches employ **sustained notes**; these will continue playing for as long as you hold down the note. For sustained notes I recommend sampling for a maximum of **8000ms** as this will give us the freedom to either fade out each note or alternatively try editing each sample to create a seamless '**sustain loop**'. However, if you feel you can sample a shorter length, then all the better - I will look at sustain looping in more detail later in the tutorial.

TAIL determines how long the MPC will continue to sample after the note stops playing. If you follow my workflow this is a setting that it almost always not required as 'tails' will be added within the instrument itself. I normally set this to **100ms** (setting to 0 sometimes results in a loud click at the end of the sample, and we just don't like stuff like that!).

BASE NAME is the name that will be given to the auto sampled instrument, so try to give this a unique name. You can always rename your instruments at a later date, but do be aware that the name you use here will also be used to generate the names of all the samples within the instrument as well.

My preference is to incorporate the common 'tags' that are used both in Akai expansions and my own expansions as these can be used in search box in the BROWSER. So a pad instrument has the tag 'Pad-', a bass patch has the tag 'Bass-' and so on. Here's an example base name for a 'pad' patch: '**Pad-MF Warning**':

- '**Pad-**' is the search tag; use a hyphen immediately after the tag (no space) – the hyphen isn't currently important in standalone MPCs, but it is used in the MPC Software DAW as a way of grouping and identifying common instruments, so it's definitely good practice.
- '**MF**' is my own internal reference, for example you could use this to refer to the synth you recorded.
- '**Warning**' is just a random patch name – I literally just make a name up on the fly.

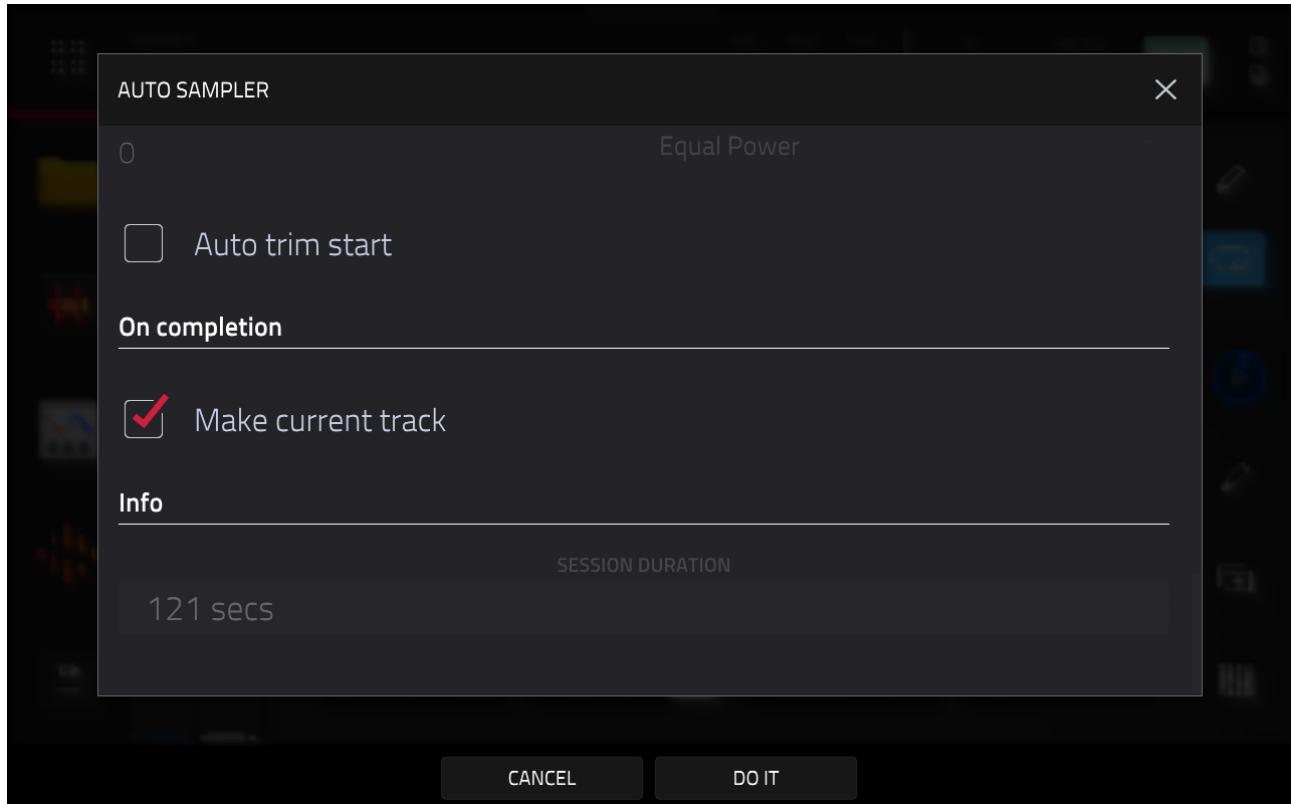
All the resulting samples that Autosampler generates will have the base name in the actual file name of the sample, e.g. '**Pad-MF Warning-031 GO.WAV**'



*Common instrument search tags used in Akai and third party expansions include **String, Pad, Lead, Pluck, Bass, Organ, Keys, Brass, Percussion, Synth, SFX**. However there's no requirement or 'standard' here, in fact you can use any tags you prefer (or none at all!).*

The **LOOPING** section's purpose is to apply sustain loops on all your samples, thus saving you the hassle of doing it separately yourself. Unfortunately it's rubbish as it does not perform any clever analysis to find the perfect sustain loop; it just expects you to enter a fixed loop start and loop end and these values are just applied identically to all your samples!

It mostly gives useless results, so the only option I recommend here is to set **ENABLE LOOPING** to **OFF**.



Optional: Uncheck **Auto Trim Start** - this attempts to adjust the start point of the resulting sample to compensate for any potential latency when recording, making a tight edit at the start of the waveform. However I find this can be unreliable and often cuts off a small portion of the actual sample start point, leading to a click.

Upon Completion: This determines what the MPC should do after completing the recording and creating the new keygroup track; it can either take you straight to the track, or you can stay on the current track and continue making more auto sampled instruments. If this is just a one off session, 'check' this option so you can begin working on your new instrument immediately.

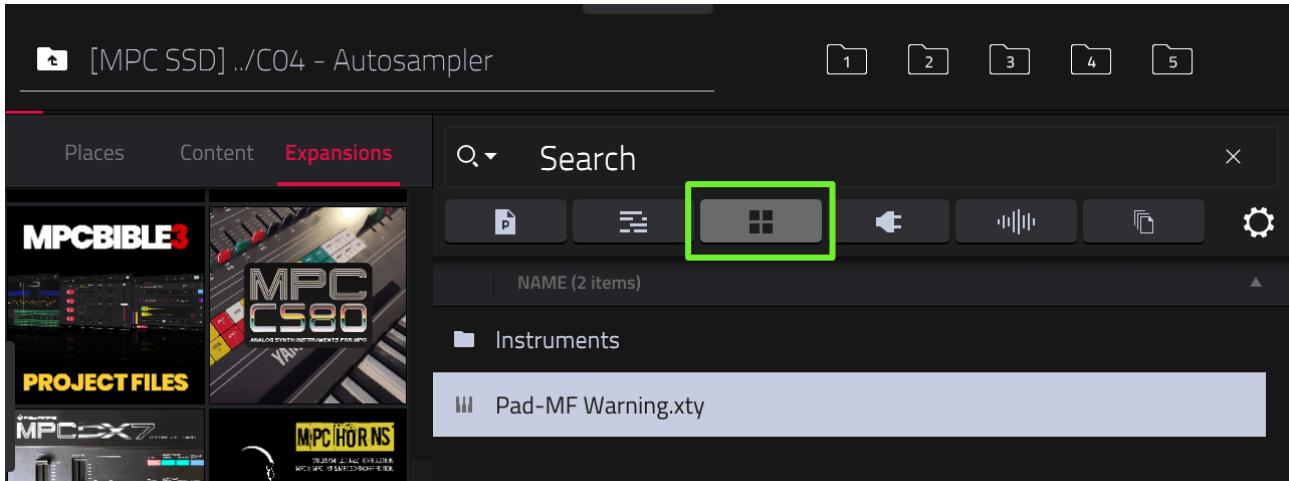
Hit **DO IT** and the MPC will perform the auto sample of your synth patch. It does this in real time so you should hear each note as its triggered and recorded. Upon completion you should be taken to your new keygroup track.

EDITING AUTO SAMPLED INSTRUMENTS

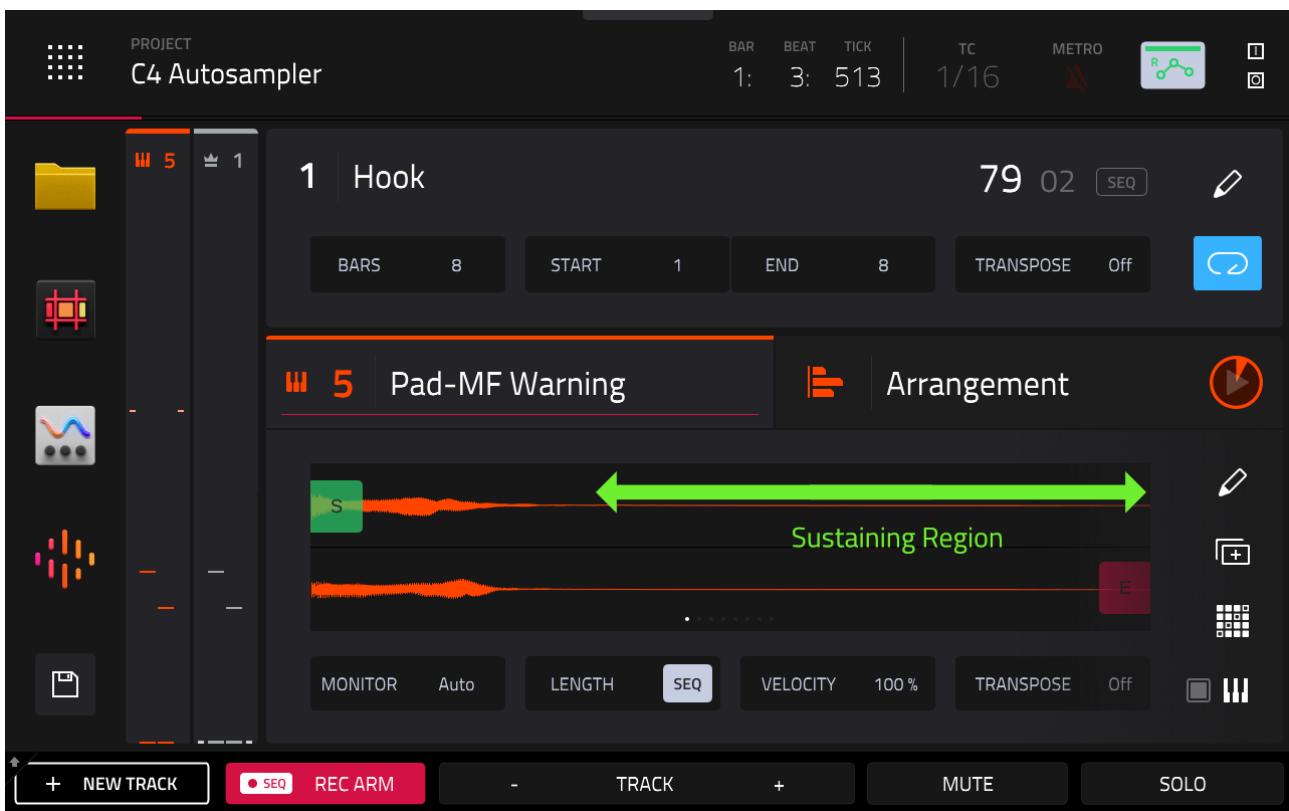
After auto sampler have done its job you'll have what can be best described as a 'raw' keygroup sample. There's no FX, no filters, no LFO and no envelopes, it's literally just the keygroups and samples assigned to the correct notes, all spread across the keyboard.

Even if you are in a hurry it's definitely worth spending a couple of minutes quickly performing some simple tweaks to make the instrument sound and play significantly better.

At this point it's time to load up an actual example of a 'raw' auto sampled instrument that I recorded previously – this is the untouched, straight out of an autosampling session without any further editing applied. Head over to the **BROWSER** and from the **C04** folder, locate the instrument '**Pad-MF Warning.xty**' – if you don't see it, make sure the 'kit/instruments' filter is enabled:



Tap to select and hit **LOAD TO NEW TRACK**. Go to [**MAIN**]:



Play a few pads and note a few things:

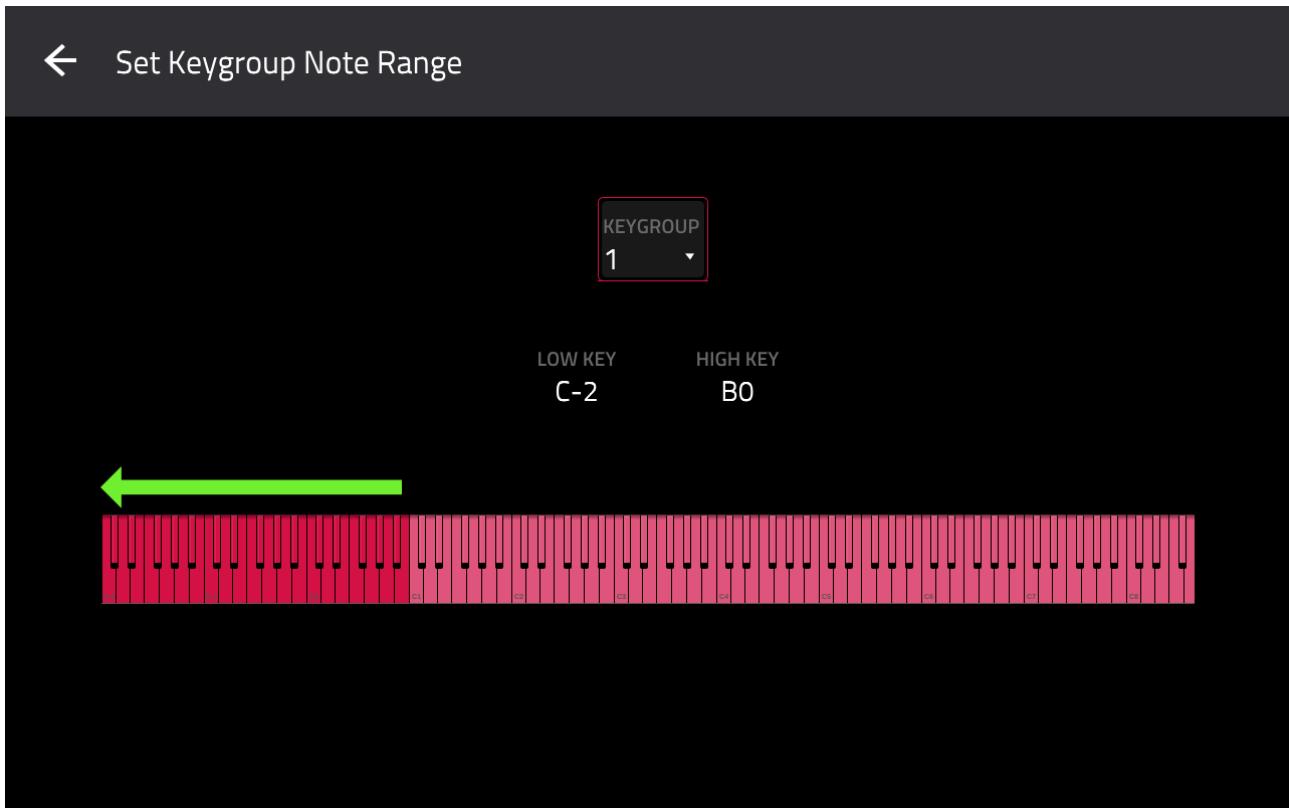
- The samples in this instrument are stereo, but as you can see it's a true stereo patch was the left and right channels of the waveform are very different (and not just different output levels).
- The samples may initially look like 'pulse' samples but they never actually fade out completely, instead after the first third of the sample has played, they pretty much enter into a low level 'sustain' (we'll look at how to loop this section to recreate the sustain).
- Currently when you play the notes, upon releasing each pad the sound stops abruptly
- From looking at the **FX tab** of the XL Channel strip, you can see the instrument itself has no FX added.

ANATOMY OF AN AUTOSAMPLED INSTRUMENT

Go to **TRACK EDIT > GLOBAL:**

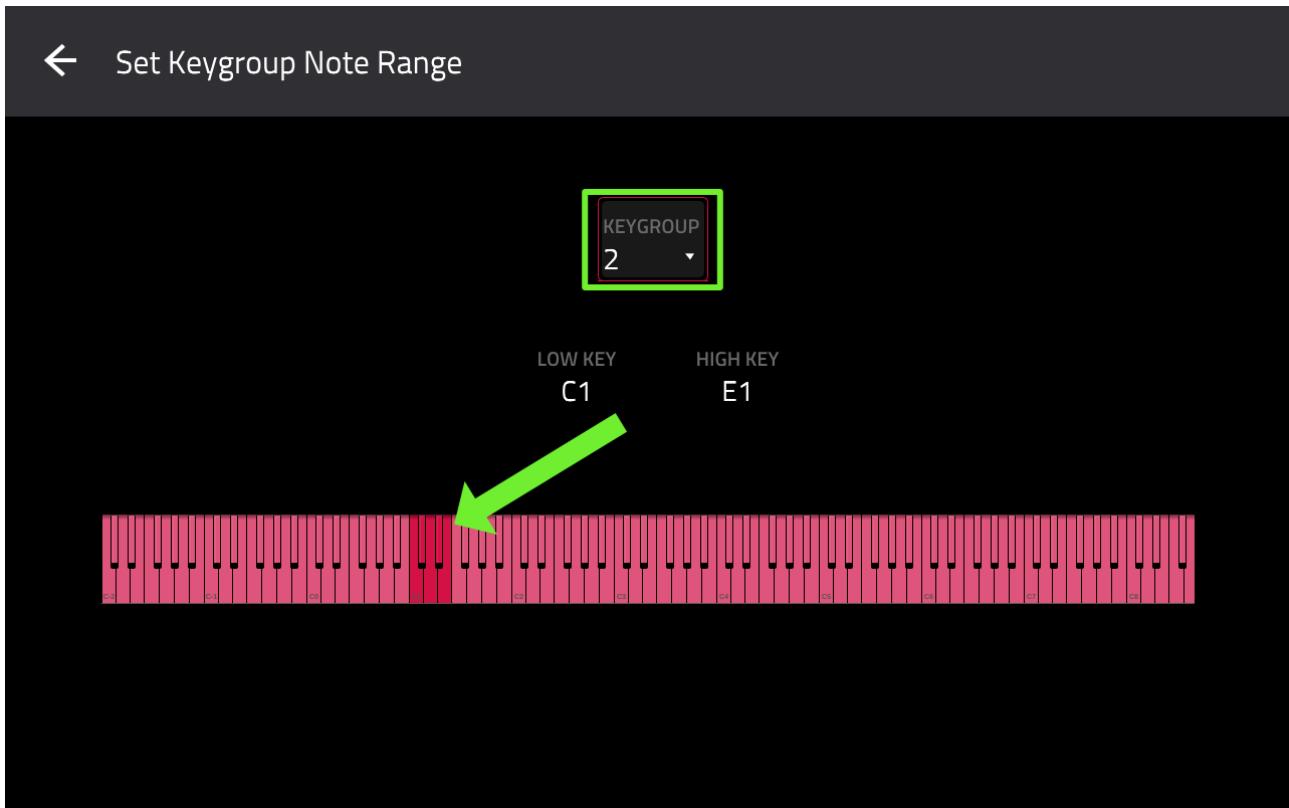


From the top bar, the **NUMBER OF KG** parameter shows that we have **16** unique keygroups. Tap on the **keyboard icon** in the top right of the tool bar. This allows you to view the keygroups graphically:

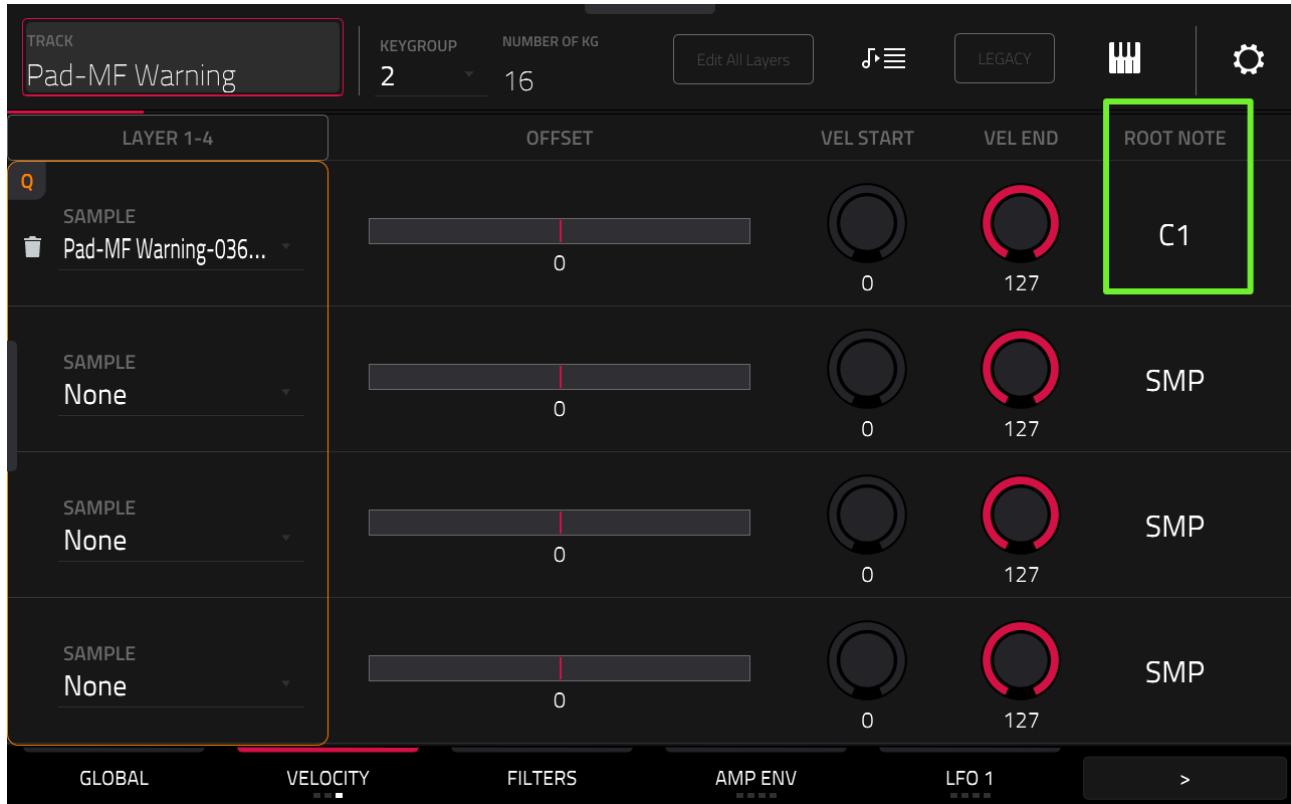


Tap on the **KEYGROUP** parameter and turn the (DATA WHEEL) to view the sixteen keygroups and the note range each one covers (currently selected note range in dark pink). As you can see, the entire 128 note keyboard is covered (light pink keys), with the first and last keygroups being extended accordingly (as per the '**Extend Min/Max Notes**' setting).

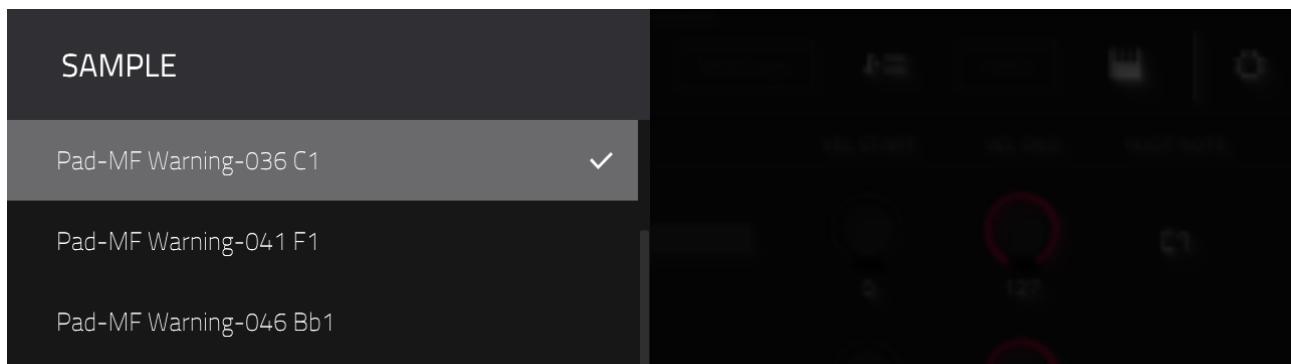
Select **KEYGROUP 2**. Notice how it covers the note range **C1** to **E1** (5 semitones).



Now return to **GLOBAL** and press **SAMPLES three times** to enter the **VELOCITY** screen:



As you can see from the **ROOT NOTE** setting, this pad layer is holding a **C1** sample. The actual sample name is too long to see in full, but double tap on the sample name to reveal that it is indeed a **C1 (MIDI note 36)** sample:



Hence in the keygroup, the autosampler has used the 'key tracking' feature on this C1 sample, tuning it upwards in semitone steps to a

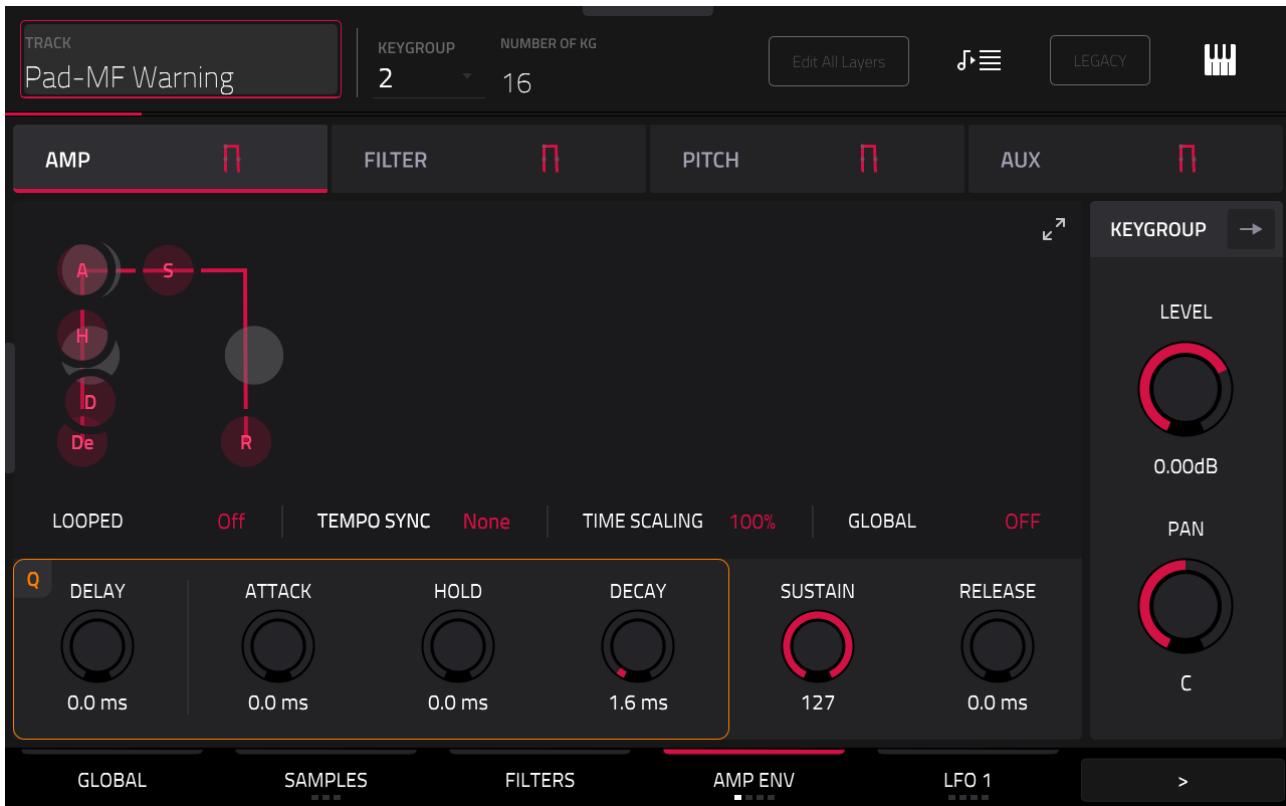
maximum of 5 semitones (to E1), which matches the **NOTE STRIDE: 5** setting we configured previously – it also of course handles all the other notes in-between; so Db1 is the C1 with a +1 SEMI tuning, D1 is a C1 with a +2 tuning, and Eb1 is the C1 with a +3 tuning.

Finally notice that the velocity range (**VEL START** and **VEL END**) for this layer is **0-127**, i.e. the entire available velocity range, and this is repeated across all keygroups, so each keygroup will play the sample assigned to LAYER 1 no matter how hard you play your keys/pads.

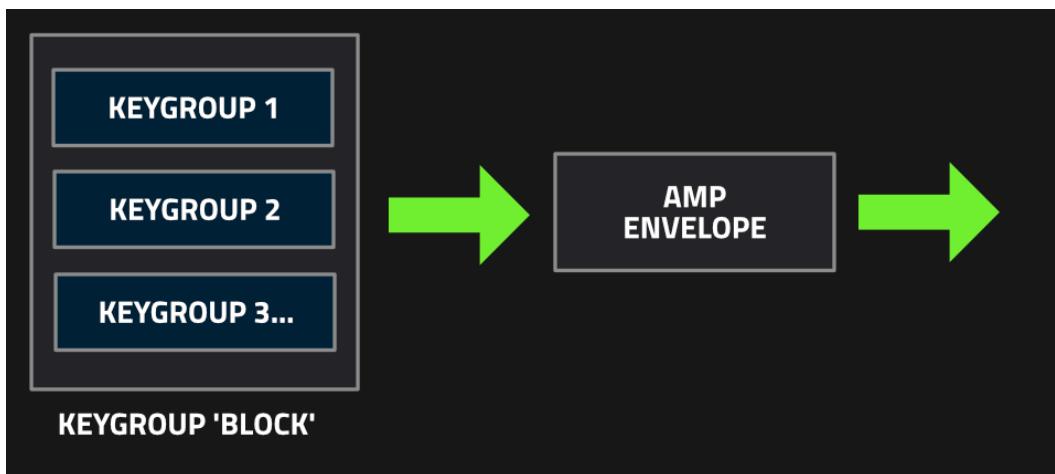
And that's the extent of what auto sampler pre-configures for us. Is this a 'playable instrument'? Yes, but it sounds quite lifeless, so let's make a few easy adjustments to quickly transform it in something much more usable.

ADJUSTING THE AMP ENVELOPE

Tap on **AMP ENV** to enter the amp envelope screen:



This is the amp (or volume) envelope for the entire instrument; the **combined output** of all 16 keygroups is sent to this one amp envelope where their volume can be shaped and modulated



As you can see, the amp envelope is configured with a zero release by default, this means when you let go of any pad in the instrument it just stops 'dead'. Increase the **RELEASE** to **1.61 s**.



Now jab at each pad and you'll hear a nice fade out.



The top of the screen shows 'keygroup 2' is selected, but on this screen you are NOT setting the envelope for a single keygroup; the amp envelope here is applied to the combined output of all keygroups together.

Now press and continually hold down a pad – it is now the **DECAY** and **SUSTAIN** parameters that are most relevant. With a maximum **SUSTAIN** of **127**, the sample is just going to keep playing at its full volume until it hits the end point of the sample. Now one option here is to try 'sustain looping' a region nearer the end of the sample and make the end sustain for as long as we hold the pad down. This is not a quick fix, but we will take a look at how to achieve this soon.

The quicker alternative is to convert this into a 'pulse' style instrument, and to do this we'll need to have each note gradually fade out while we hold it. To achieve this, first set the **SUSTAIN** to **0**. Now tap on the **DECAY** value and increase it – this controls how quickly the volume of the pad falls to the current sustain value (of zero). Set a **DECAY** of **3.35 s**.



Now when you hold down the pad you get a slow-ish fade out; you can adjust this to taste, a higher decay will mean it takes longer to fade out.

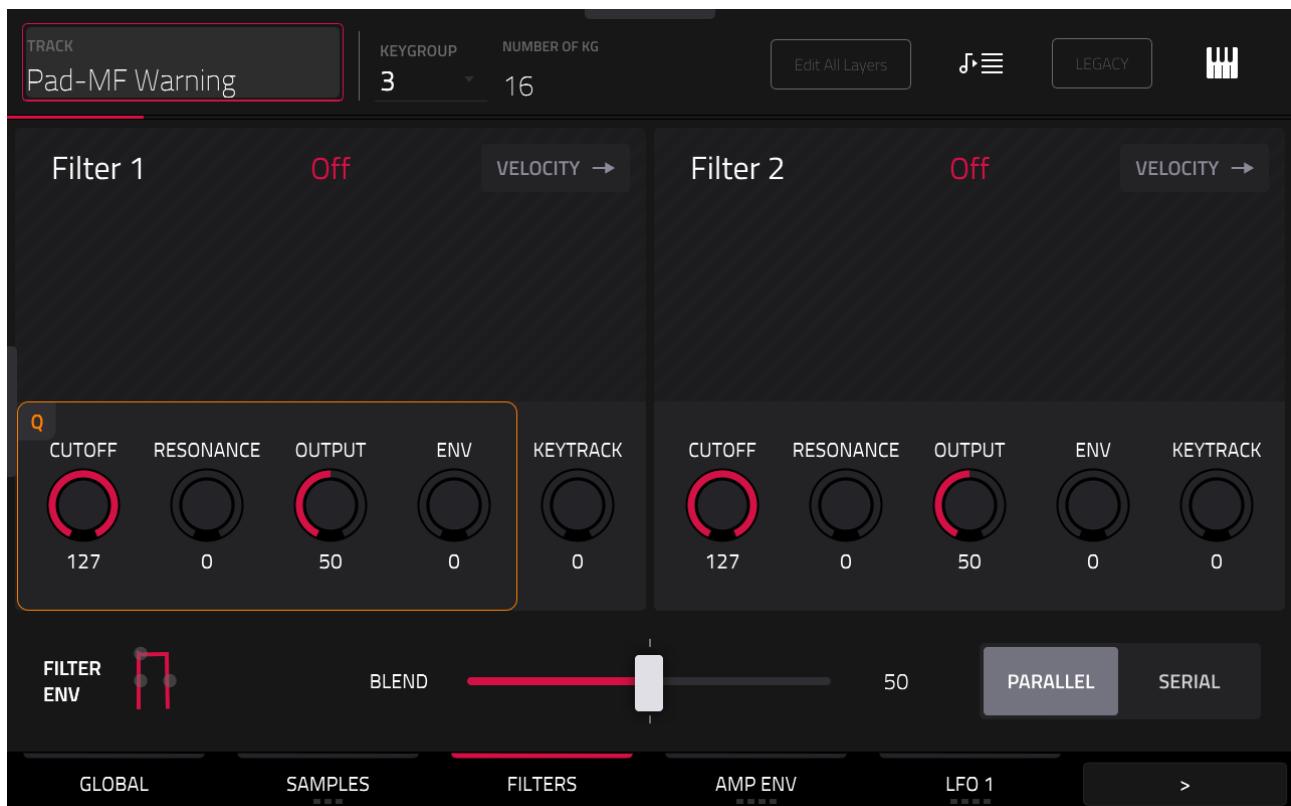
Finally, on the right side of the screen tap on '**KEYGROUP →**':



This reveals the **VELOCITY To** column which controls velocity modulation settings. Here set the **AMP** from 127 to **64** to reduce the dynamic range of each note. This reduces the difference in volume between the softer and harder pad hits, which helps ensure soft hits are still comfortably audible.

ADDING FILTER MODULATION

We can also apply a velocity sensitive filter to each note. Hit **FILTERS** to enter the filter settings screen:



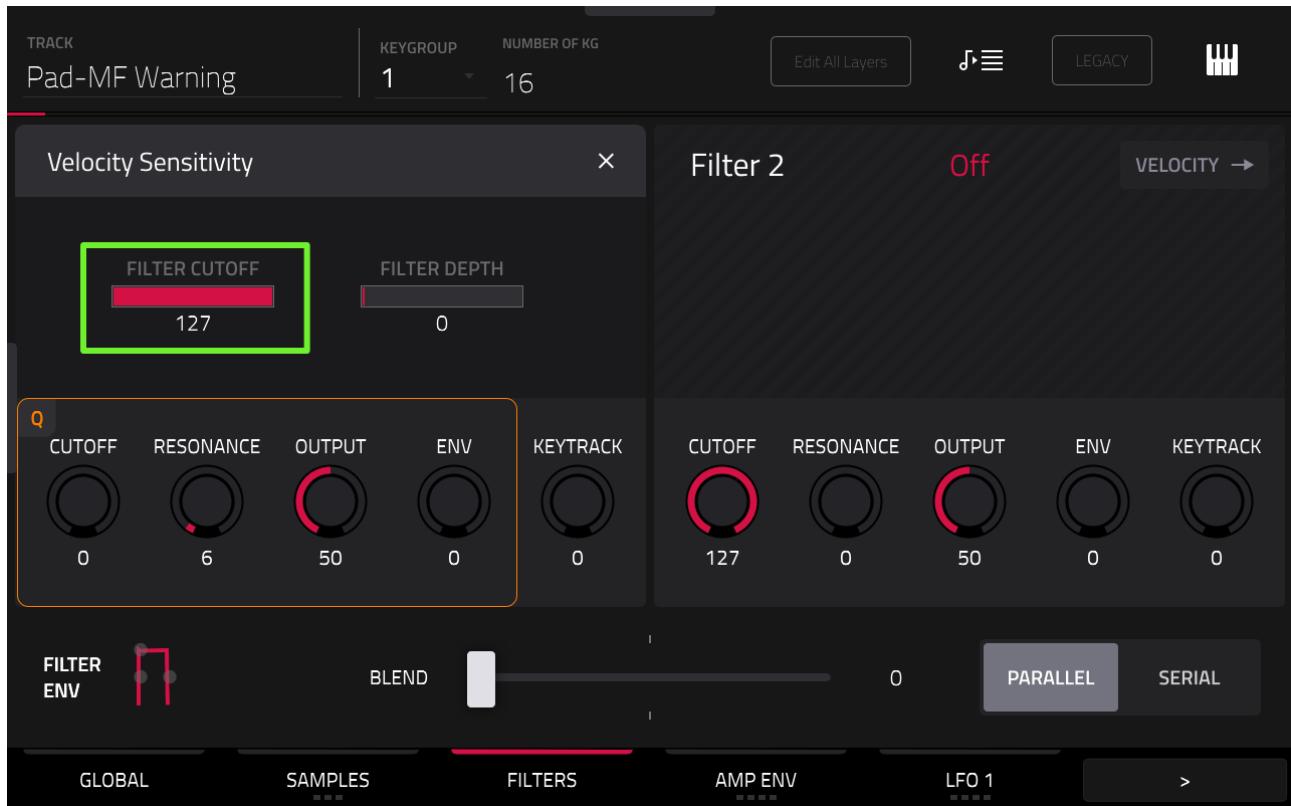
As with the amp envelope, the '**filter block**' in a keygroup instrument acts on the entire 'keygroup block' (in this case, the keygroup block contains 16 individual keygroups). While we can just apply a blanket filter across this entire instrument we can instead apply a *velocity modulated filter* to add some interesting dynamic expression.

To keep things simple, let's just use a single filter; first set the **BLEND** all the way to the left (**0**), so only **FILTER 1** is being applied.

Select a **Filter 1 type** from Off to **MPC** (its the final filter type in the list). Now set a **CUTOFF** of **0** and a **RESONANCE** of **6**. At this point filter 1 is just being applied at its maximum setting across all velocities, and our instrument is now barely audible as only the lowest frequencies are remaining.



Tap on the '**VELOCITY →**' button in the **Filter 1** side of the screen to reveal its **Velocity Sensitivity** settings:



Set the **FILTER CUTOFF** to **127**. This means that the velocity will now control the amount of filter cutoff applied, with the hardest hit getting a filter cutoff of 127 (i.e. no low pass filtering at all) and the softest hits getting the lower cutoff values (so will sound much darker).

Make sure **[FULL LEVEL]** is off and start playing a pad at varying velocities to test the filter velocity modulation – try the pads in **[BANK B]** to really hear the filtering in full effect. Close the **Velocity Sensitivity** screen and increase the **CUTOFF** to **30** for a more subtle low pass filtering (or tweak to whatever value you wish).



Adding velocity modulated filtering within the MPC means you don't have to try autosampling any velocity modulated filtering

present in your source synth patch (via the 8 velocity layer option in Autosampler). This means you only need to sample a single (127) velocity and let the MPC deal with the modulation instead, which is more memory efficient and also gives a perfectly 'smooth' modulation at any velocity.

ADDING A SECOND FILTER

One filter is cool, having two filters is awesome. First, set the **BLEND** all the way to **100** so only **Filter 2** is audible. Try a **High 4** with a **CUTOFF: 73** and **RESONANCE: 18** for a really ethereal high pass filtered sound.



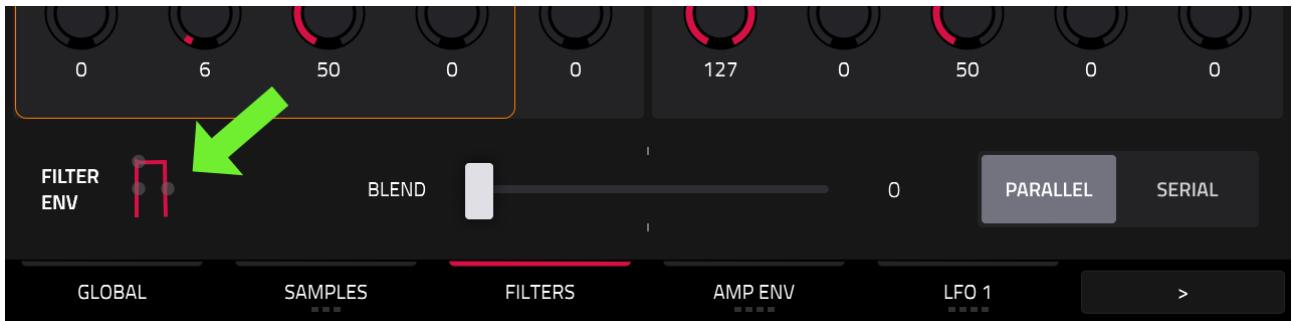


Don't forget you can tap on the red dot on the filter graph to change the cutoff and resonance together – just drag your finger around the touchscreen until you hear the sound you like.

Now set **KEYTRACK: 100**. This will subtly 'key track' the filter cutoff across the keyboard, gradually opening up the filter as you move towards the higher notes. Now set **ENV** to **127**



This will now route Filter 2 via the **Filter Envelope**. To view the filter envelope, tap on the **FILTER ENV** at the bottom left of the screen:



The filter envelope 'shapes' the filter over time, in a similar way to how the amp envelope shape 'volume' over time.

Set **SUSTAIN** to **0** – this sets the level of filtering applied to 0, effectively turning off the filter. Now increase **SUSTAIN** to **20** and you'll hear some subtle high pass filtering with a sudden drop when you release the pad – this is due to the **RELEASE: 0**. Instead set **RELEASE: 582ms** to create a smooth fade out of filter 2 upon release.



The **DECAY** controls how long the filter takes to drop down to the **SUSTAIN** level when holding down the pad. Try a **DECAY** of around **20ms** and press and hold the pad. Compare to a **DECAY** of **400ms** which lengthens the time it takes to reach the sustain level. Have a play with the settings – I quite liked **DECAY: 56.9** and **SUSTAIN: 35** – hear how, by utilising the filter envelope we've managed to control how the filter acts on our sound over time (rather than just applying a fixed filter value across the entire sound).

Tap the '**close**' icon in the top right of the envelope screen (the two inward pointing arrows) and set an **ENV** of around **80** to reduce the amount of filtered signal sent to the envelope, just to give a more subtle overall envelope shaping.

Finally, experiment with the **BLEND** to bring the two filters together. What's interesting is you have the velocity modulated low pass filter 1 acting together with a 'keytracked' high pass filter 2 shaped over time through an envelope - the combination gives an ever changing set of interacting timbres, especially when varying velocity and note length.

I settled on the following:

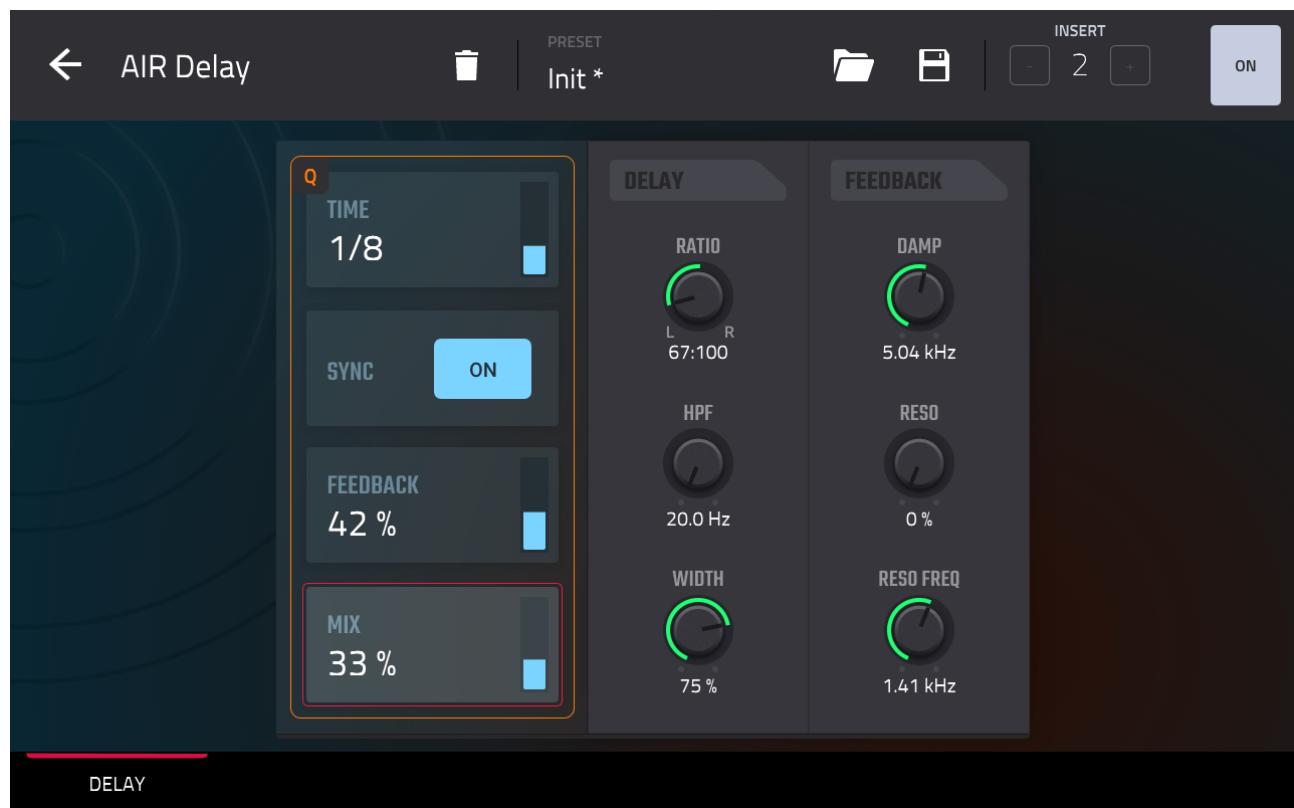


Notice that the two filters can be set as parallel or serial; in serial, filter 2 is applied directly to the output of filter 1. Here, you could, for example, use filter 1 to gradually remove some low end via a envelope with a long attack, and filter 2 could apply a band pass filter across the entire filter 1 output. In parallel, the filters are first blended

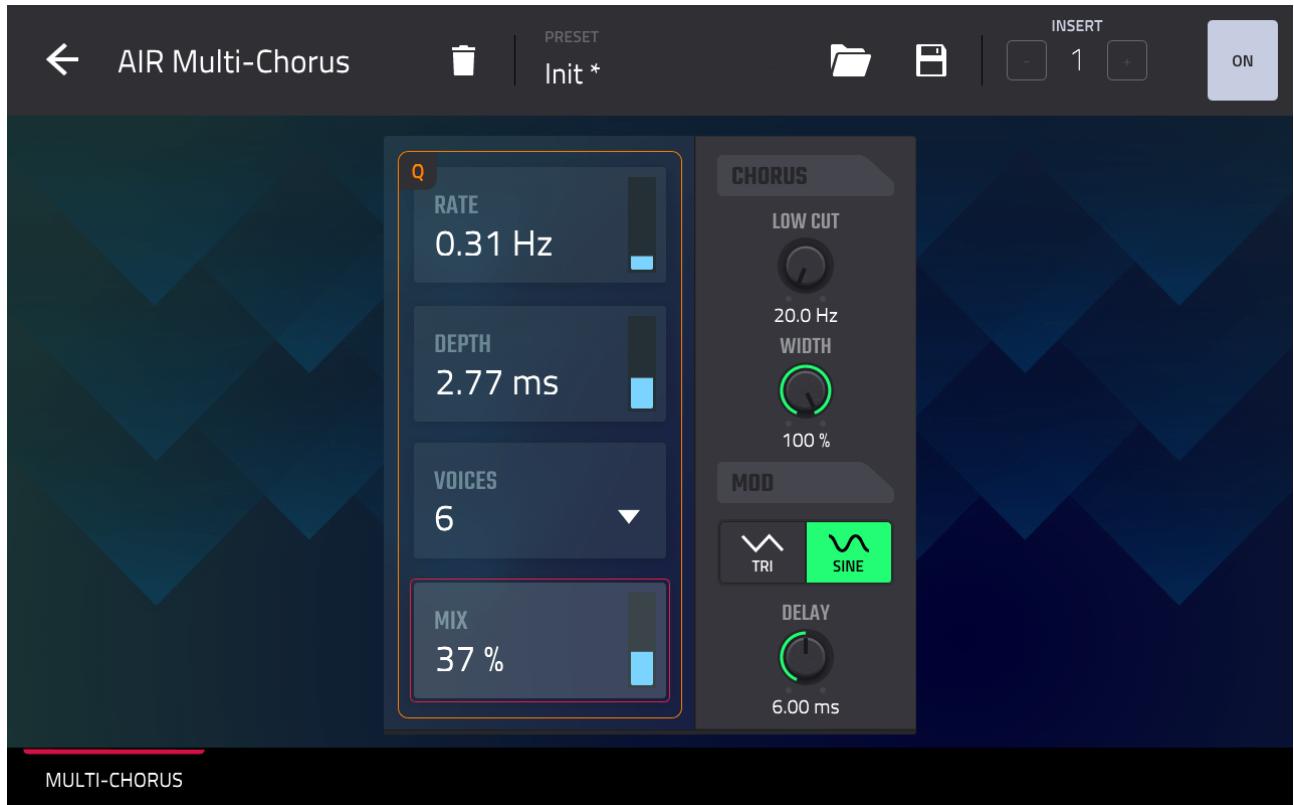
to act together on the entire audio signal – here, no filter gets the opportunity to 'act first'.

ADDING TRACK FX

Pad sounds love some chorus and delay, so head over to [**MAIN**] and in the **XL Channel Strip** for this current track, select the **FX** tab. Add an instance of '**Modulation > AIR Multi Chorus**' configured like the following for a nice subtle chorus to add some depth:



And then add an instance of '**Delay/Reverb > AIR Delay**':



Try the instrument now. Those little tweaks didn't take too long (you'll get quicker at them with a bit of practice) and it's completely transformed the instrument into something far more interesting and expressive.

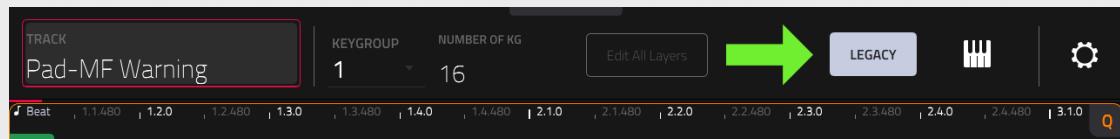
You can load my version, **Pad-MF Warning Pulsed.xty** from the **C04 > Instruments**' folder

'ADVANCED' KEYGROUPS VS LEGACY KEYGROUPS

You may have noticed the greyed out '**LEGACY**' button at the top of the TRACK EDIT screen. By default, all MPC3 keygroup instruments

created in MPC3 use the latest 'Advanced' keygroup functionality. This is the interface that I would generally recommend using when building keygroup instruments.

Just be aware that if you load a keygroup instrument made in MPC2 or the Akai Force, you will notice the **LEGACY** button gets enabled in **TRACK EDIT:**

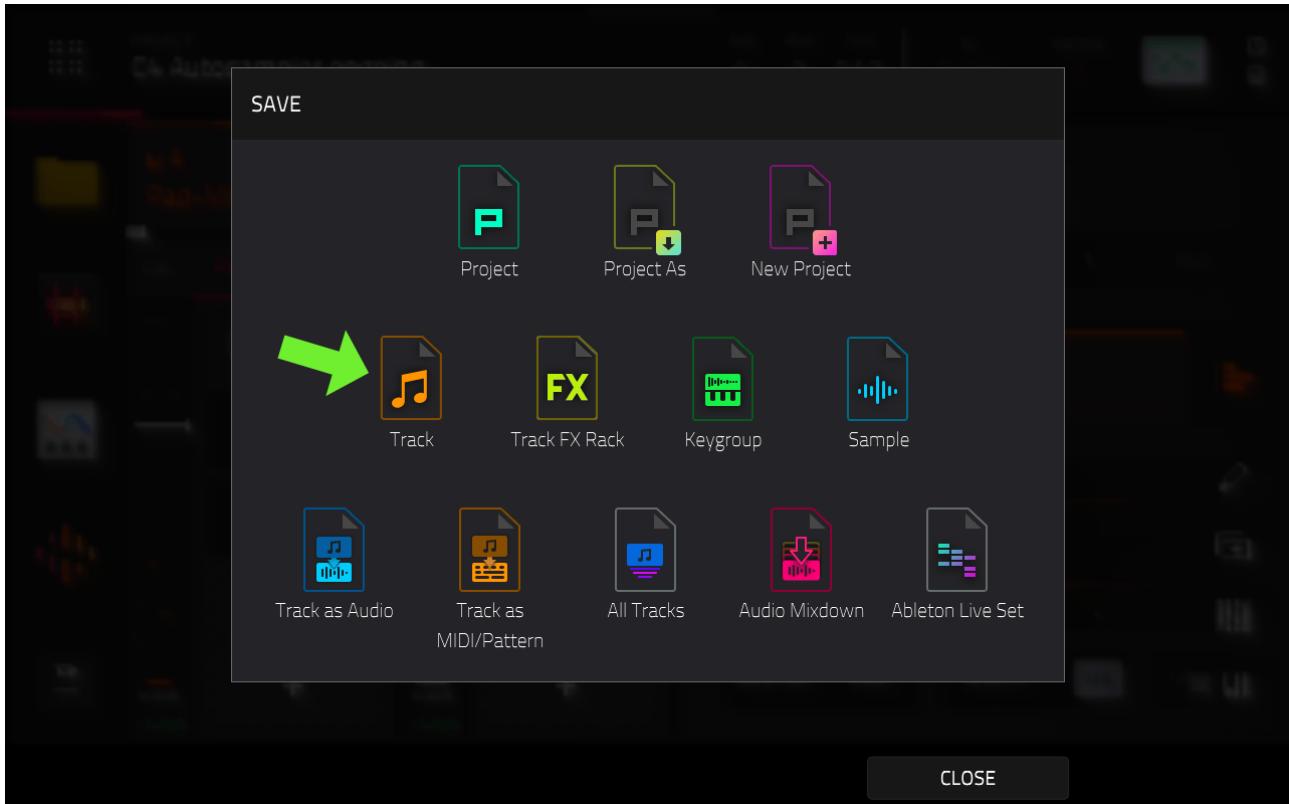


Legacy keygroups have different features and are structured in a slightly different way, but as long as you leave 'LEGACY' mode enabled, they will work exactly as the original sound designer intended.

SAVING YOUR AUTOSAMPLED INSTRUMENTS

Your instruments are all saved as tracks within your project, but if you'd like to build a separate library of your own instruments to re-use in other projects then you can easily save the currently selected track.

Go to '**MENU > SAVE > Track**' save your instrument as a 'track' file.



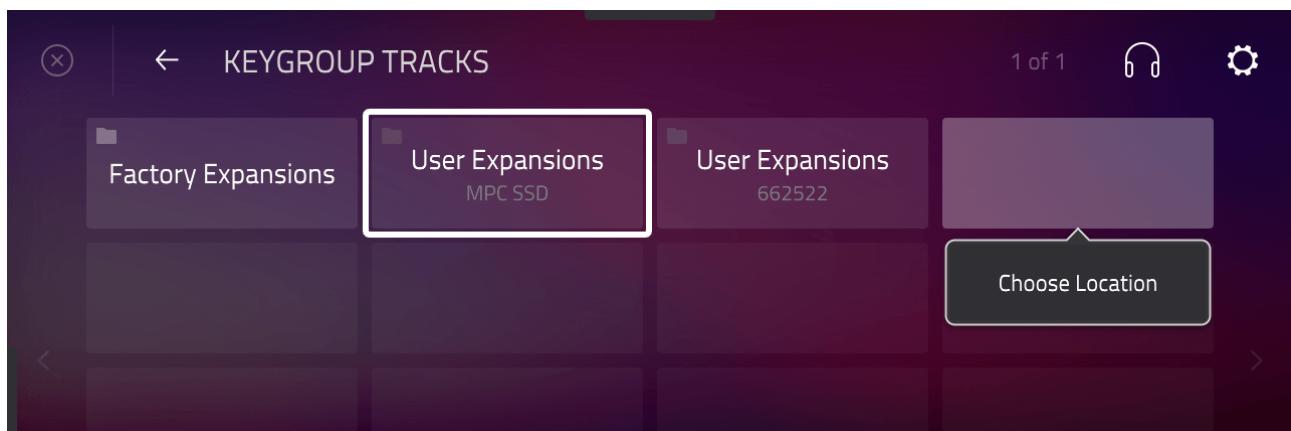
Track files are only compatible with MPC3 but will recreate the **entire track** exactly as it was when saved, including any MIDI events on the track and all other configurations such as FX, Q-LINK macros, MIDI assignments, colours, and so on. KEYGROUP track files have an extension **.xtx**.



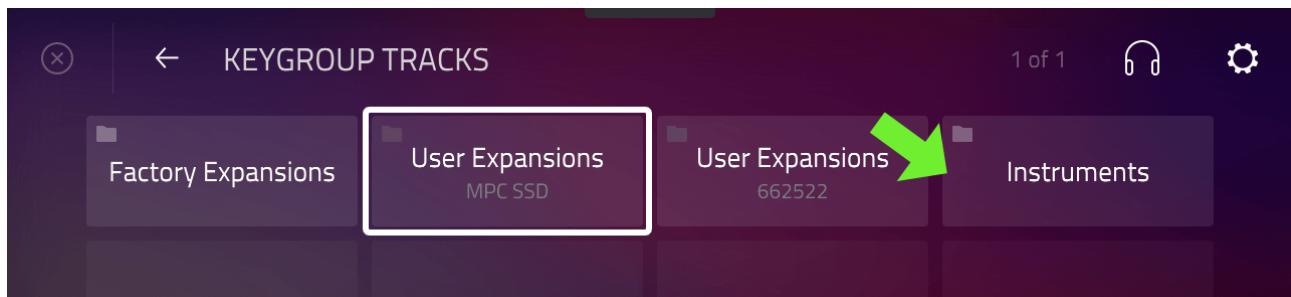
You can also use '**Save > Keygroup**', this will create an **.XPM** file which is the 'program' format used in the previous MPC2 firmware. An XPM file will not contain any MIDI data and does not support features like advanced macros, so I would generally stick to 'track' files.

Save all your instruments to a folder on one of your attached MPC disks, this way you can easily back up and distribute the instruments, for example **MPC Disk > Sound Library > Instruments**.

You can set the **Instruments** folder as a shortcut within the **SOUNDS Browser**. Go to **MENU > SOUNDS**, select **TRACK TYPE: Keygroup** and press and hold on one of the blank rectangles until the '**Choose Location**' pop up appears:

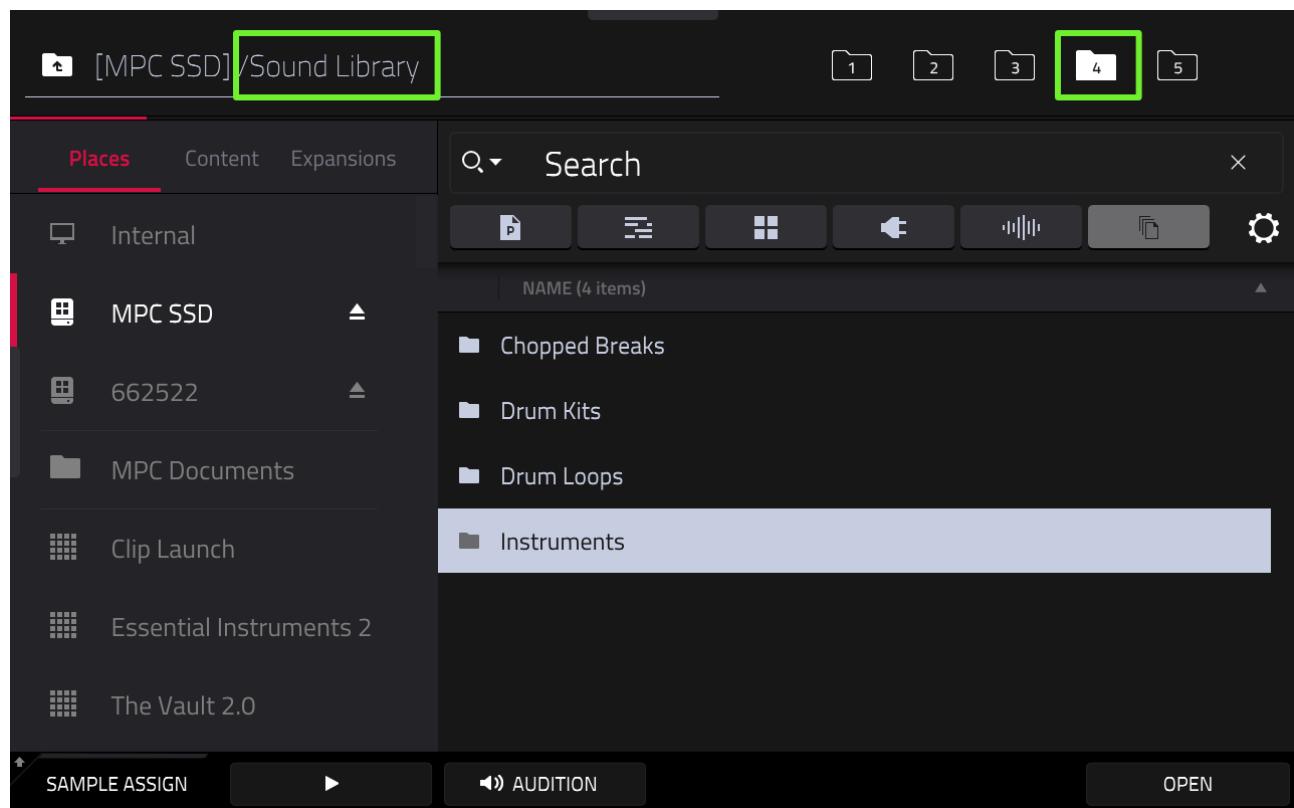


Tap on this and navigate to the location of your **Instruments** folder and hit **SELECT** – your instruments folder now appears as a shortcut in the Sounds browser:

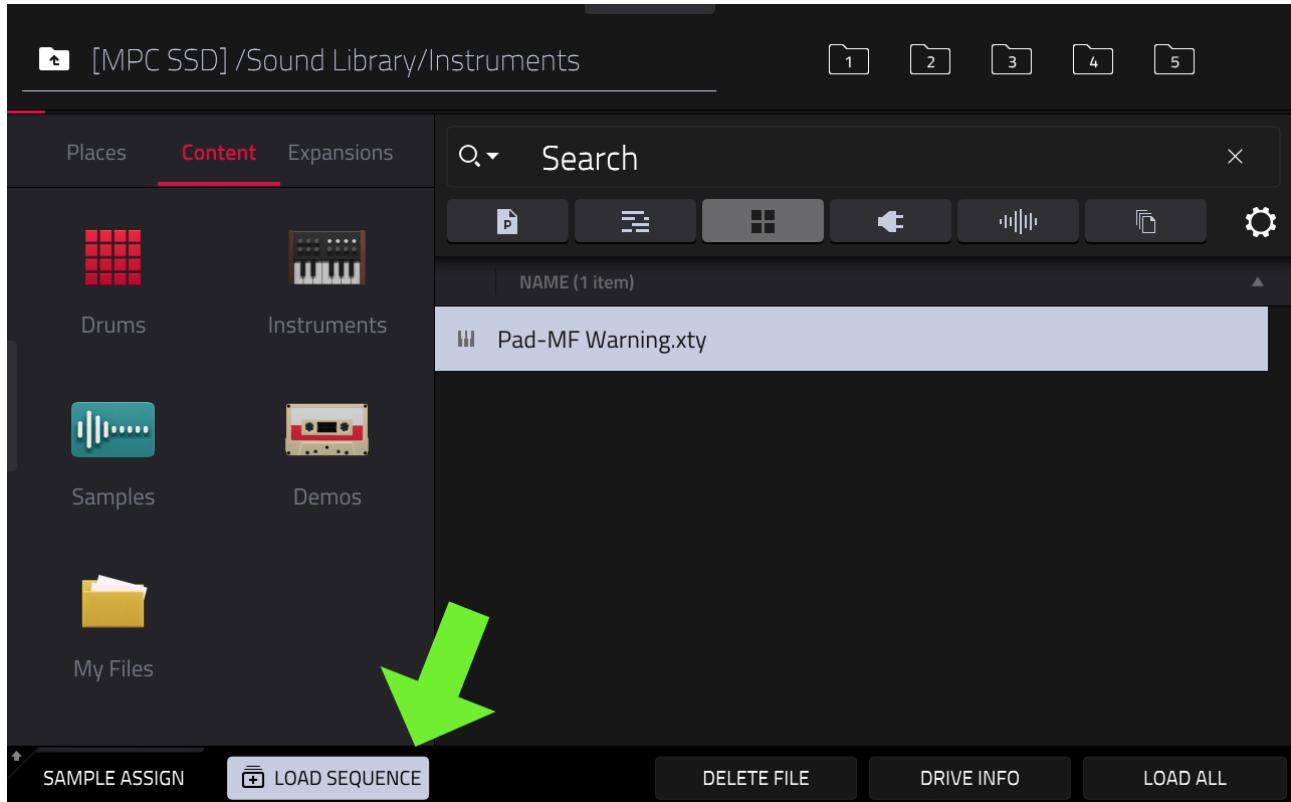


Tap on the folder shortcut to enter it, then tap on an instrument to load it to the current track.

In **Section A**, we set up file browser shortcuts by navigating to a folder in **BROWSER > Places**, holding down **[SHIFT]** and tapping on of the folder in the top tool bar - you could use a spare folder to set a shortcut to your Instruments folder. Alternatively, set a shortcut to your entire Sound Library folder, where you can have sub folders for all your favourite file types:



When loading a track file from the BROWSER you can choose to load it with or without any embedded MIDI data that it may contain. Hold down **[SHIFT]** to reveal the **LOAD SEQUENCES** button:



Toggle this on or off as required – I would recommend you leave it off and only enable it if you know you want to replace the existing MIDI events on a track. Also remember that when loading tracks you can use the **LOAD TO NEW TRACK** button to avoid overwriting the currently selected sequencer track!

SUSTAIN LOOPING SAMPLES

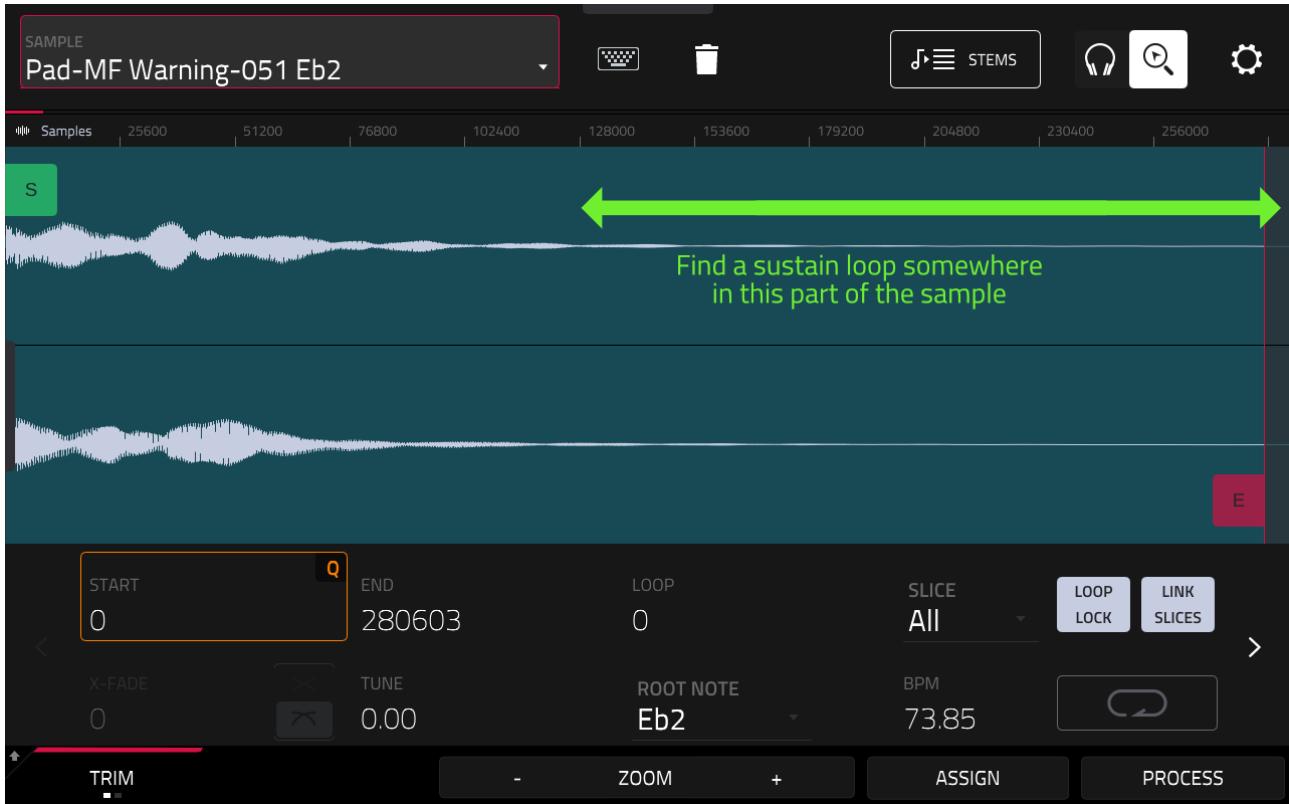
If you want to go the extra mile then you could try to 'sustain loop' your individual samples. Take a look at the waveform of any of the samples:

As you can see most of the action occurs in the first half of the sample, after that it's a fairly constant 'drone', which eventually stops simply because the sample itself ends. However the original synth patch just kept playing that drone for as long as the note was held down.

When we **sustain loop** a sample we allow the initial 'attack' portion of the sound to play normally, then when the note comes to the looped portion it stays there, looping continually until we release the note. When we release the note, the 'release' portion of the ADSR envelope kicks in and gives us a nice faded release.

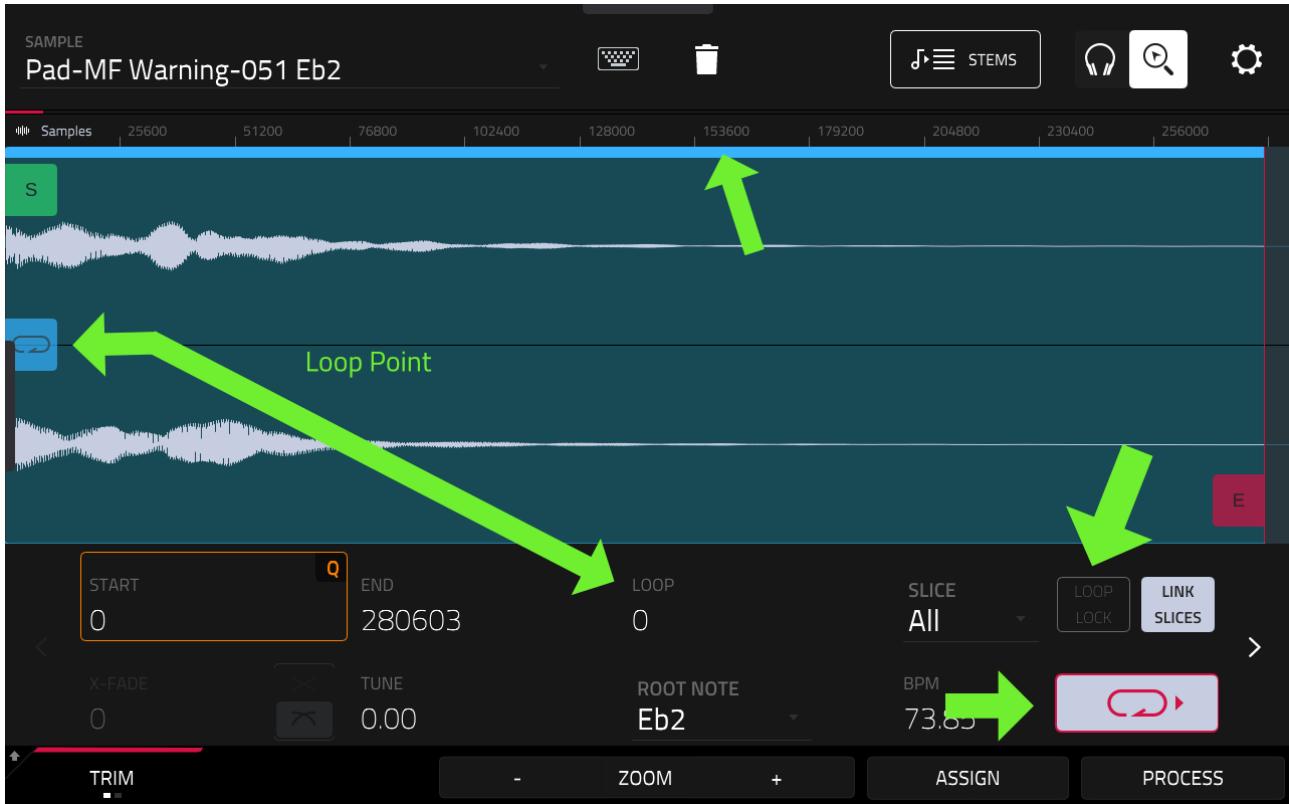
The disadvantage is sustain looping in an MPC can take a fair bit of time, it's a manual process and the tools available are fairly basic, but we do have some little cheats we can implement to speed things up.

Let's pick one of the samples, let's say **Pad-MF Warning-051 Eb2** - open this in **SAMPLE EDIT**:



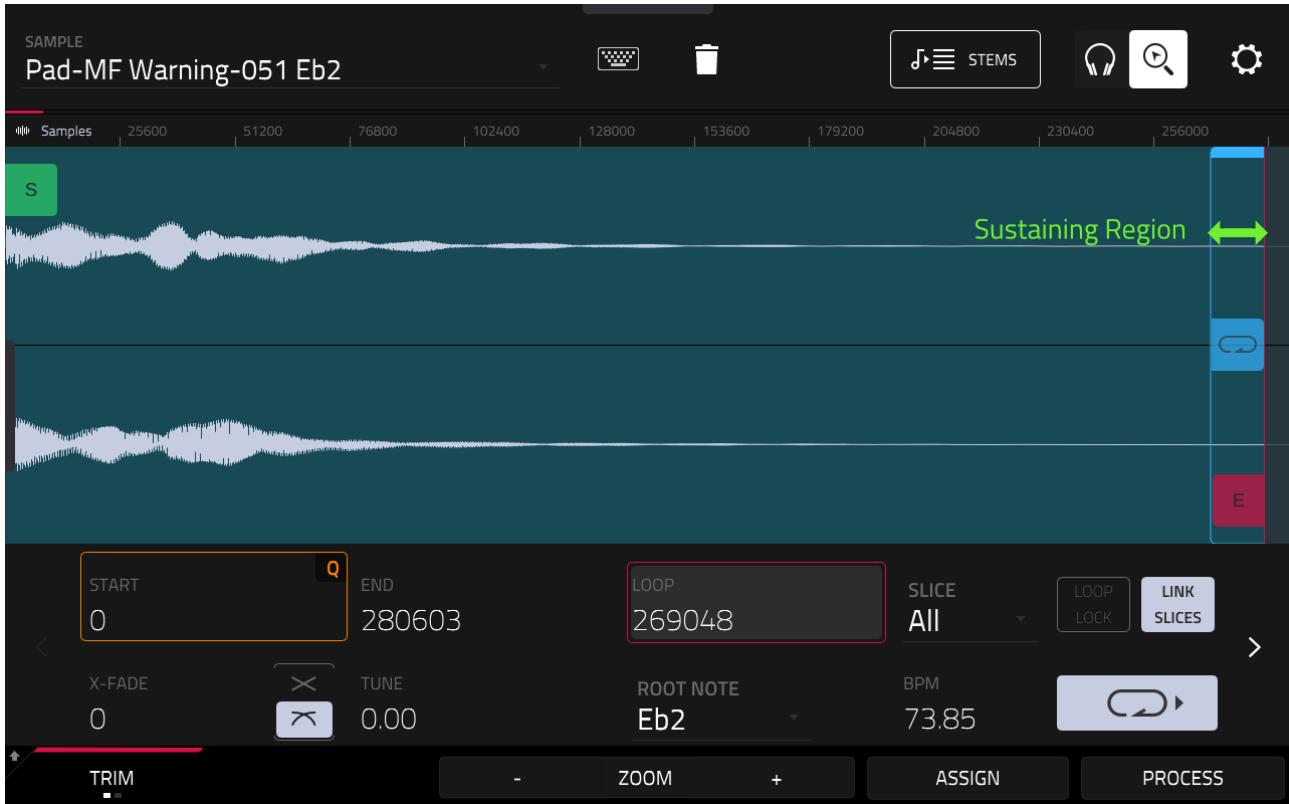
The key is to pick an area where the waveform is fairly consistent; ideally we want the volume and tone of the sound at the start of the loop to match the volume and tone at the end of the loop. The ideal region size can vary depending on the sample. Try something small-ish to start with and experiment from there. With some sounds, especially those with a bell like, sine wave tone (e.g. piano, Rhodes etc), a *tiny* region can work best.

To create a sustain loop we first have to set the sample itself as a loop, so tap on the loop button to set a 'forward' loop. Then tap on the **LOOP LOCK** button so it is **disabled**. At this point you should see the **LOOP point marker** appear:



When LOOP LOCK was enabled (the default setting for a sample), the LOOP point was 'locked' to the sample START point – they were one and the same. This is fine for a drum loop where the entire sample is looped from beginning to end, but in a sustain looped sample we need to control the loop 'start' point independently, as the loop region itself begins some time later in the sample.

Make sure **[SHIFT] > 0 SNAP** is enabled. Grab some headphones as this part of the sample is quiet! Experiment with the looping region until you start to find some usable options (adjust the edit points using any of the techniques we've covered previously). Try a **LOOP** of **269048** and an **END** point of **280603**:

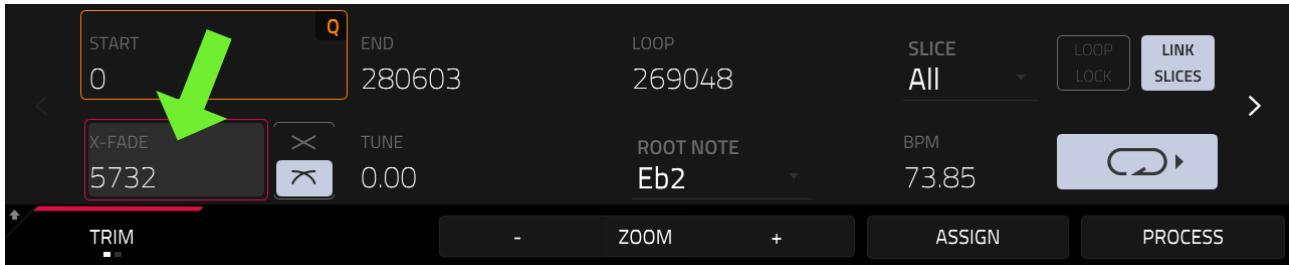


Notice how the END point of the sample also defines the end point of the sustain loop. You can preview the loop itself using pad [A13], but you can also press and hold pad [A11] to hear the whole sample and sustain region play through.



*You can adjust the **LOOP** point using the Q-LINKS, just like we do with START and END point – this time select [**Q-LINK BANK 3**].*

Now as you can hear, this sustain loop has a little click, so head over to the **X-fADE** parameter and set to **5732**.



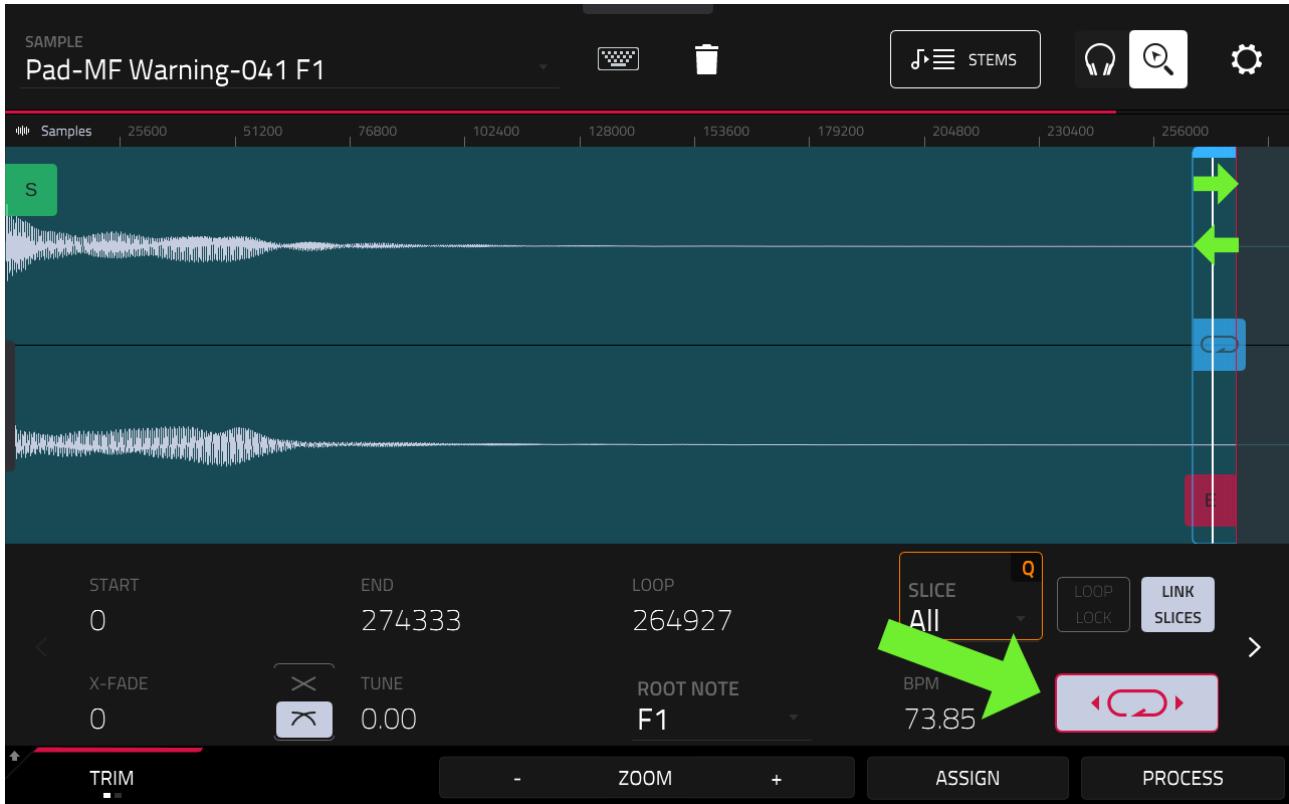
This adds a 'crossfade' between the loop end and loop start to try equalising both the volume and tone at either end of the the loop. Sounds okay. There's two types of crossfade, the default is **logarithmic**, the top option is **linear**, these create the fade in a slightly different way but in all honesty I can't hear any difference here. Notice that if you set the crossfade too high it starts to 'pump', so try to find a value that produces the smoothest sounding loop.

Preview the entire sustain looped sample by holding down pad [A11].

ALTERNATING LOOPS

Another quick cheat for finding sustain loops is to switch to using 'alternating loops'. Select **Pad-MF Warning-041 F1** and see **LOOP: 264927** and **END: 274333**.

Hit pad [A16]; as a forward loop this has a strong pulsating click. Now press [STOP] or pad [A16] again to stop the loop preview, and then tap the **LOOP** button again:

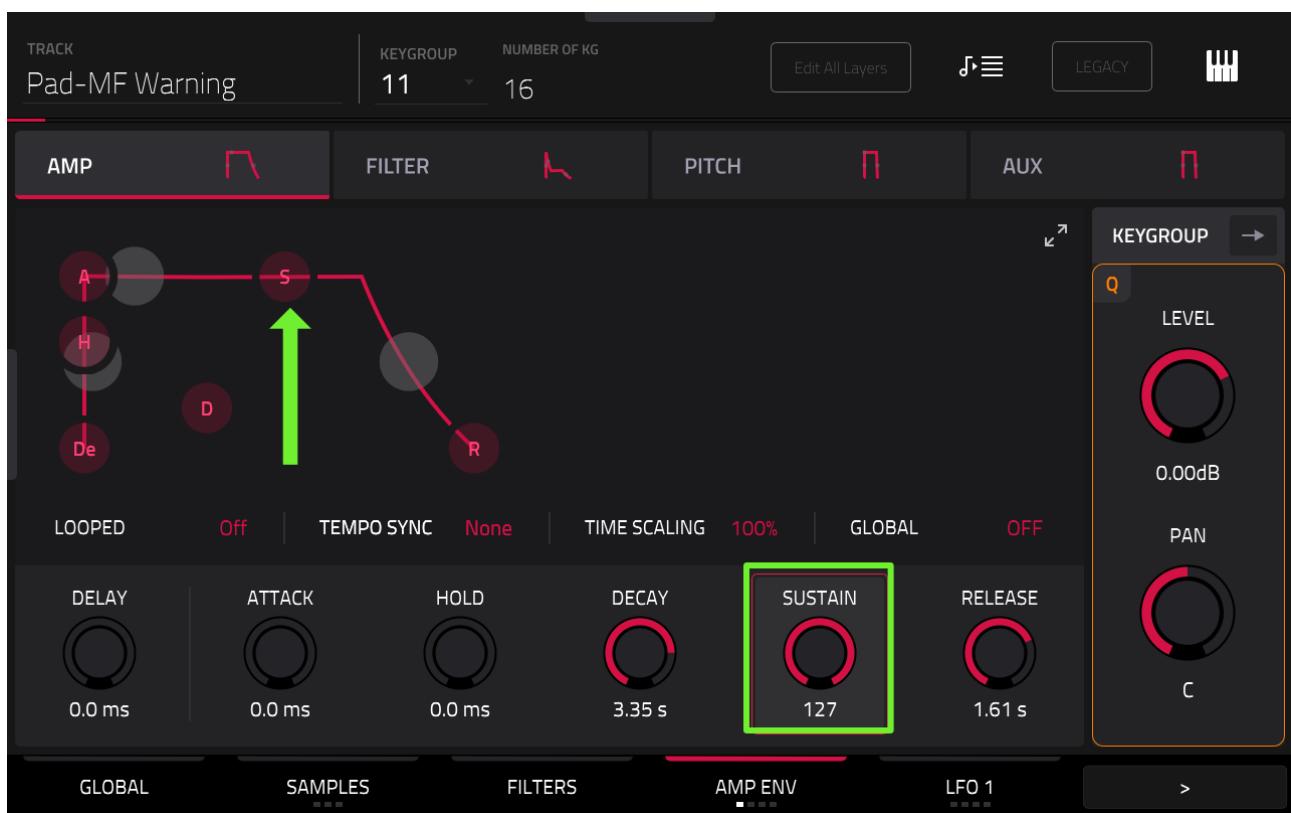


Notice the arrow points both ways. This is an **alternating loop**; here the sample plays from the LOOP to END point as normal, but when it reaches the END point it does not jump directly back to the LOOP point – instead it starts playing *in reverse* from the END point to the LOOP point, and then plays forwards from LOOP to END again, and so on, in a 'ping pong' manner, back and forth.

This alternating action avoids any sudden differences in tone, making a smooth looping point each time. The disadvantage is that it can sometimes sound weird, simply because the sample is playing in reverse, although in many cases you just can't hear this (as is the case now).

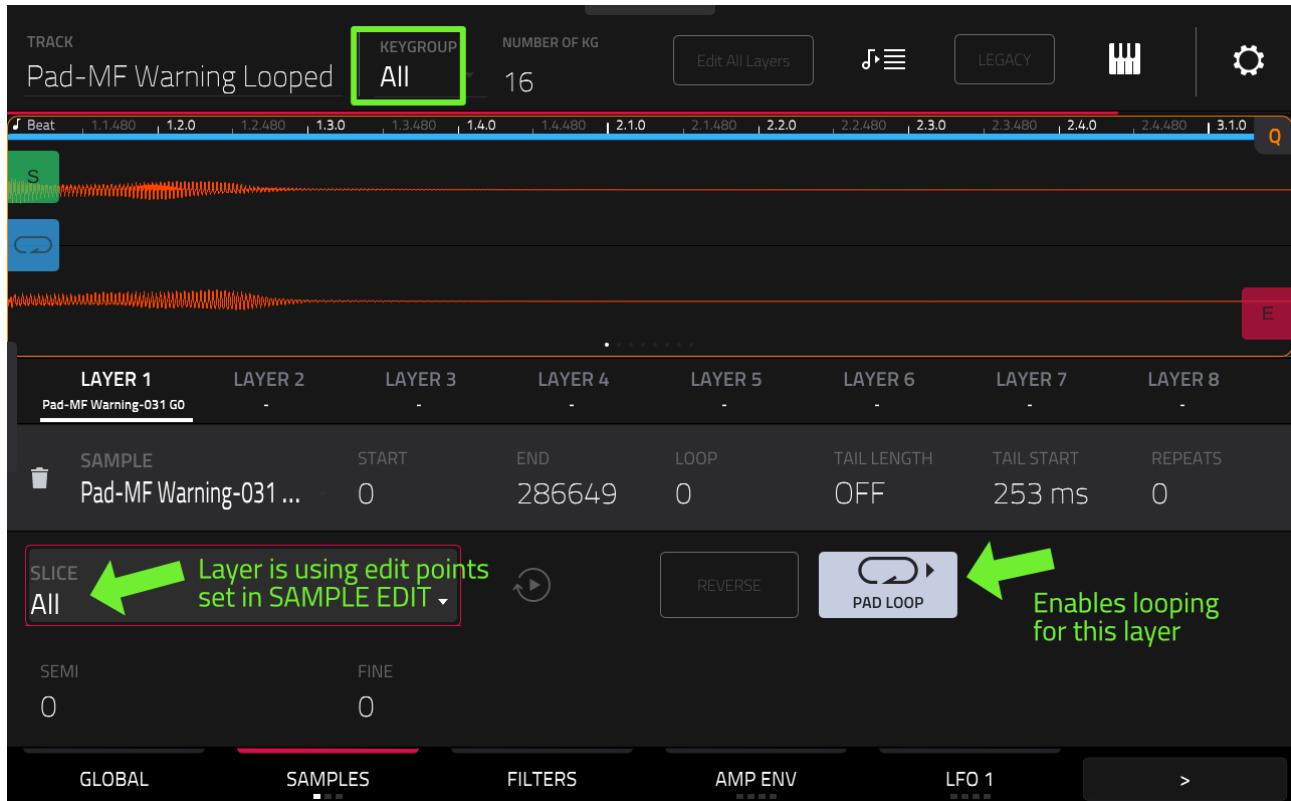
CONFIGURING SUSTAIN LOOPS IN AN INSTRUMENT

So how do we use these sustain looped samples in our instrument? Head to **TRACK EDIT > AMP ENV**. Remember how we previously set the amp envelope for the entire instrument to **SUSTAIN: 0**? Well, just set this back to the maximum **SUSTAIN** of **127**. This will ensure the sample plays at full volume while it is sustaining (rather than eventually decaying down to 0).



Now go to **TRACK EDIT > SAMPLES**, select 'ALL' keygroups in the top menu bar, so all the changes we make now will affect all keygroups equally. Hit the **GEAR** icon (top right) and make sure you have **LOOP LOCK: OFF**.

Now enable **PAD LOOP** on **LAYER 1** and set **SLICE: ALL**.



With Slice set to 'ALL' the layers will now use the latest edit points that we set in SAMPLE EDIT (when set to SLICE: PAD they will just ignore the newly set loop points and continue to use the existing defined 'pad layer' start and end points).

Tap in the top toolbar and select **KEYGROUP: 11**.



Select [**PAD BANK C**] and hold down pad [**C06**] to allow our sustain loop to play. Observe the waveform sustaining the looped portion - this will continue sustaining at the maximum volume level (due to setting the amp envelope sustain to the max 127). Notice that when you release the pad, the loop actually continues playing during the 'release' period as well (until the release portion of the envelope is complete).

Head back to **SAMPLE EDIT** and try sustain looping the remaining samples. You can load up my version of the sustain looped instrument from the chapter '**C04 > Instruments**' folder, **Pad-MF Warning Looped.xty**.

AUTOSAMPLING INTERNAL PLUGINS?

As I mentioned at the start of this chapter, Autosampler can also 'clone' any synth plugin that is already installed within your MPC (e.g. Hype, Odyssey, Mellotron etc) or any of Akai's premium plugins (Jura, Mini D, Sub Factory etc). You may have auto sampled a plugin as part of this tutorial purely because you didn't have an external synth to hand, but there are other good reasons to autosample the internal plugins.

Firstly it can free up a plugin slot, so if you're already maxed out at 8 plugin tracks, 'converting' one of the tracks to a keygroup track might be worth the extra work. Additionally by converting an internal plugin patch to a keygroup you can further customise the plugin sound with the powerful keygroup editing features (including adding more sample layers to create hybrid instrument).

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C05: MULTISAMPLING 'NON MIDI' INSTRUMENTS

In this tutorial we'll record some notes from a 'non-MIDI' instrument and build a custom keygroup instrument featuring 'round robins' for extra realism.

TOPICS COVERED IN THIS CHAPTER

- ✓ Recording multisamples from traditional (non-MIDI) instruments
- ✓ Building keygroup instruments from multisamples
- ✓ Advanced keygroup features such as controllable vibrato, round robins and string release noises
- ✓ Advanced Q-LINK macros

RECORDING TRADITIONAL ('NON-MIDI') INSTRUMENTS

Not all instruments support MIDI, for example any acoustic instrument, guitars, drums, percussion, violins, trumpets etc, so these instruments will not support any kind of 'midi' based operation in the MPC (autosampler,

MIDI tracks etc). It's still possible to create playable emulations of these instruments, but we just can't 'autosample' them.

In Section B we mapped a single vinyl bass sample across our pads using the 'pad to keygroup' function. One issue with using just a single sample is the quality can suffer from excessive tuning up and down the keyboard scale. To improve the quality of our sampled instruments we can record multiple samples from across the note range of the instrument - we call these 'multisamples' and the recording process is normally referred to as **multisampling**.

The more multisamples we record, the more accurate the recreation can be. We've already seen this concept in action in our Autosampling tutorial where we created instruments built from multiple individual keygroups, with each keygroup containing a single sample tuned across a specific note range.

In this chapter I'll initially explain how to 'multisample' an acoustic or electric instrument; we'll then build an emulation of the original instrument from the recorded samples. I'm using a bass guitar in my examples, but you can use these instructions for recording any non-MIDI instrument.

THE MULTISAMPLING PROCESS

The basic multisample process itself is as follows:

1. Connect the audio output your instrument to the MPC, either directly or through a microphone or amp
2. Record yourself playing various notes on the instrument

3. Extract individual samples from the recordings and map them to a keygroup instrument

The method you use to record will depend on the type of instrument being recorded, which MPC unit you have, and the quality of results you want to achieve. Please refer to [Appendix B](#) where I look at various audio connection configurations.

You should consider whether you wish to add any hardware FX, such as guitar pedals and compressors, but as discussed previously in the course, I normally prefer to only add FX if its introducing a desirable effect that I cannot add at a later date, such as a warm analog distortion.

Whichever instrument you record, don't forget to spend plenty of time setting up the instrument to get the exact sound you need; for example when recording a guitar make sure the correct pickups are selected, your tone controls are dialled in, strings are tuned and amp controls tweaked to your exact requirements.

At this point I will assume you have connected an instrument to your MPC audio inputs and are ready to record.

CHOOSING THE RECORDING METHOD

There's two common recording methods employed when creating multisamples in an MPC:

1. record each individual note one at a time

2. record many successive notes in a single recording session; the resulting recording is then converted into the individual notes at a later date.

I personally prefer the second option as it means we can quickly record our instrument and worry about the editing process at a later date, it's significantly quicker in my experience. If you go for option 2 you can use the **SAMPLER** or record directly to an **AUDIO track**, and in most cases it mostly comes down to personal preference.

It's not possible to emulate all the nuances of an acoustic instrument in the MPC as it offers a fairly simple set of multisampling features and ultimately has very limited by memory and CPU. That said, it is possible to create something quite realistic even within these limitations.

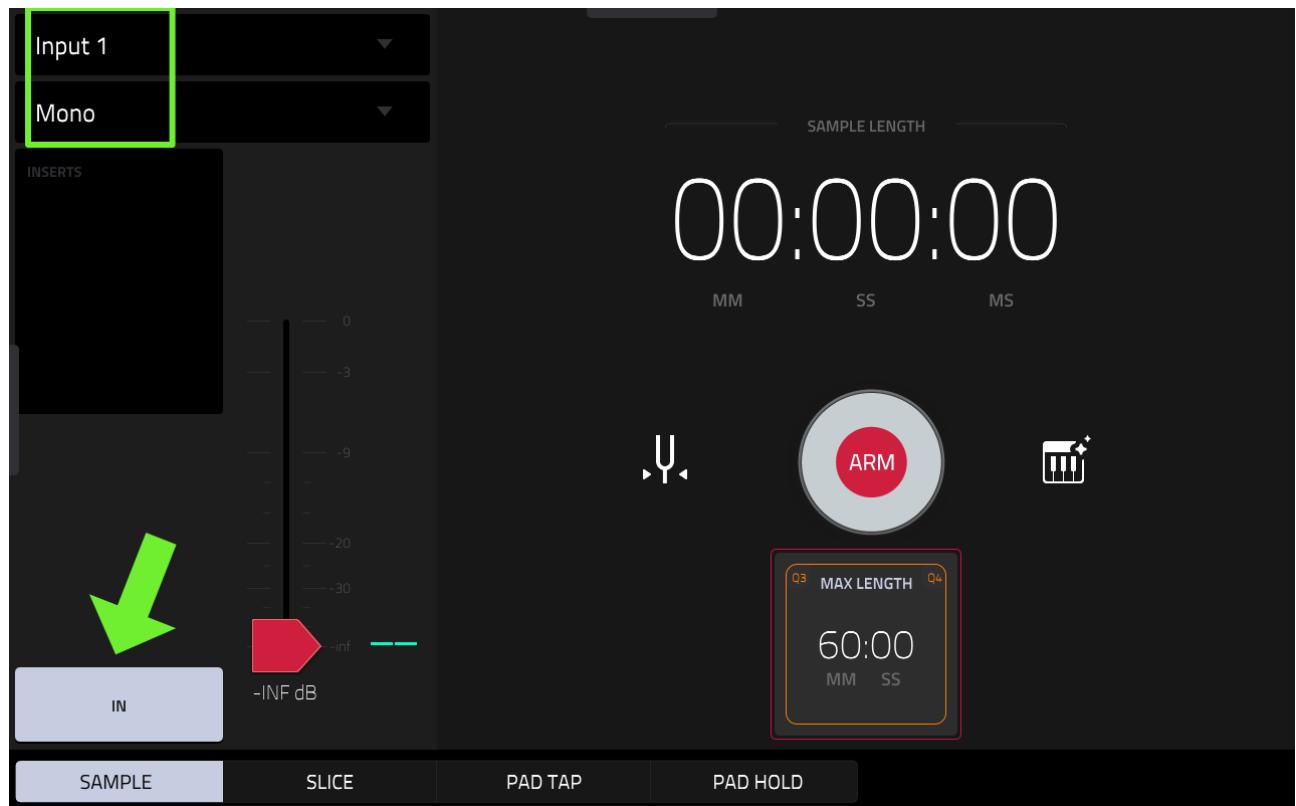
We're going to record every third note on a bass guitar from **E1 to Db3** at a single velocity (medium-hard), but we'll record two 'takes' of each note so we can have enough material to incorporate some 'round robins' to emulate the way each note sounds a little different each time it's played.

CONFIGURING THE SAMPLER

Often when making a new multisampled instrument, one that is likely to involve lots of samples and editing, I tend to prefer working within a separate, empty project. And after building the instrument I can export it for safe keeping to my sample library, ready for use within any project. So go to **MENU > NEW PROJECT** to start from a clean slate.

Go to **[MENU] > SAMPLER**. In the top left of the screen, configure the input section to match the input you connected your instrument to; in my

example of a bass guitar, this is going to be a single cable either from an amp or directly from the guitar itself, so we would go to **Input 1**, and the output file type should be set as '**Mono**'.



Set **MONITOR: IN** so you can listen to the output of your instrument through the MPC outputs (i.e. after it's passed through the entire MPC recording chain). In this case you might want to mute the studio speakers and monitor using headphones connected to the MPC headphone socket, especially if you are recording with a microphone; if your MPC audio is heard on your studio speakers the microphone will pick up this signal and this will not only ruin your recording but will also likely create a nasty feedback loop.

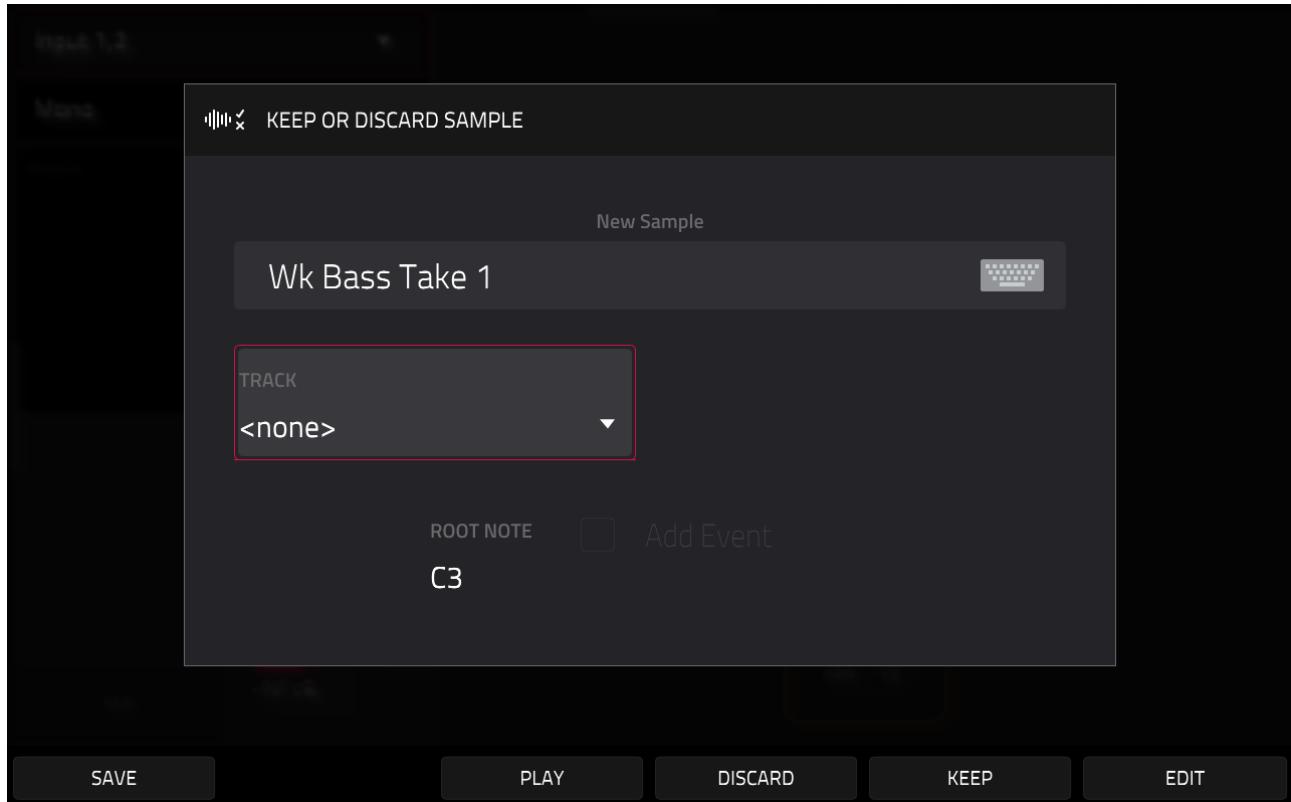
Alternatively set **MONITOR: OFF** to disable monitoring within the MPC. In this case you will need to monitor your instrument *before* it reaches your MPC. If you are going via a guitar amp you can listen to the amp speaker itself or attach headphones to the amp.

Play some notes on your instrument and adjust the **REC GAIN** dial on your MPC. Leave loads of headroom, maybe as much as **-18dB** on average with normal peaks at around **-12dB**, you really don't need to record remotely 'hot', especially if you have configured **PREFERENCES > AUDIO/EXPORT** to record in **24 bit**. Leaving a lot of headroom like this will also mean there's no need to insert compressor or limiter into the recording chain.

You can auto-start recording by setting a suitable **THRESHOLD** and pressing **ARM** in which case the MPC will begin recording as soon as you start playing. The problem with threshold recording an instrument like a guitar is that it is easy to accidentally trigger the recording simply because guitars are continually picking up bumps and loud squeaks, many of which will exceed the threshold level. But ultimately it's not a big problem as we're going to be editing down this audio at a later date.

Alternatively, just leave the **THRESHOLD** at **-INF** and press **ARM** to begin recording immediately.

Once you begin the recording session, start playing the notes on your instrument using the playing style you decided on, e.g. finger pluck or picking with a plectrum. Once you've recorded every note required (in my example, **E0 to A2**, press **[STOP]** and give your recording a name, for example '**Wk Bass Take 1**:



Don't assign it to a track, just press **KEEP**. Now record your second take – this one will be auto-named '**Warwick Bass Take 2**'. Record more takes if you wish, as no doubt there will be some notes that perhaps don't 'make the grade' when you listen back.

RECORDING TO AUDIO TRACKS

If you prefer to record to an audio track, it's a similar workflow. Set your sequence **LOOP: OFF** so you can record for as long as you need. Give the audio track the name '**Wk Bass**' and configure the audio track as you would when recording a synth (as described in chapter C03).

Set **INPUT** to match the MPC input that you connected your guitar output to (e.g. Input 1). Now set **MONITOR: AUTO**; you will only hear the guitar through your MPC when this audio track is set to **REC ARM** (for microphone recordings, remember to monitor your MPC audio via headphones, as per the SAMPLER instructions).

Remember unlike the SAMPLER, any insert FX added to an audio track are only applied 'post' recording, so adding a limiter here will not help avoid clipping, so it's best to set your (REC VOL) dial to you have plenty of headroom (aim for at least **-12dB** at peak levels).

Make sure **REC ARM** is enabled and hit [**REC**] and [**PLAY START**] to begin recording your bass notes. Hit [**STOP**] when recording is complete. If you make a mistake, just carry on recording, we'll deal with that later!

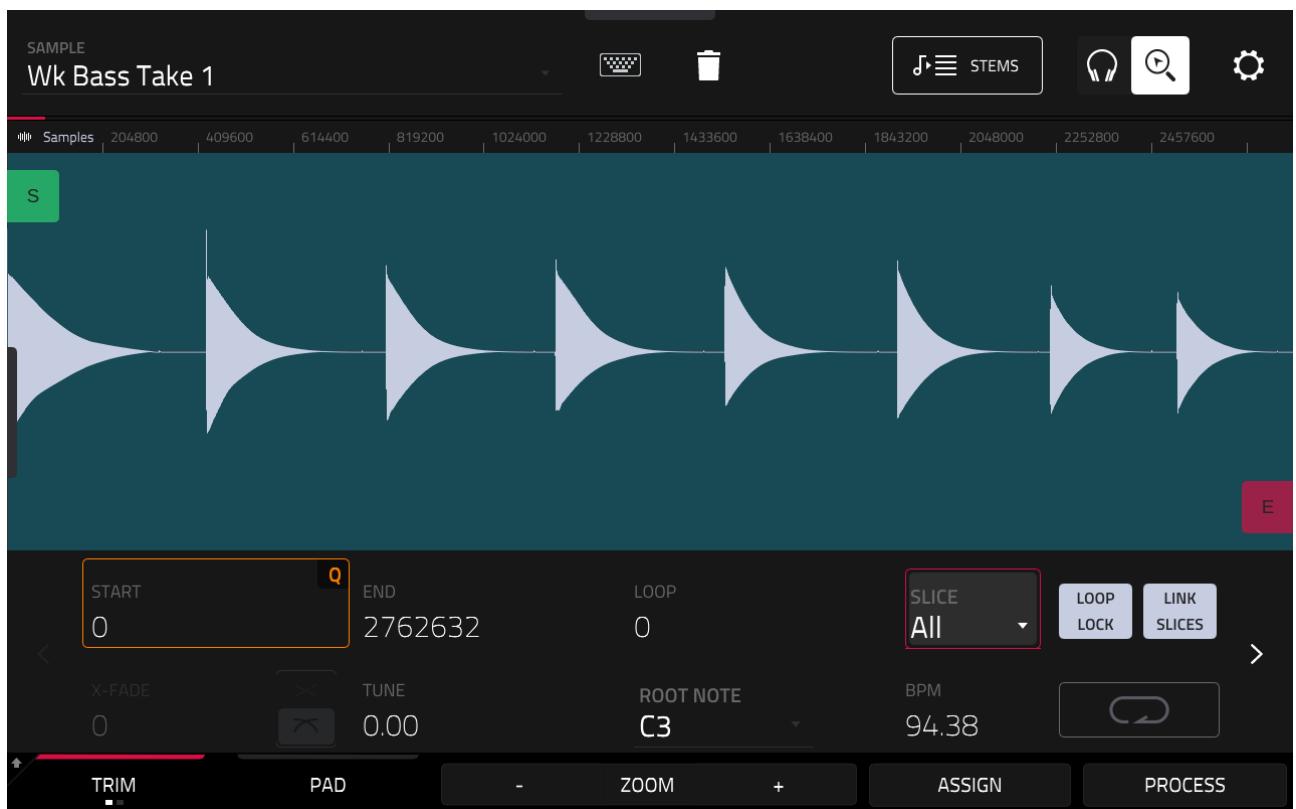
After recording go to [**SAMPLE EDIT**] and your sample will be named after your audio track, e.g. **Wk Bass_Rec1**; hit the keyboard icon and rename to '**Wk Bass Take 1**'.

EDITING YOUR MULTISAMPLED RECORDINGS

Whichever method you go for you'll end up with a long audio sample containing a bunch of individual notes. You'll also no doubt have some erroneous noises and maybe some mistakes (e.g. a note that you mis-hit and then immediately re-recorded).

Let's use a practical example of a recording session I made previously. Here I recorded with a **note stride** of **3** (every third note, e.g. E1, G1, Bb1, Db1 and so on).

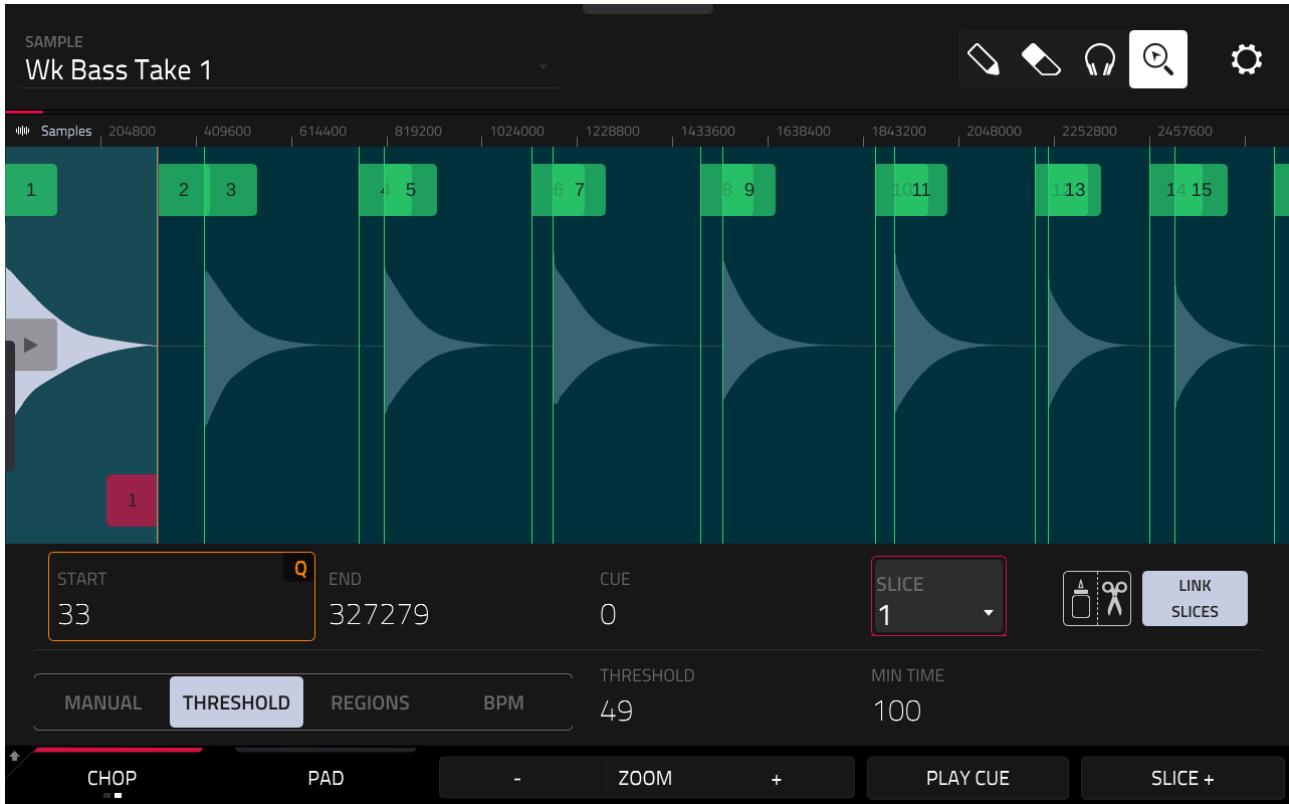
Go to the [BROWSER] and from the **C05** folder, single tap the audio file '**Wk Bass Take 1**' and **LOAD TO POOL**. Head over to [SAMPLE EDIT] and select the sample:



Hit pad [**A01**] to preview and you'll hear 8 bass notes with a little bit of string release noise at the end of each note. The easiest way to create a set of usable multisamples from this recording is to use threshold chopping (as per chapter C02).

Hold down [**SHIFT**] and ensure **0 SNAP** is engaged. Go to [**CHOP**] and hit **THRESHOLD**. Adjust your slices so all notes and noises have their own region - I found a **THRESHOLD** of **49** picked up everything:

C05: MULTISAMPLING NON MIDI INSTRUMENTS

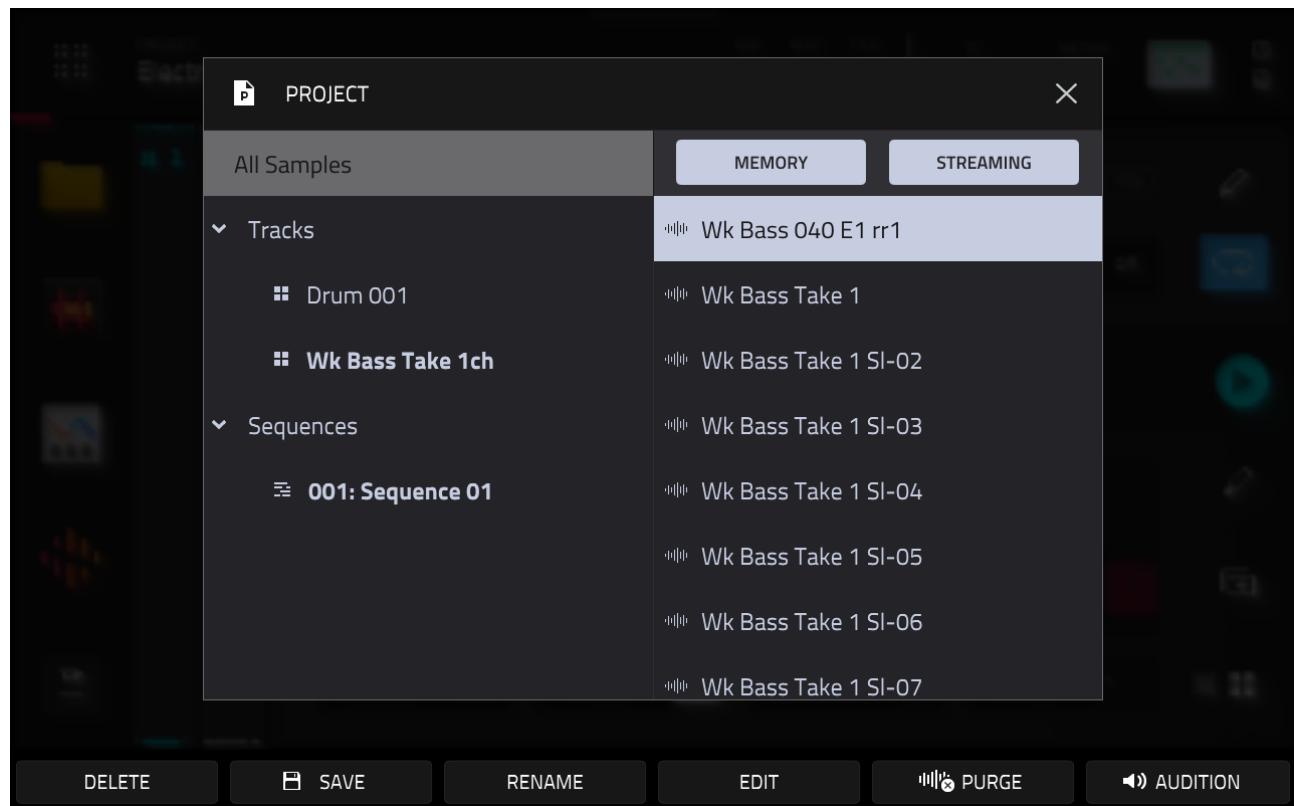


Hold down [SHIFT] > CONVERT and select 'Create New Samples', check 'Crop Samples' and uncheck 'Create New Track'. Hit DO IT and return to TRIM.

You'll now have a bunch of extracted samples. Each sample has been auto-named with its slice number, for example '**Wk Bass Take 1 SI-1**'. To help with the keygroup assignments, I'd recommend renaming with the pitch of each note in the name.

There's eight notes; **E1** (MIDI note 40), **G1** (43), **Bb1** (46), **Db2** (51), **E2** (52), **G2** (55), **Bb2** (58), **Db3** (61). And in between are the release noise samples for each note (8 noise samples in total).

Tap on the sample name in the top left of the TRIM screen and scroll through with your (DATA WHEEL) or [+] button – you can use the **keyboard icon** to rename. Alternatively, go to [**MENU**] > **PROJECT**:



If you have **AUDITION** set to **AUTO**, you can tap the first sample in the list and turn the (DATA WHEEL) to preview each one in turn. Hit **RENAME** to change the sample name.



If you want to take a look at the waveform of any sample in the PROJECT screen, just double tap the file name and you'll be taken back to SAMPLE EDIT.

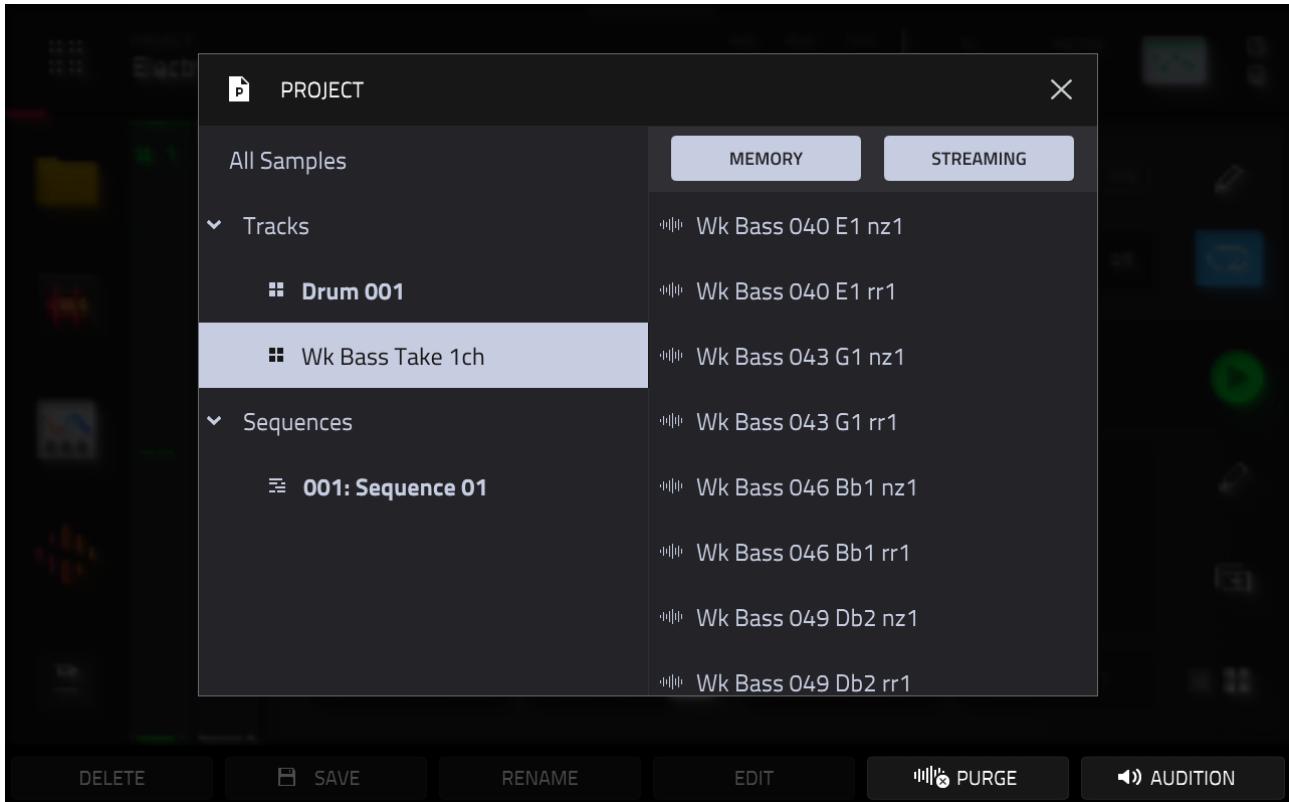
I'd suggest setting a pitch that correlates to the pitch you'll be using when configuring your keygroup instrument. So the low E note on a bass guitar is E1, so use the name **Wk Bass E1**. Even better is to put the MIDI note number before the pitch, this ensures the samples are always listed in pitch order, i.e. **Wk Bass 040 E1**. In KEYGROUP screens, the MPC uses C# rather than Db, so for muscle memory purposes, I'll be using C# in my file names, but Db is also fine (the MPC is inconsistent here, as it uses Db in Autosampled instruments, and also Gb rather than F# in KEYGROUP pages).

And as we intend having multiple 'round robins' for each note, I would also add 'rr1' to the sample name; **Wk Bass 040 E1 rr1**.



*Don't forget that you can speed up typing by attaching a standard USB computer keyboard to a spare USB port on your MPC (unfortunately copy and paste is not supported!). Also if your MPC has bluetooth support, you'll find many bluetooth keyboards also work. Go to **PREFERENCES > BLUETOOTH** to set them up.*

With string noises, keep each noise associated with the note it was released from, but just add something like 'nz1' on the end - **Wk Bass 040 E1 nz1**

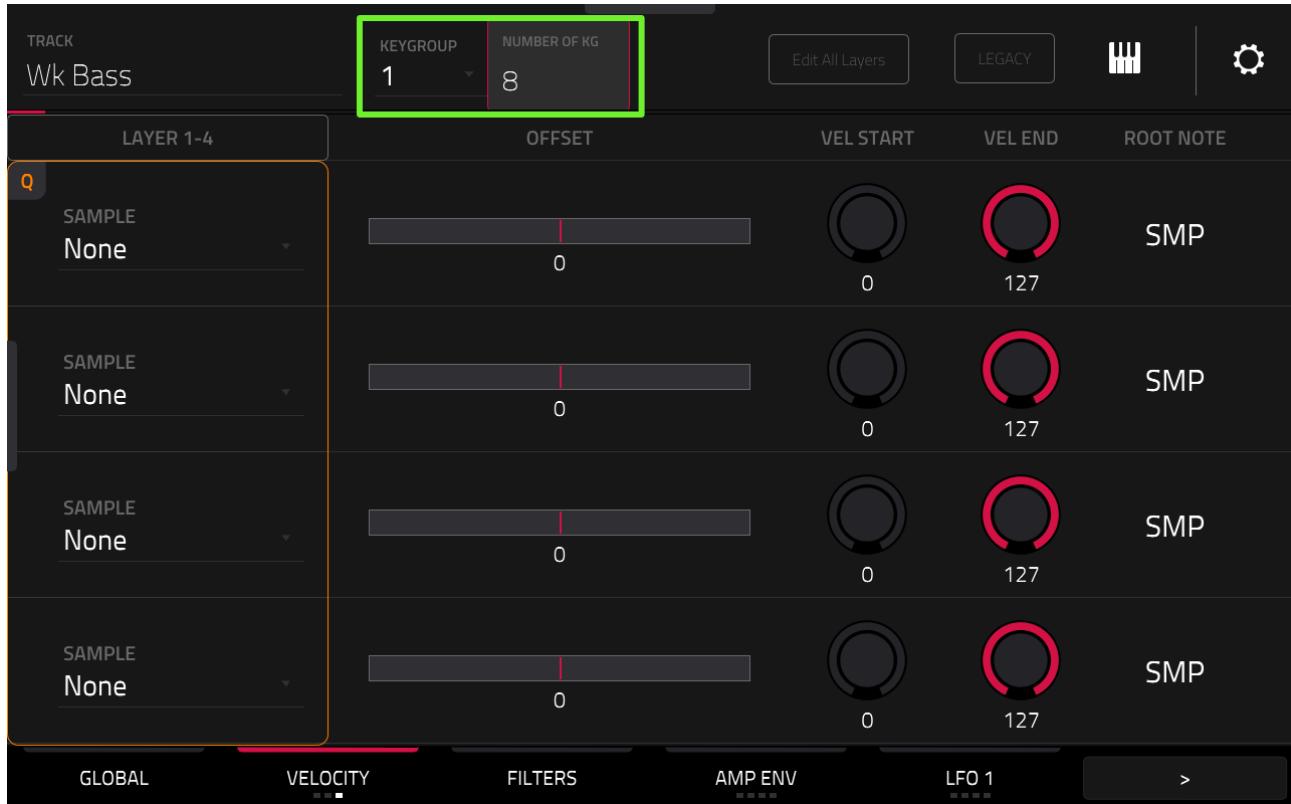


You can load up my project file **Electric Bass Multis.xpj** – this will load an empty project with all the renamed samples already sitting in memory. There's a total of 8 note samples plus 8 string release samples.

BUILDING THE KEYGROUP INSTRUMENT

Go to [**MAIN**], tap and hold on the existing track icon and set track 1 as a **KEYGROUP** type track and rename it **Wk Bass**. Go to [**TRACK EDIT**] > **VELOCITY** (that's the third '**SAMPLES**' screen):

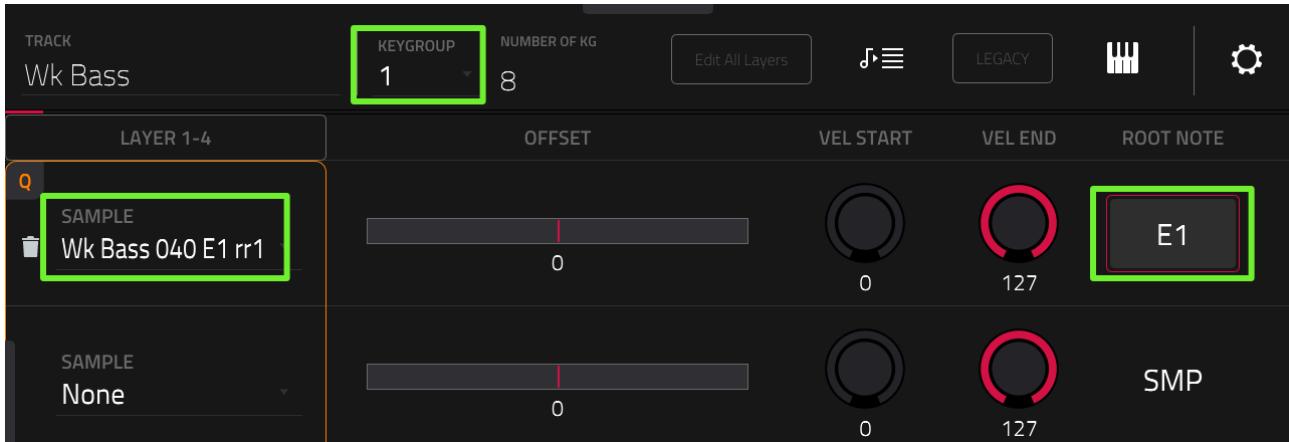
C05: MULTISAMPLING NON MIDI INSTRUMENTS



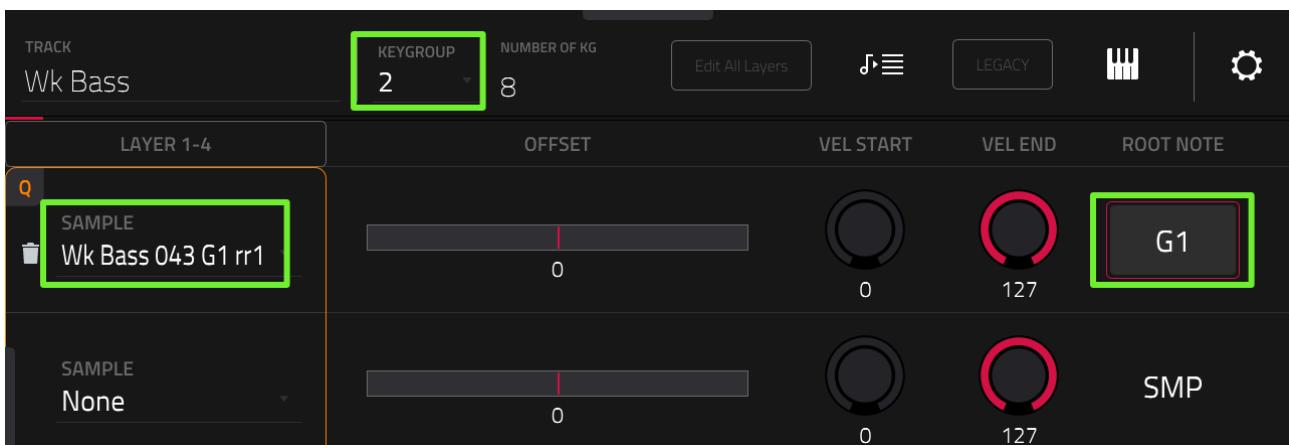
We have 8 individual note samples so in the top toolbar set **NUMBER OF KG** to **8** (we're going to ignore the noise samples for the moment). Each keygroup will contain a single sample and we'll use the **NOTE RANGE** parameter of each keygroup to automatically tune this sample to cover the all the notes in the keygroup.

First, let's assign our samples to each keygroup, setting the ROOT NOTE as we go. Select **KEYGROUP 1** in the top toolbar. Single tap **LAYER 1** and turn the (DATA WHEEL) to assign '**Wk Bass 040 E1 rr1**'. Now set the **ROOT NOTE** from **SMP** to **E1** so the MPC knows this is an 'E1' sample:

C05: MULTISAMPLING NON MIDI INSTRUMENTS



Now select **KEYGROUP 2**, assign **Wk Bass 043 G1 rr1** to **LAYER 1, ROOT NOTE: G1**



And so on for all 8 keygroups. Next select the **GLOBAL** screen, **KEYGROUP 1**:



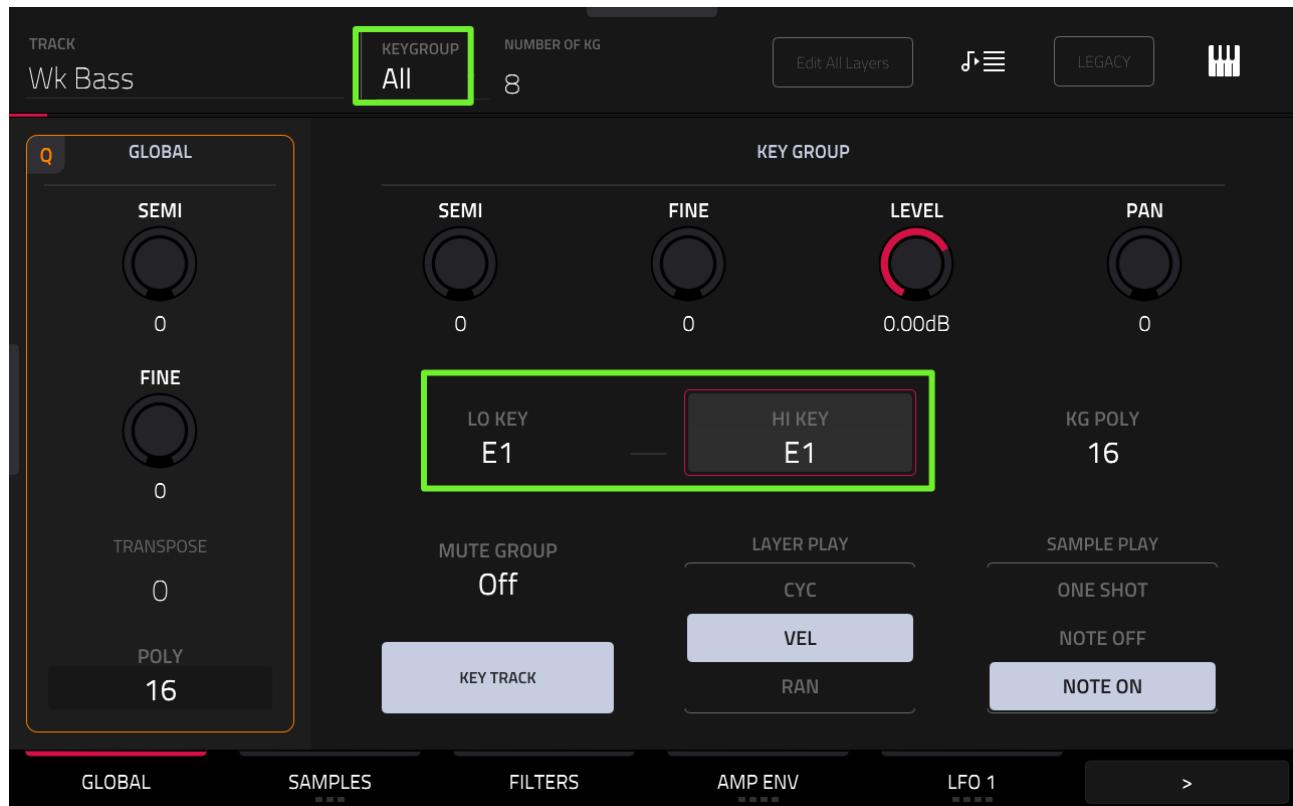
Here we set the **NOTE RANGE** for each keygroup. As covered in the autosampler tutorial, when we sample an instrument to save memory we sample a selection of notes and then 'tune' each sample to fill in the missing notes. For this instrument I sampled every three notes ('note stride' of 3), so each keygroup must cover three notes; that is, the note we sampled, plus two additional 'tuned' notes.

For example, the sample **G1** (MIDI note 43) will be tuned up one semitone to cover **Ab1** (note 44), and tuned up two semitones to cover **A1** (note 45).

As the default note range for each keygroup is C-2 to G8 it can take a lot of scrolling to set up all the individual note ranges. but I've developed a fast workflow that speeds things up, which relies on repetition (and minimal thinking!).

C05: MULTISAMPLING NON MIDI INSTRUMENTS

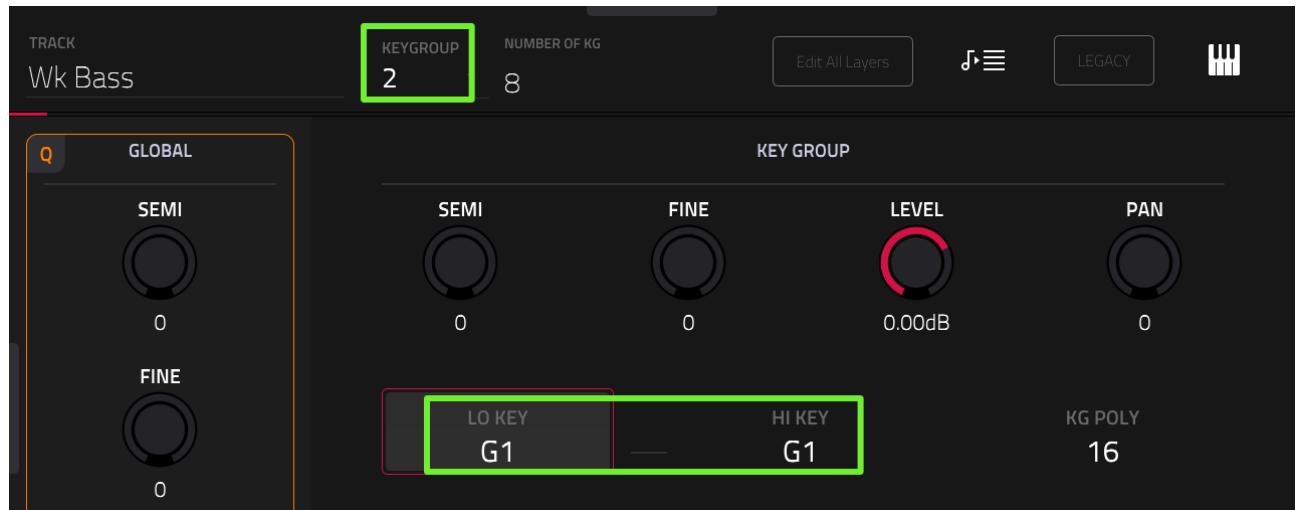
First, select set **KEYGROUP:ALL** so now any changes you make will affect all keygroups together. Now set a **LO KEY: E1** and **HI KEY: E1** (i.e. this is our lowest sampled note):



At this point all keygroups across the entire instrument have the exact same note range (E1 to E1). This immediately reduces the amount of scrolling required to set the individual note ranges.

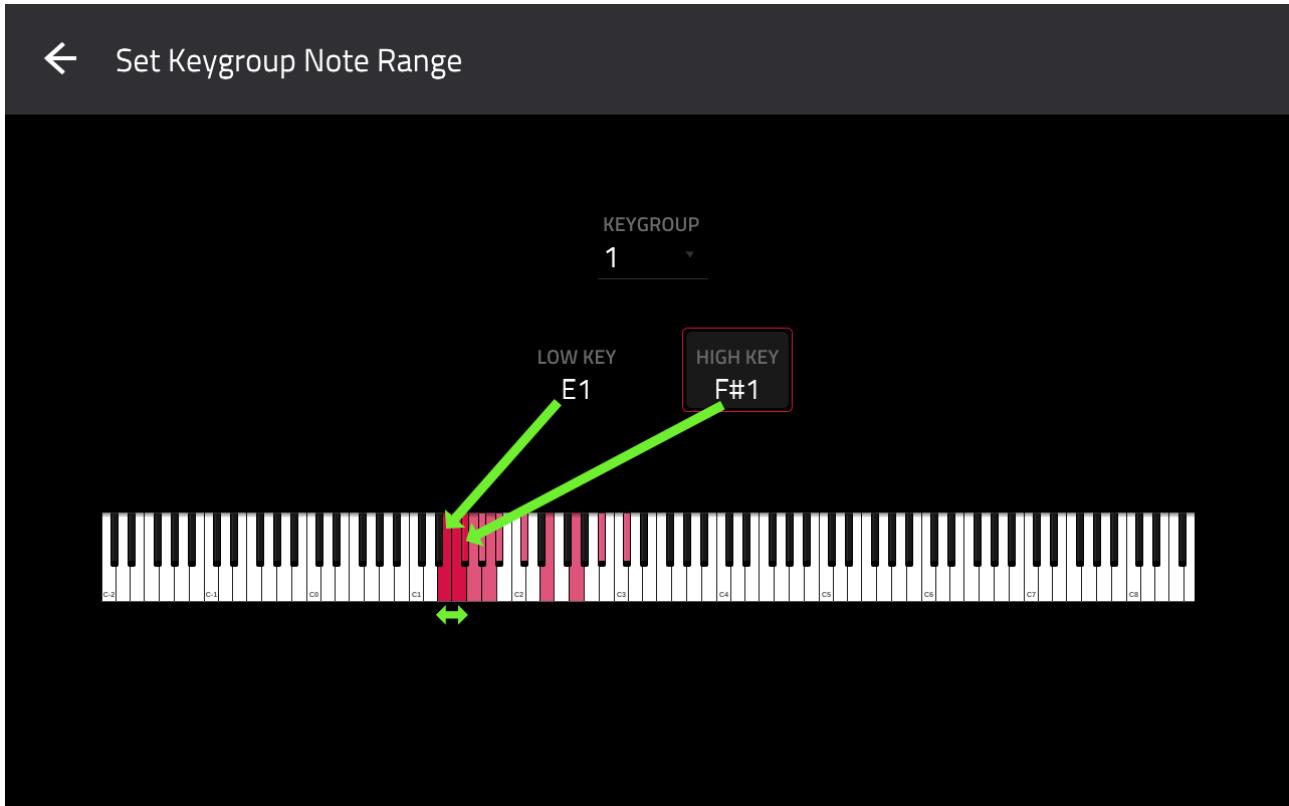
Next we're going change all the keygroups to the correct LO KEY for that particular keygroup (but don't worry about the HI KEY yet).

So, change 'KEYGROUP: ALL' to **KEYGROUP:2**. Tap on the **LO KEY** parameter for keygroup 2 and turn the (DATA WHEEL) three times clockwise to set **LO KEY: G1**. You'll see that **HI KEY** increases automatically to **G1**:



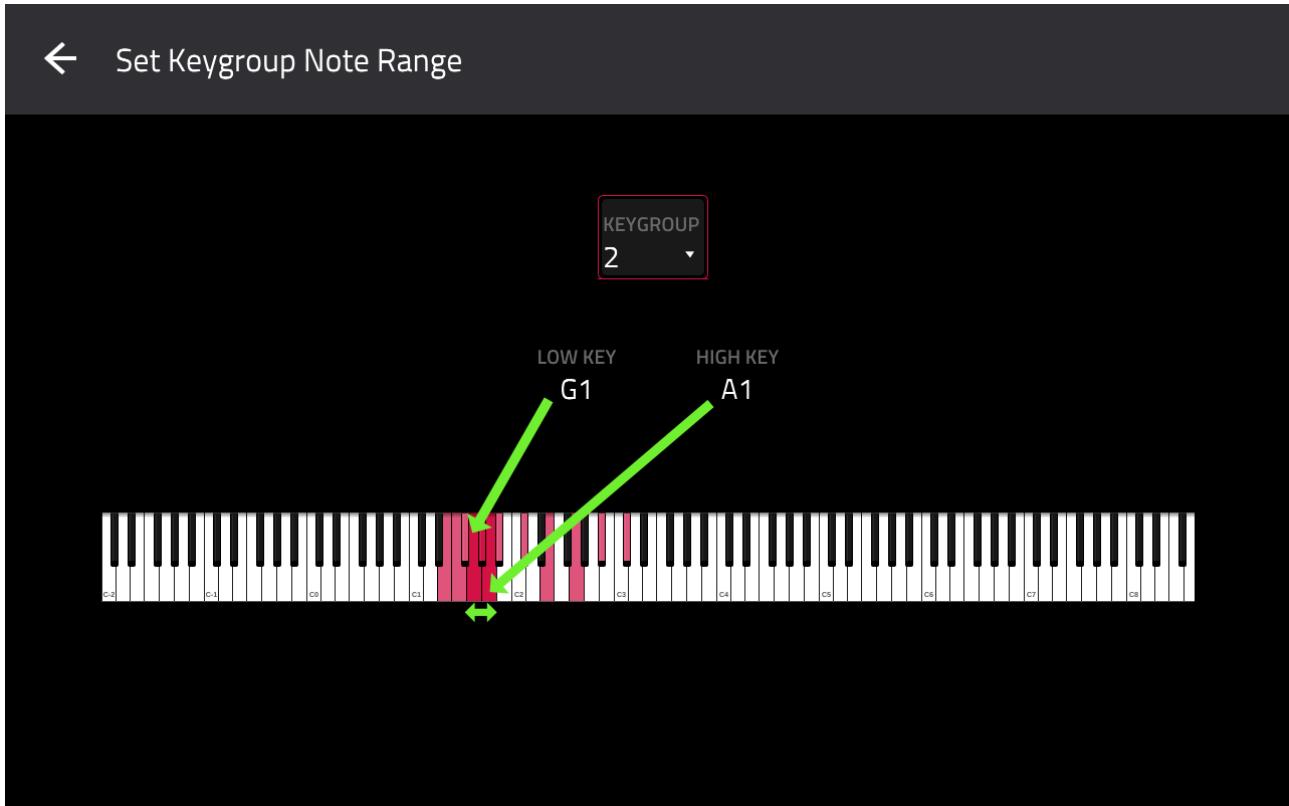
Repeat for all notes – now all keygroup note ranges are set to mirror the sample assigned to that particular keygroup. Tap on the keygroup icon in the top menubar to view the current keygroup note ranges in a graphical way:

C05: MULTISAMPLING NON MIDI INSTRUMENTS



Select **KEYGROUP 1** and tap on **HIGH KEY**. Turn the (DATA WHEEL) two clicks clockwise to set **HI KEY: F#1**.

Now tap on **KEYGROUP:2** and turn the (DATA WHEEL) two clicks clockwise to set **HI KEY: A1**:



Repeat this for all keygroups – again, this is just mindless repetition, so rather than trying to set all parameters for each keygroup in one go, we simply concentrate on changing the same single parameter for each keygroup in turn. Once this parameter is set for all keygroups we move on to setting the next parameter for all keygroups. Repetition and mindlessness works wonders!

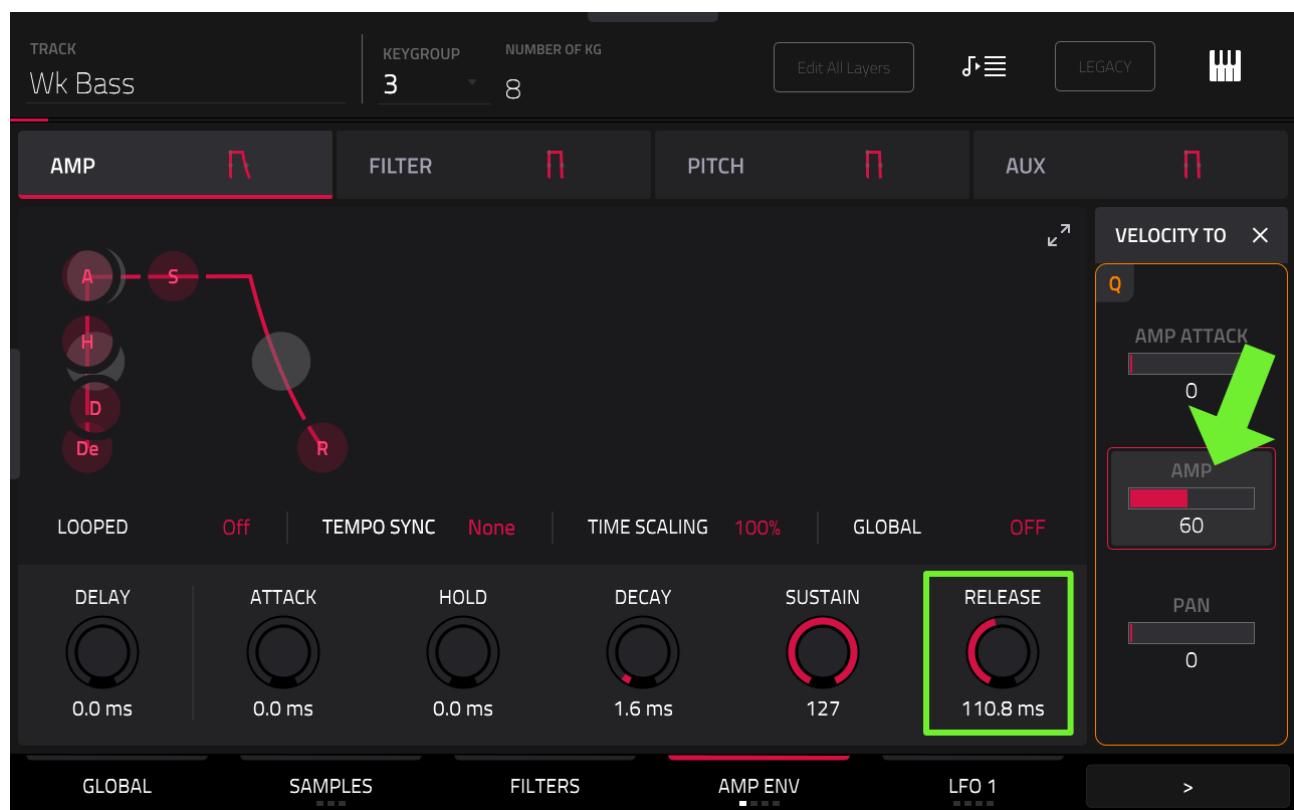
As an optional extra, you can extend the lowest and highest keygroups to allow for more notes. As these are not synthesised sounds you'll normally want to keep the tuning quite sensible – for example, take **KEYGROUP 1** down to **LOW KEY: D1**, and **KEYGROUP 8** up to **HIGH KEY: A3** (you can usually tune up a few more semitones than you can tune down). That said, take these 'free' notes as far as you want!

Now play your pads (or attached keys) – remember this instrument has a fairly limited note range so you'll have to change pad banks to find where all the notes are (top rows in bank A, most pads in bank B).

Load up my version so far; project file '**Electric Bass Keygroups.xpj**'.

EDITING THE INSTRUMENT

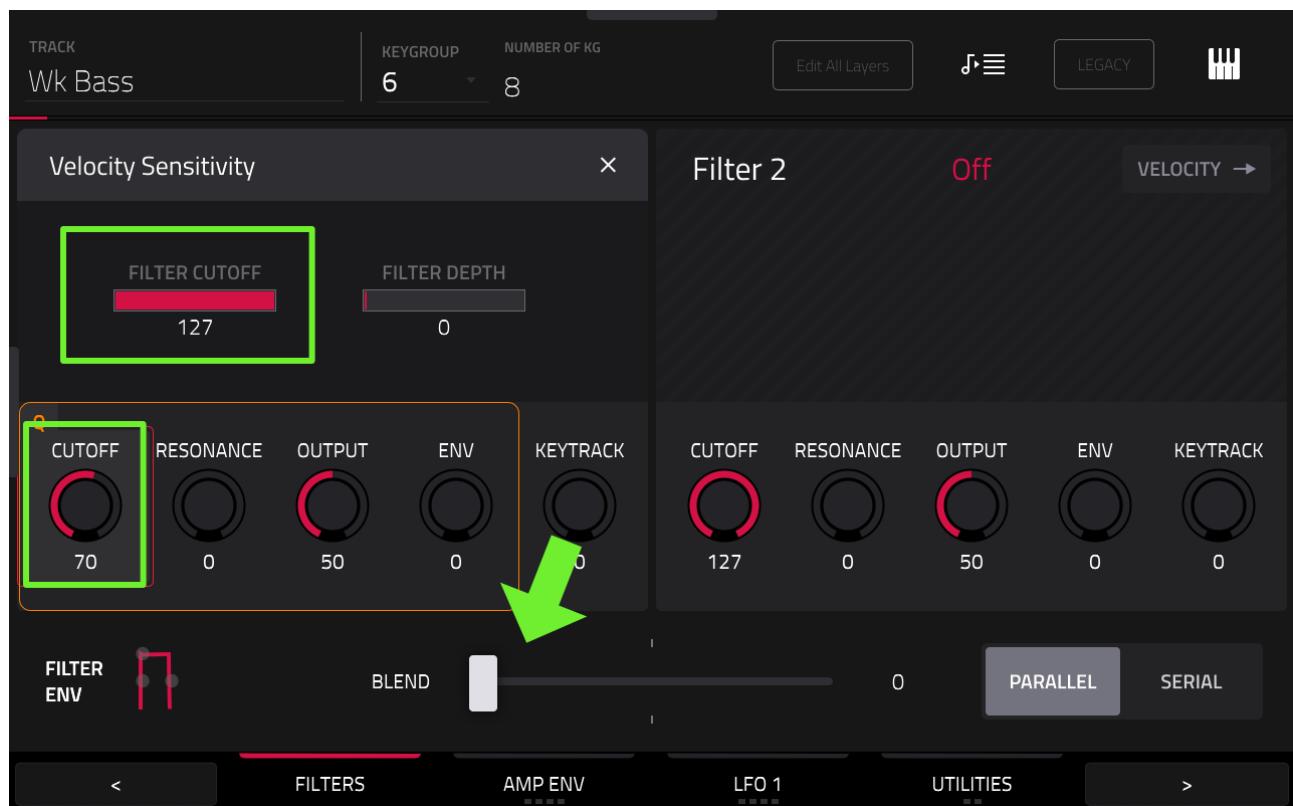
The first thing is to add some nice release to each note. Click on **AMP ENV** to select the instrument's Amp Envelope. Add some **RELEASE** of around **110 ms**.



Tap on the **KEYGROUP→** button in the far right column to reveal the **VELOCITY TO** settings. Set the **AMP** to around **60** to reduce the dynamic range between soft and hard hit notes, ensuring that those really soft note still register reasonable volume.

You could also set **AMP ATTACK** to **20** – this will shave some of the attack off those softly hit notes which can emulate the way soft bass notes would sound (i.e. less aggressive attack). Turn off [**FULL LEVEL**] to test this and adjust if you feel it needs it.

Let's also make the soft notes a bit darker. Click on **FILTERS** and set the **BLEND** all the way to the left (0). Set **Filter 1: Low 2** and a **CUTOFF** of **70**:

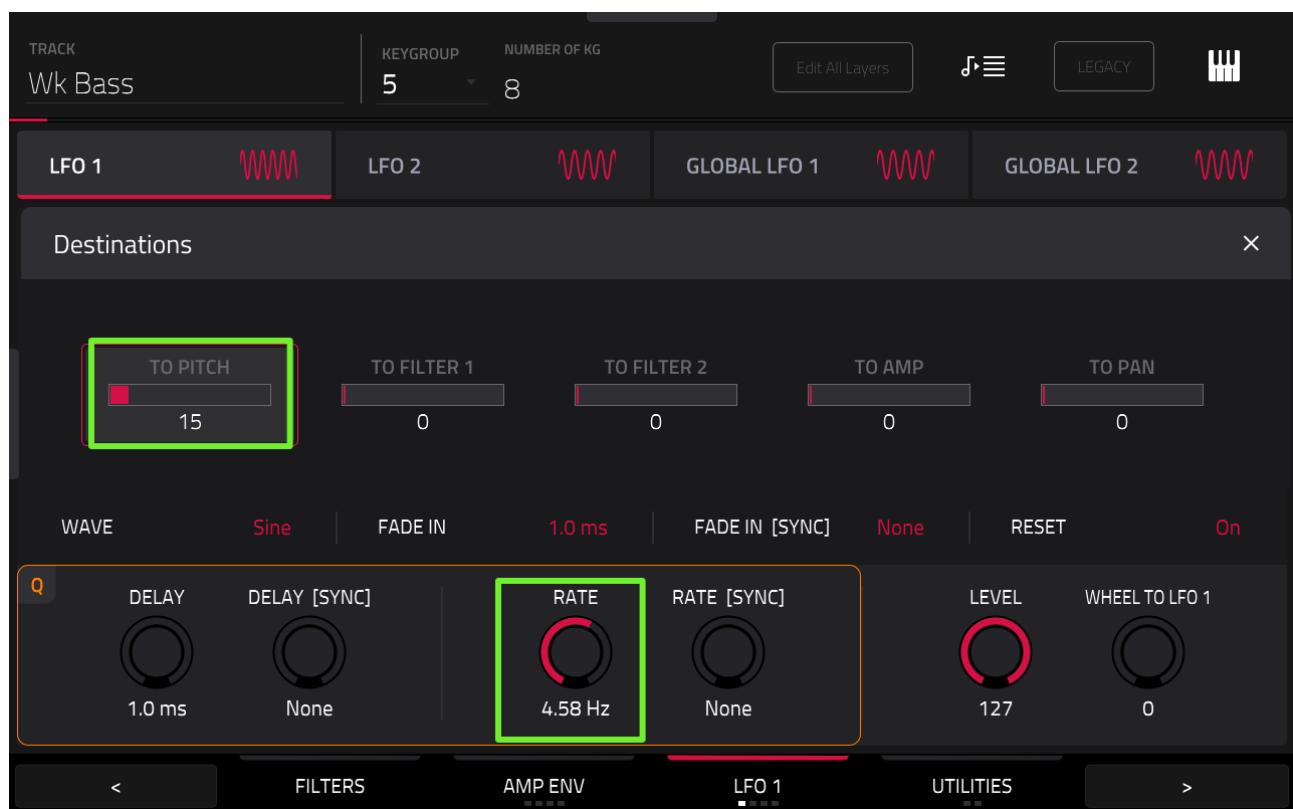


Tap on the **VELOCITY→** button to reveal the **Velocity Sensitivity** screen and set the **FILTER CUTOFF** to **127** to ensure no low pass filter is applied at the hardest hits but things get nice and dark at the soft hits. Test by hitting a pad at varying velocities and further tweak the **CUTOFF** to taste.

ADDING CONTROLLABLE VIBRATO

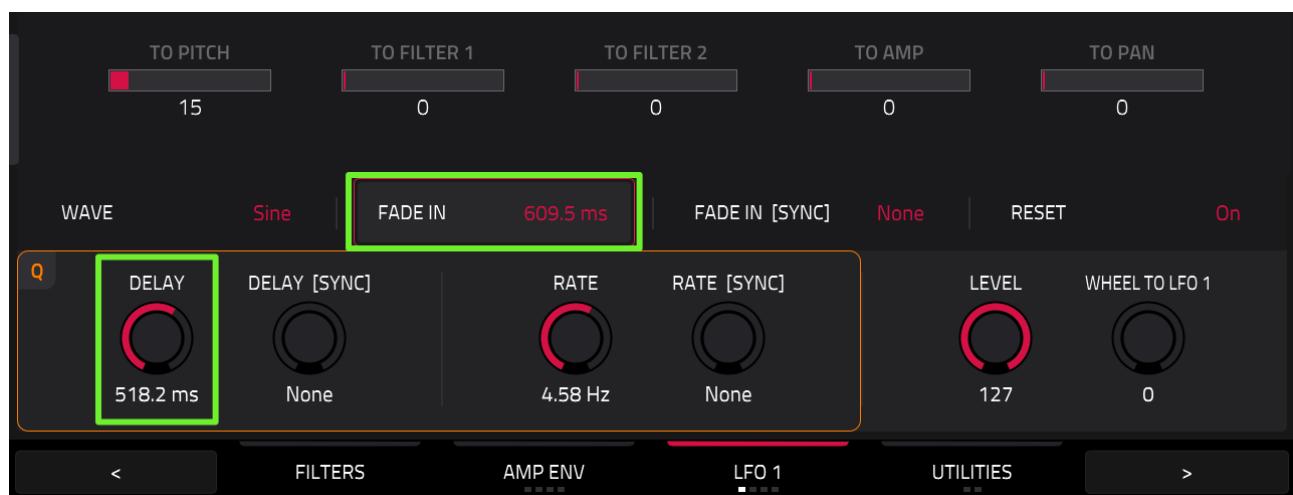
We can use the LFO to modulate pitch which in turn will give us a reasonable emulation of 'vibrato' (subtle, sustained up and down bending of a note to add feeling).

Go to **LFO1**:



Try a **RATE** of **4.58 Hz** and a **WAVE: Sine**. Tap on **DESTINATIONS** → In the right of the screen. Set **TO PITCH** to **15** (this is going to be too high, but it will help highlight the modulation).

Press and hold any note and you should hear the vibrato in action. Now to make this a bit more like real vibrato you can add a little delay before the vibrato kicks in; tap on **DELAY** and set it to around **518ms**. You can also add a little 'fade in' so when the modulation does start, it gradually builds to the maximum level. Tap on **FADE IN** and set to around **600 ms**:



Of course you'll probably only want to add this on certain notes, so let's add some way to control this vibrato 'on demand'.

If you have a 'modulation wheel', either because you have an MPC Key model or have a MIDI keyboard attached via USB or bluetooth, you can control the vibrato with this 'mod wheel'. Simply set the **WHEEL TO LFO 1** setting to the maximum of **100**:



At this point the vibrato is gone and it will only be audible as you push your mod wheel upwards; the more you engage the mod wheel, the more the level of LFO1 is increased.

If you don't have a mod wheel, we can use a Q-LINK instead.

CONTROLLING VIBRATO WITH A Q-LINK

Hold down the **[Q-LINK]** button and select **MIDI mode**:

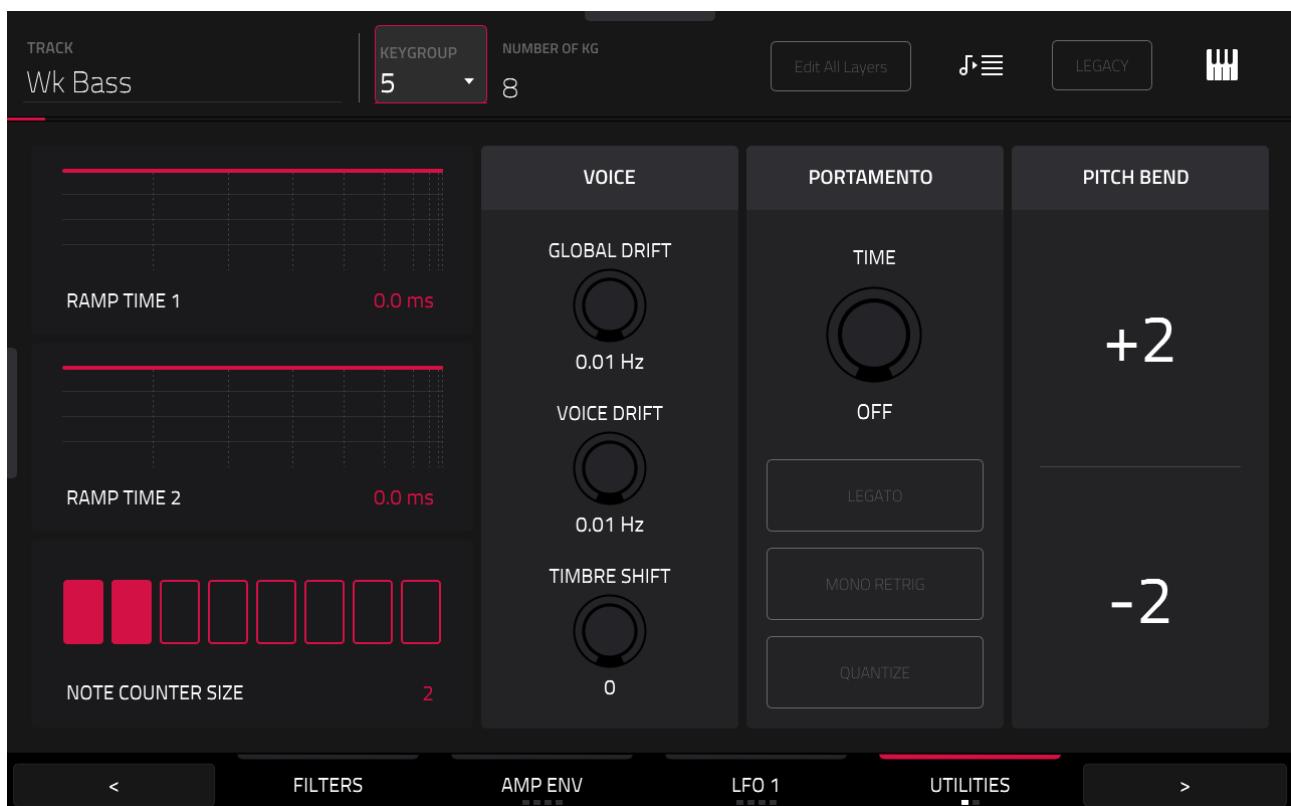


MIDI mode features a set of pre-configured Q-LINK assignments optimised for allowing control of functionality that is normally provided by attached MIDI devices.

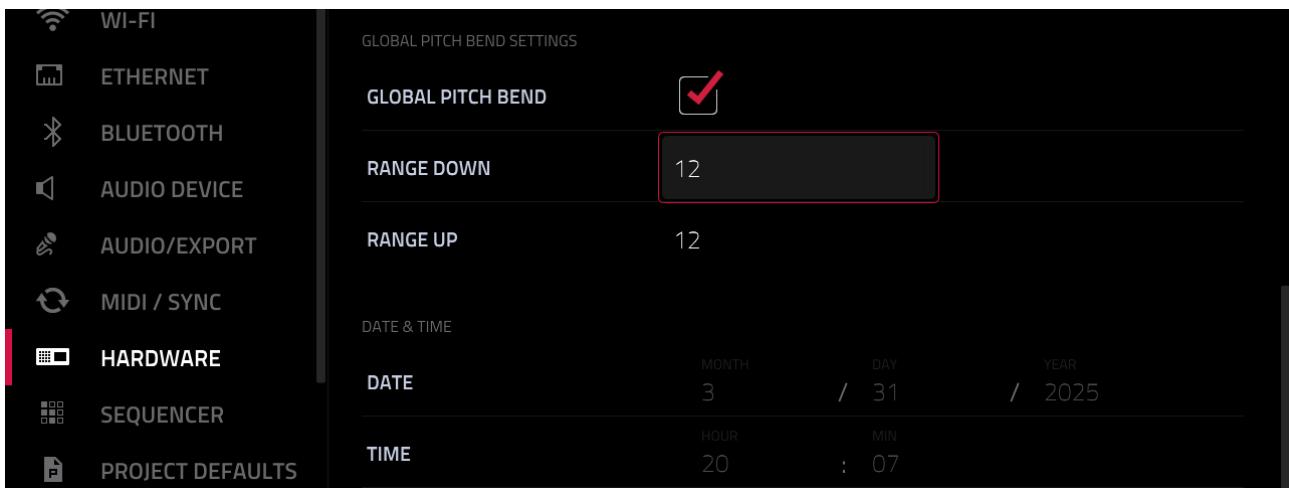
[**Q-LINK BANK 1**] is the most interesting here with (Q-LINK 9) labelled '**Modulation**'. With **WHEEL TO LFO1** still set to **100**, hold down a pad and start turning (Q-LINK 9) clockwise; the more you increase the Modulation value, the more it increases the LFO1 level and hence increases the vibrato.

PITCHBEND CONTROL

All the notes in a keygroup track can be 'bent' using the pitchbend wheel on a MIDI keyboard (or via the pitch wheel in an MPC KEY). The default pitch bend range is **+/- 2 semitones**. This can be changed in **TRACK EDIT** > **UTILITIES**:



Or you can apply a 'global' pitch bend range via **MENU > PREFERENCES > HARDWARE**:



Check '**GLOBAL PITCH BEND**' and change the **RANGE UP** and **RANGE DOWN** values accordingly – for example, a setting of 12 will allow a full octave bend. Personally I prefer to set pitch bend range uniquely for each instrument. For example on a real guitar I'd prefer a 'natural' range of +/- 2 (maybe as high as 3), but for a synth lead I might go for a full octave.

If you don't have a pitchbend wheel there's a custom Q-LINK control for **pitchbend**, (Q-LINK 13):



Notice how the pitch bend Q-LINK automatically resets to 0 when you release the Q-LINK, while the Modulation Q-LINK stays fixed at the last set value? If you'd prefer the modulation dial to act in the same way there is unfortunately no way to change the Q-LINK action in the MIDI screen. But there is another way to control LFO with the Q-LINKS.

LFO CONTROL WITH A CUSTOM Q-LINK MACRO

Return to **TRACK EDIT** and set the **WHEEL TO LFO1** setting back to **0** so it is no longer controllable by mod wheel or the Modulation Q-link. Hold down **[Q-LINK]** and select **TRACK** mode:



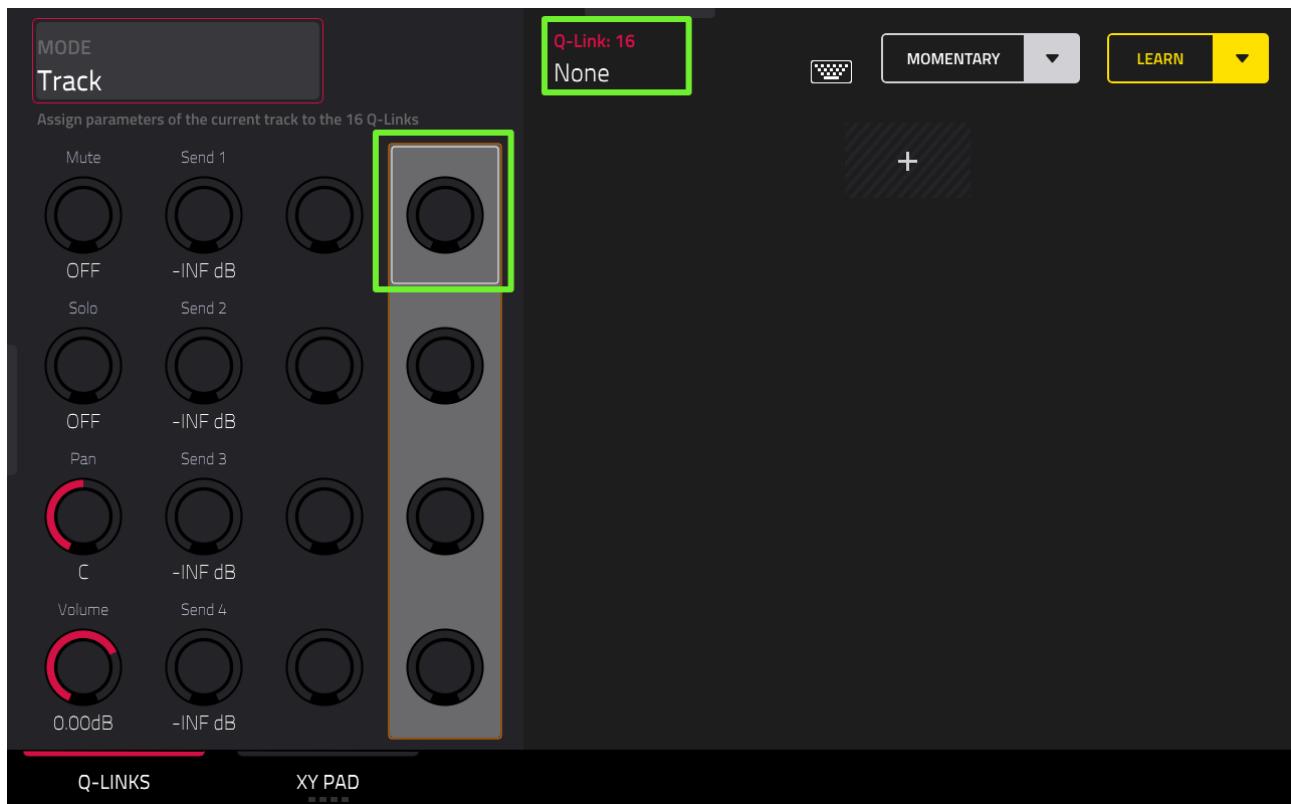
Track Q-LINKS allow for customised Q-LINK control of almost any track parameter and are saved with the track, so as long as Q-LINK 'track' mode is enabled, your Q-LINKS will always be assigned to the parameters set in this screen.



When a project is saved, the currently active Q-LINK mode is saved with it, so upon re-loading this Q-LINK mode will be automatically selected again.

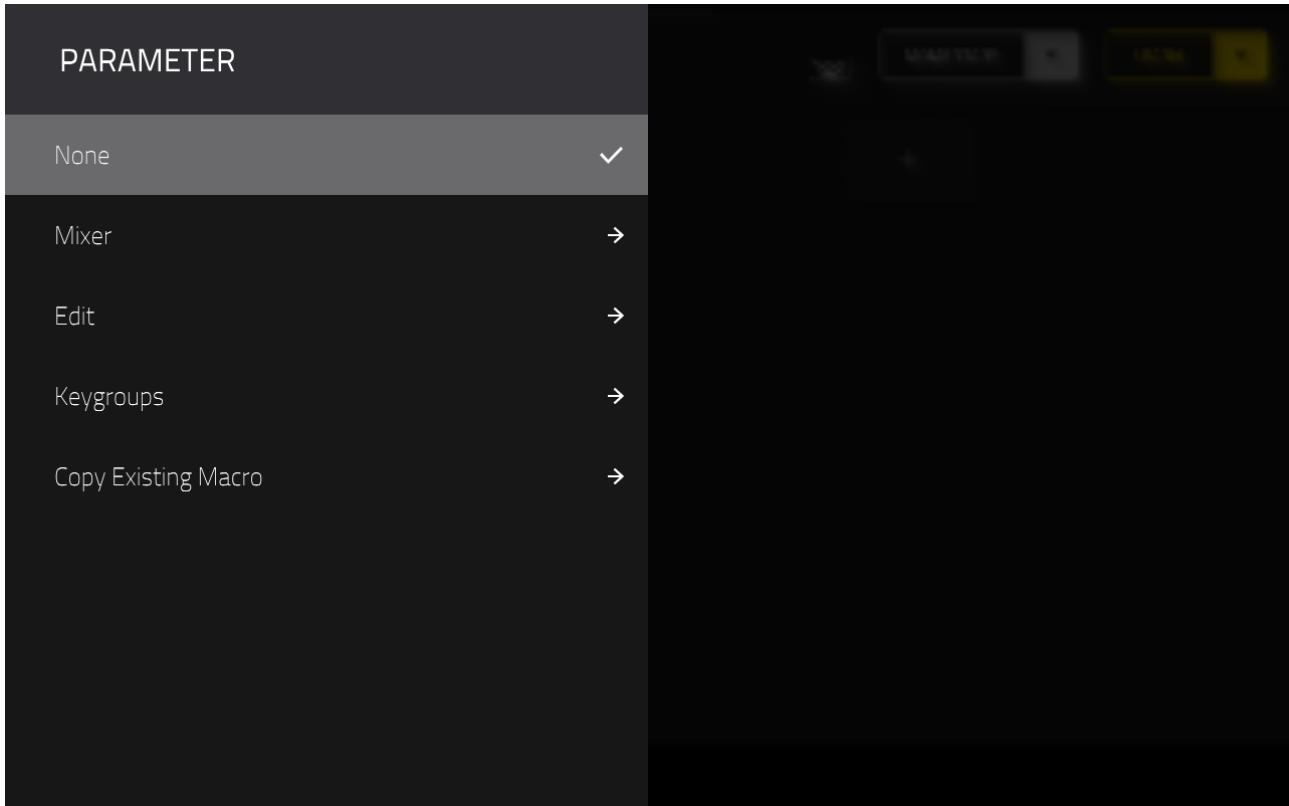
While still holding down the [Q-LINK] button, tap on **Q-LINK EDIT**. Tap on (Q-LINK 16) to select it (this is top right hand Q-LINK):

C05: MULTISAMPLING NON MIDI INSTRUMENTS

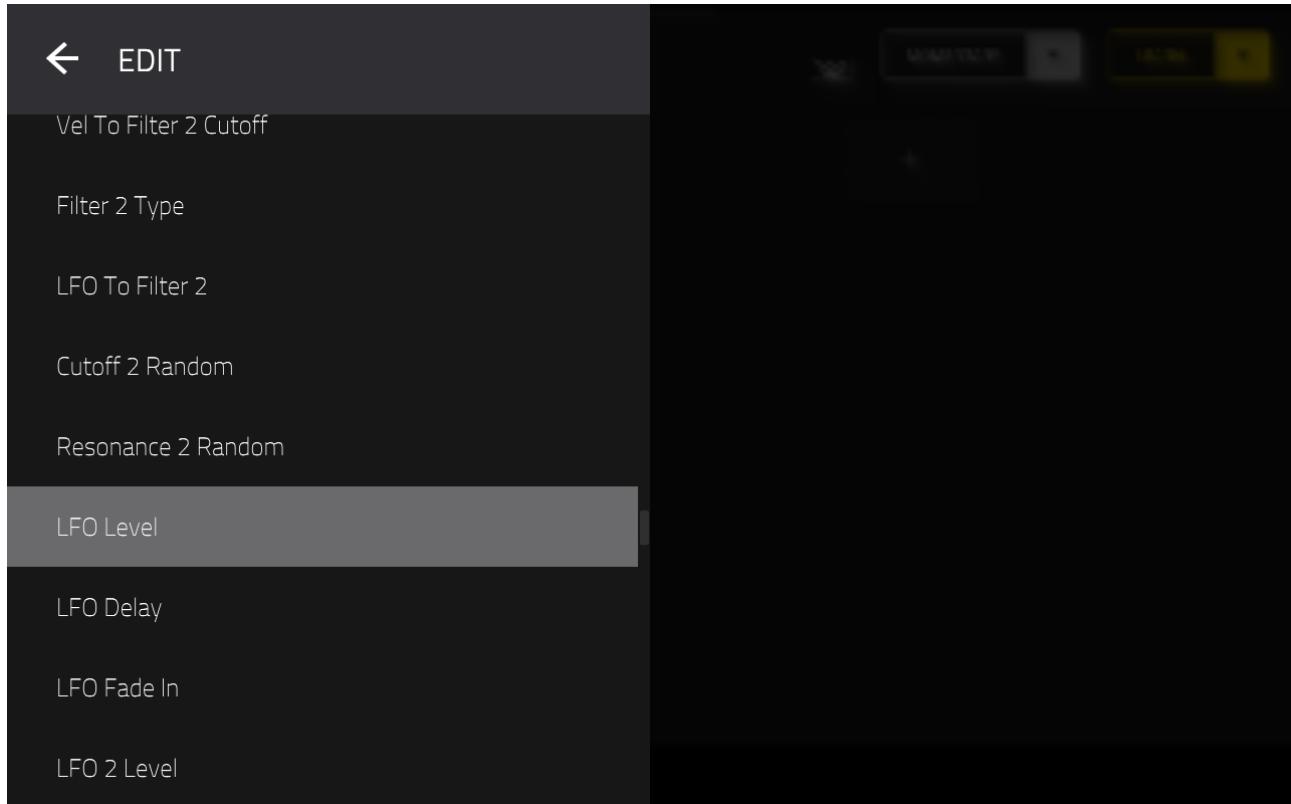


Currently this Q-LINK has no parameter assigned to it. Tap on the + icon on the right hand side of the screen to bring up the **PARAMETER** box:

C05: MULTISAMPLING NON MIDI INSTRUMENTS

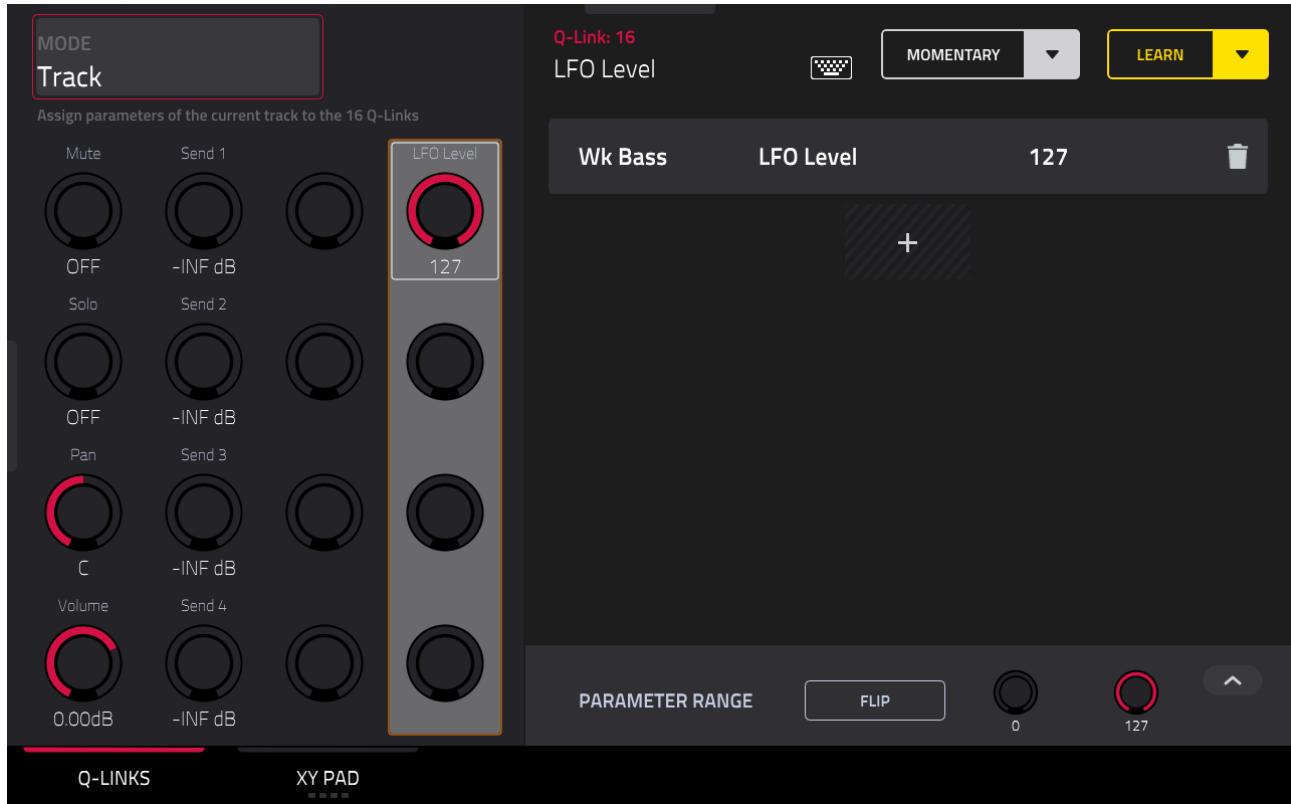


Select **Edit** and turn the (DATA WHEEL) until you reach **LFO Level** (approx two thirds down the list):



Here **LFO Level** refers to the level of LFO 1 specifically. Push down on the (DATA WHEEL) to select this parameter (or tap on the value on the touchscreen if you have an MPC X as this doesn't have a 'clickable' wheel):

C05: MULTISAMPLING NON MIDI INSTRUMENTS

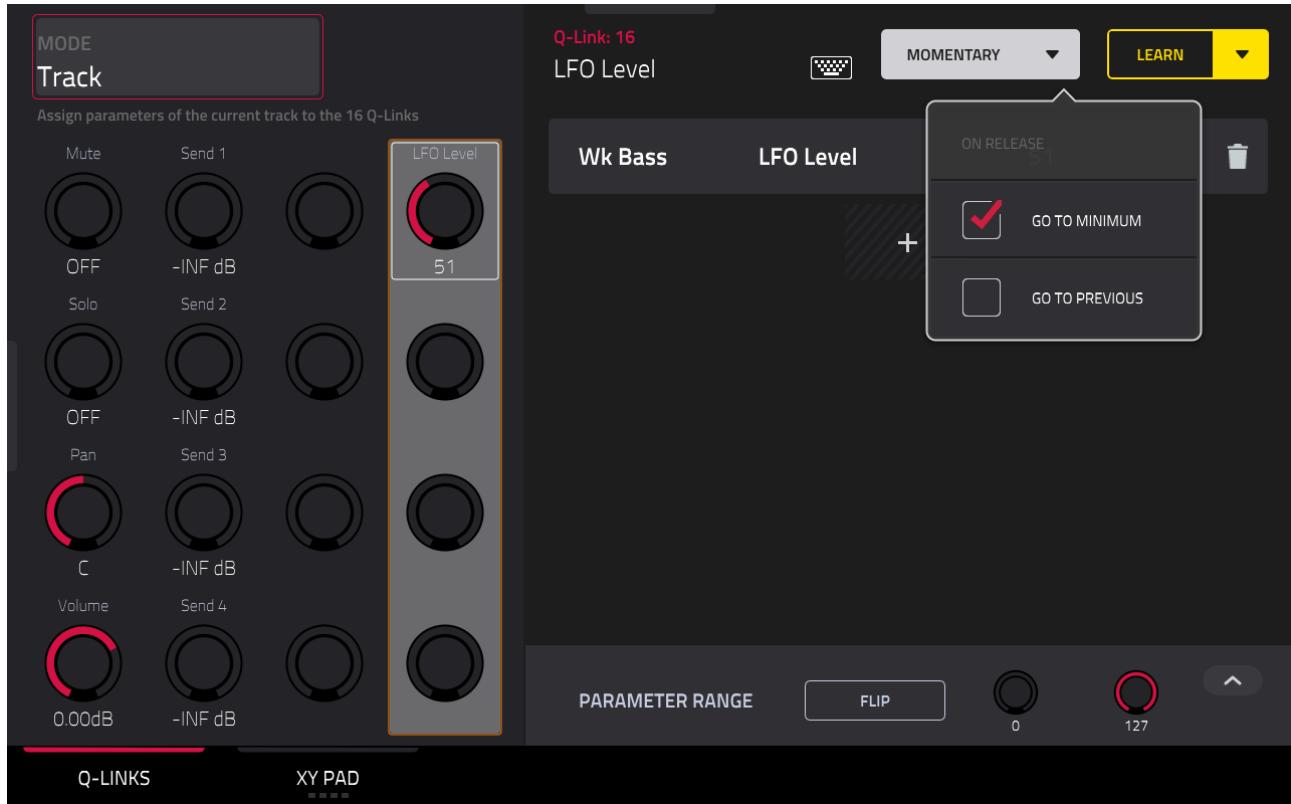


Turn (Q-LINK 16) anticlockwise while holding down a pad and you'll see the LFO Level decrease while the vibrato volume decreases simultaneously. So all we're doing here is controlling the 'level' of the LFO with a Q-LINK, which is effectively what the mod wheel is doing.

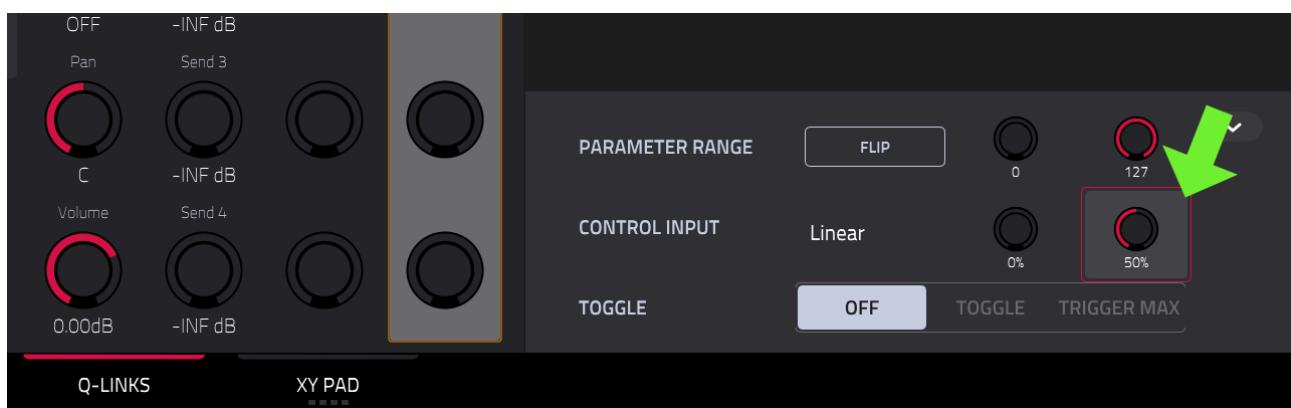
The range of this Q-LINK is set in the **PARAMETER RANGE** box at the bottom of the screen, so as we can see, the minimum is 0, the max is 127 (i.e. full LFO level).

If you want the Q-LINK to reset to the minimum value of 0 each time you let go, tap on the downward arrow in the **MOMENTARY** box at the top of the screen and select '**GO TO MINIMUM**'.

C05: MULTISAMPLING NON MIDI INSTRUMENTS



Now no matter what value you set the Q-LINK to, it will always snap back to 0 upon releasing the dial, just like a real mod wheel. And if you find you have to turn the dial too far to get that full 127 LFO level, tap on the up arrow in the **PARAMETER RANGE** box to expand the options:



Set the maximum **CONTROL INPUT** value from **100%** to say, **50%** and try the Q-LINK; now you don't have to turn the Q-LINK as much to achieve maximum change. If you want it even more sensitive, set an even lower % here.

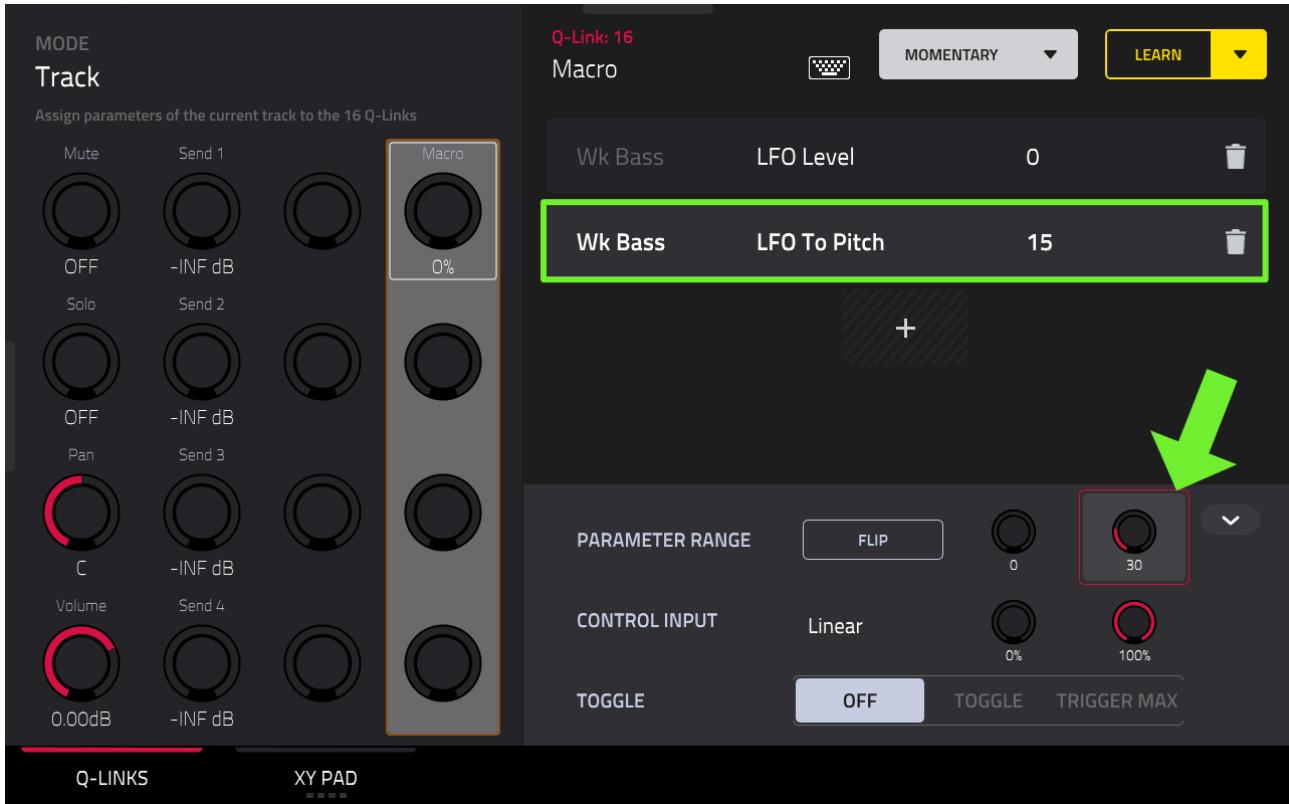


*If you just want the note to jump to maximum vibrato when you touch the Q-LINK and then return to 0 when you release the Q-LINK, set **TOGGLE** from OFF to **TOGGLE**.*

ADDING MULTIPLE PARAMETERS TO A SINGLE Q-LINK MACRO

We can take the vibrato control even further. With (Q-LINK 16) still selected, tap on the + icon again to add a second parameter control. This time select **Edit > LFO to PITCH**:

C05: MULTISAMPLING NON MIDI INSTRUMENTS



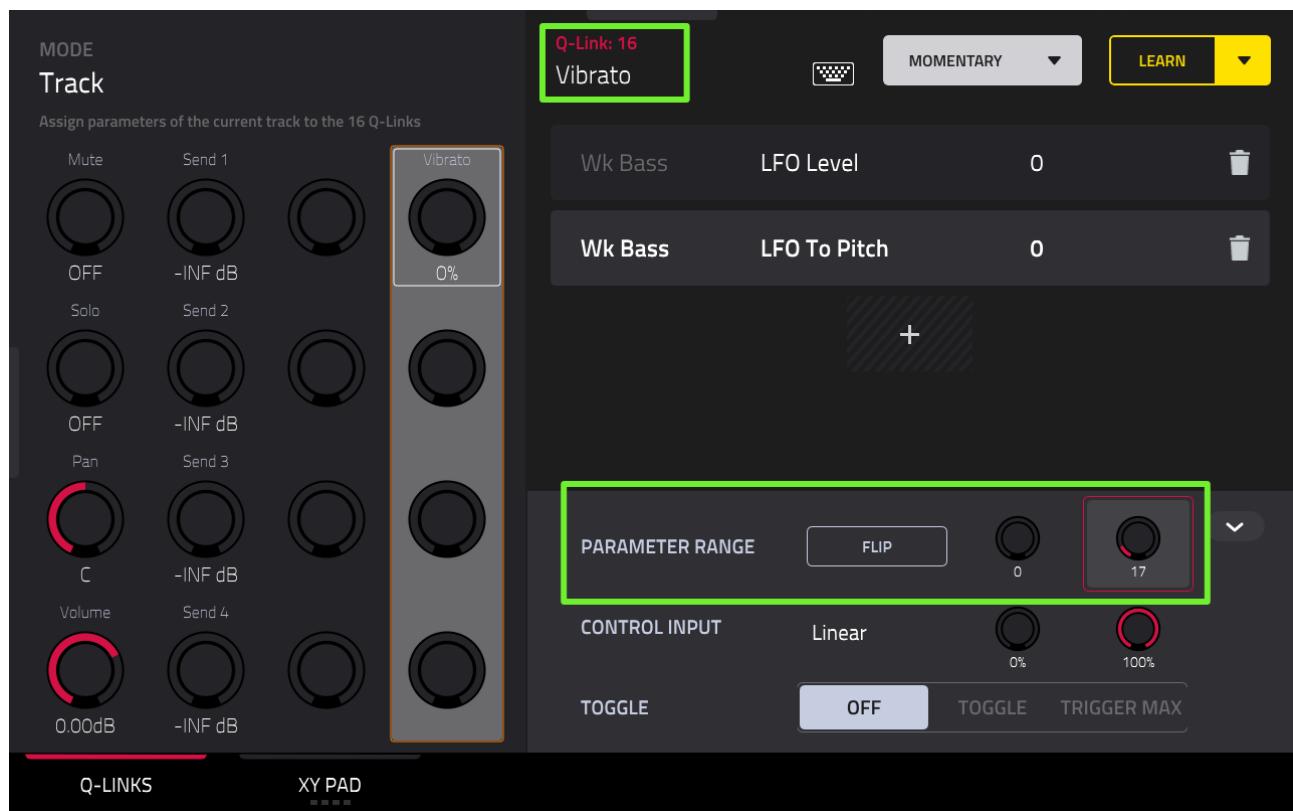
Tap on this new parameter so its settings are displayed at the bottom. Set the maximum value in **PARAMETER RANGE** to **30**, but leave the **CONTROL INPUT** at the default **0 to 100%**.

Now hold down a pad while you turn (Q-LINK 16) clockwise. Now the Q-LINK is controlling *both* parameters, so we're seeing an increase in LFO 1 level coupled with an increase in the amount of pitch increase applied.

What's interesting is that because the LFO level is set to a maximum control input of 50%, that parameter hits its max after only a short turn, but at this point the PITCH value is at 15, not the max 30. If you then continue turning the Q-LINK, the PITCH now increases on its own.

So now we have a Q-LINK that can apply more gentle and small-ish pitch changes initially, but push the dial harder and you'll get extreme pitch changes only when you really want to push it.

Consider dialling down the maximum pitch to a more reasonable level; I think the standard 'mid-way' pitch should be around 8, so set the **LFO to Pitch** maximum to **17**:

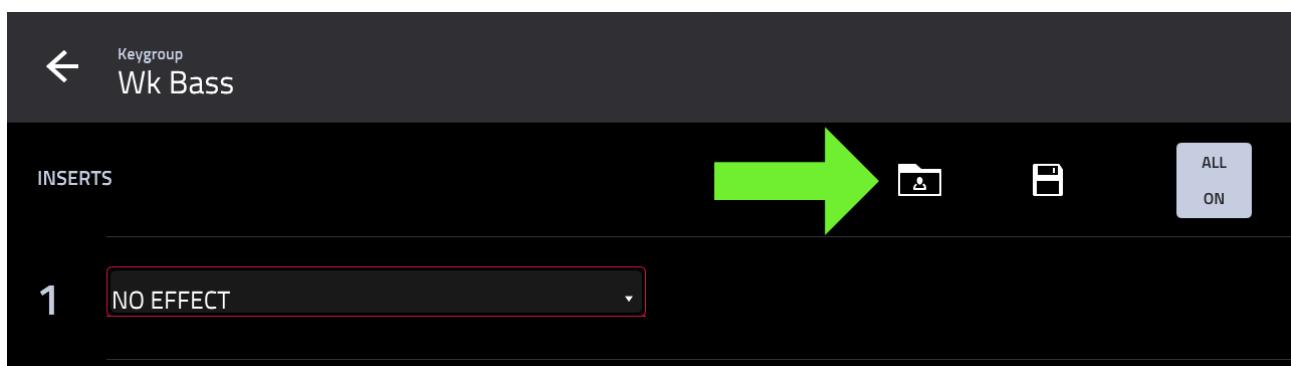


Finally rename the macro to '**Vibrato**' using the keyboard icon at the top of the screen - this is the name you will see in the 'pop out' Q-LINK STATUS window.

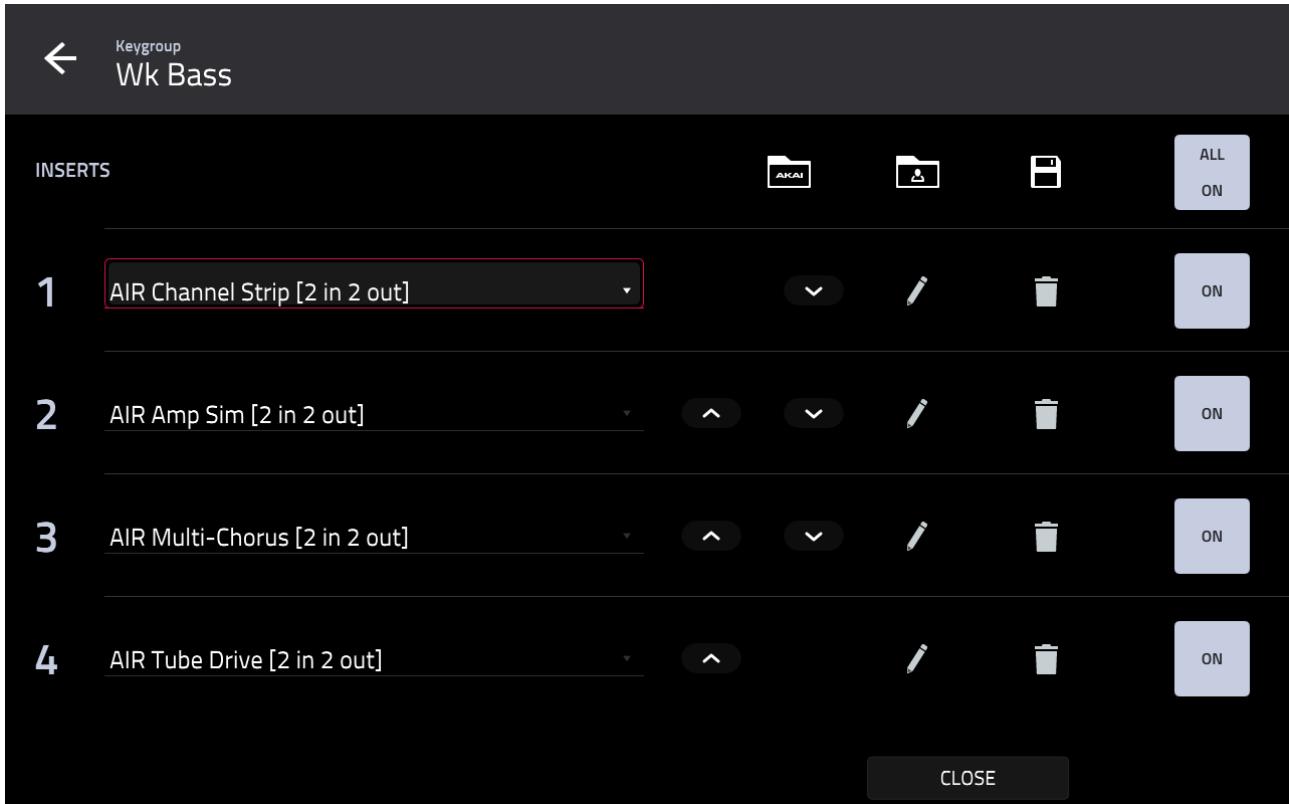
Q-LINK CONTROLLABLE INSTRUMENT FX

Let's set up an FX rack for this bass guitar, one that can be saved with the instrument and also feature instant hands-on Q-LINK control from any screen.

Go to [**MAIN**] and expand the **XL Channel Strip**; select the **FX tab**. Open the **INSERTS** screen and tap on the '**Load FX Rack**' icon:



Navigate to the **C05** folder and double tap and load the **Electric Bass.xfx** rack file.



This is a bit of a universal type of FX rack that features various useful plugins for a bass guitar. We have **AIR Channel Strip** which should take care of general compression and EQ duties. The preset for this is nothing too outrageous, just a little compression (slow attack, fast release, medium ratio) and a touch of low end EQ boost.

Next **Harmonic > AIR Amp Sim**. This is an almost no brainer for a guitar sound as it will give us access to a range of different tones, distortion and even some additional EQ options. I've set this up initially on the 'DI' option with a mostly neutral configuration.

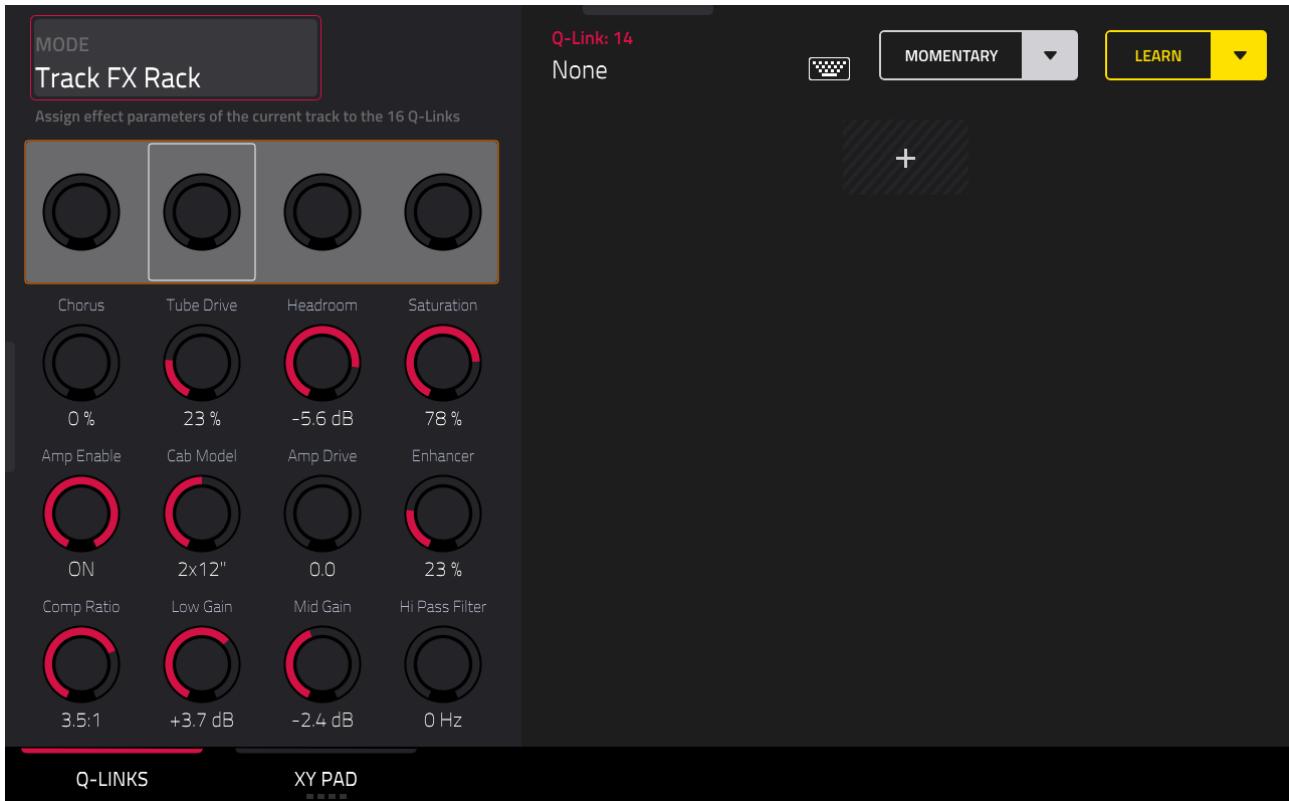


Next add an instance of **Modulation > AIR Multi Chorus**, simply because bass guitar and chorus is a classic combo and it's a nice option to have 'on tap' when you need it. Initially configured with a **MIX** of **0%**.

The last is a wild card option, sometimes I prefer to leave this empty so I can add a custom FX plugin on a per song basis, it could be something like Air LoFi or maybe AIR Fuzz Wah – all these plugins will work really well with an electric bass guitar. But for this example, I've added some **AIR Tube Drive** so we can add a little saturation and extra 'oomf' if we ever need it.

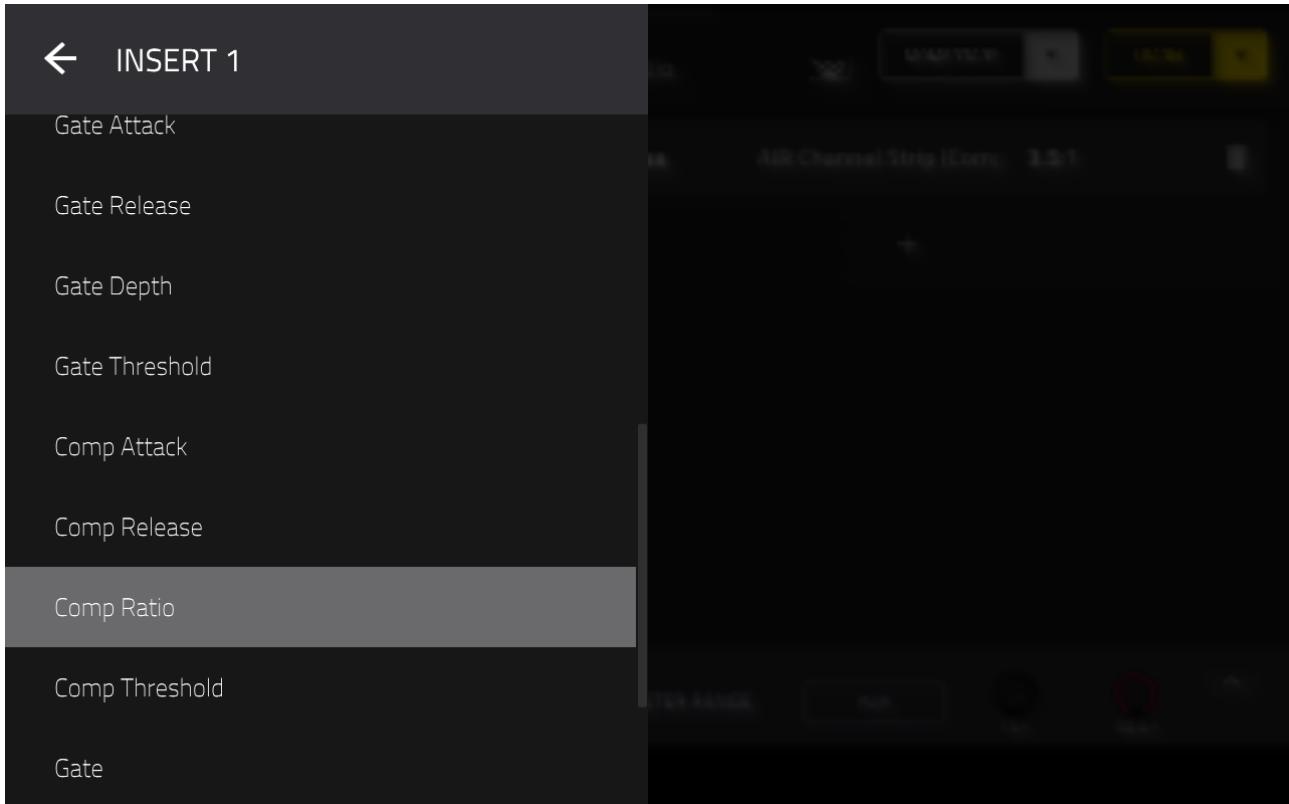
Let's add some hands-on control of some select FX parameters. Hold down the **[Q-LINK]** button and select the **Track FX RACK** option. Now hit **Q-LINK EDIT**.

C05: MULTISAMPLING NON MIDI INSTRUMENTS



When I created this FX rack I also set up twelve unique Q-LINK macros to control some of the racks' FX (otherwise by default, the Q-Link macros would be blank on this screen). These macros allow me to quickly control a selection of FX parameters using only my Q-LINKS from any screen.

For example, to add control for the Air Channel Strip compression 'ratio', tap on the Q-LINK you wish to assign to it, hit the **+** button and in the **PARAMETERS** screen, choose **INSERT 1 > Comp Ratio**:



Continue this for as many parameters and as many rack plugins as you wish to control. The first Q-LINK bank here controls the **Air Channel Strip** compression and EQ, while the next Q-LINK bank provides control for the **Amp Sim**. Notice that (Q-LINK 5) is set to the plugin '**enable**', and I've renamed it '**Amp Enable**'. I've also renamed the '**Top Boost**' control on (Q-LINK 8) to '**Enhancer**' as that's really what it seems like to me.

I added a 'mix' for the chorus on (Q-LINK 9) which I renamed from 'Mix' to '**Chorus**', and then three controls for the **Tube Drive** to add some drive and saturation. As we already have another type of 'drive' on the Amp Sim plugin as well (and they are very different types of drive) I've renamed both these drives to differentiate them.

When you are happy with your instrument, remember to save it as a 'standalone' file that can be re-used in any project. Hit [**MENU**] > **SAVE** > **Track** and save it to the '**Instruments**' folder as we described in the previous chapter.

My version of the bass guitar instrument, along with all its custom Q-LINK macros, can be found in the '**C05 > Instruments**' folder. It's a 'track' file called '**Wk Bass.xtk**'. If you wish to keep your current track, remember to select '**LOAD TO NEW TRACK**'.



*Remember, custom Q-LINK macros, along with all your advanced keygroup settings (LFO, envelopes, filters etc) will only be stored in the instrument if you save it as a '**Track**' file. Saving as a 'keygroup' is only for instruments designed for use in MPC2 or the Akai Force and will strip out many of the MPC3-specific settings, so is not recommended as a saving format.*

INCORPORATING ROUND ROBINS

To make our instrument more realistic we can introduce **round robins**. When a keygroup is configured to play round robins it plays a slightly different version of the same note each time the keygroup is triggered.

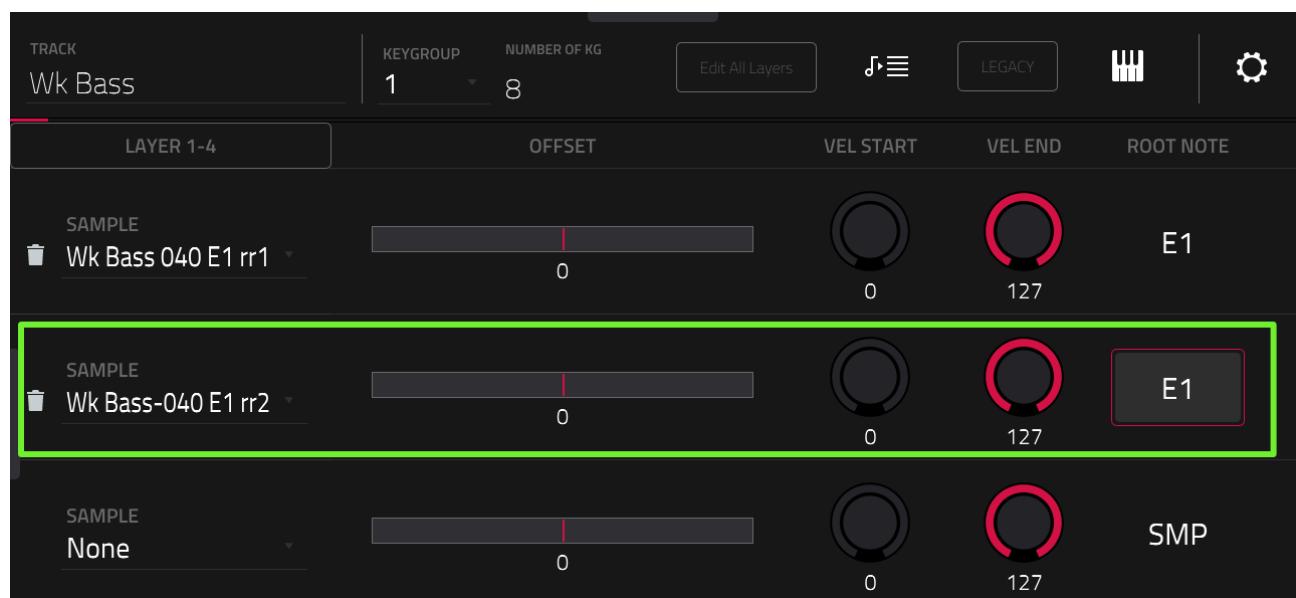
To create round robins we simply record each note multiple times – this is because no matter how much you try to play a note identically each time, it will never sound exactly the same – there's always going to be some differences, sometimes subtle, sometimes quite obvious. Round robin attempt to capture these differences in timbre.

We'll create the additional 'round robins by using samples from our 'take 2' recording. Alternatively you could just play all your round robins together in a single take; for example, play the E1 note, then play it again, then play the G1 twice and so on.

We don't need to go through the editing process again, so just load my second batch of 'ready made' round robins from the **C05** folder; locate the '**Additional Round Robins**' folder, tap and hit [SHIFT] > **LOAD ALL** to load them to the sample pool.

I've named the samples similarly to the previous session, except I've appended '**rr2**' to the end of each sample, e.g. **Wk Bass 040 E1 rr2**

Go to **TRACK EDIT > VELOCITY** (SAMPLES three times) and for every existing keygroup, add the additional '**rr2**' round robin version to **LAYER 2**. For example, in **KEYGROUP 1**, add **Wk Bass 040 E1 rr2** to **LAYER 2**.



Don't forget each layer has its own **ROOT NOTE** setting, so make sure you adjust this appropriately for each new sample.



*As an alternative to setting the root note in keygroup sample layers, you can embed the ROOT NOTE directly inside the sample itself via **SAMPLE EDIT > TRIM > ROOT NOTE**. If you do this you can leave the ROOT NOTE setting in your keygroups at the default **SMP** ('sample') as the MPC will read the root note directly from the sample instead. However, if you forget to set root note in SAMPLE EDIT the MPC will assume all your samples are in the pitch C3 and this will mess up all the pitches in your instrument.*

At the moment, with all keygroups set to velocity layering, you'll just hear both layers play together. Go to **TRACK EDIT > GLOBAL**, set **KEYGROUP:ALL** and set **LAYER PLAY** to **CYC** ('cycle'). Now play the same note repeatedly and it will play each layer alternately.

Alternatively set this to **RAN** ('random') for random playback, but bear in mind that this means that you will often get the same sample played consecutively. To minimise this repetition, use more round robins! With 8 available layers, this method allows for up to 8 round robins per keygroup, but make sure you have the memory to support this.

By incorporating round robins you've increased the realism of the instrument – not only for repeated hits of the same note, but also when playing chromatic runs, which can sometimes sound artificial when it's the exact same note just pitched up in semitones.

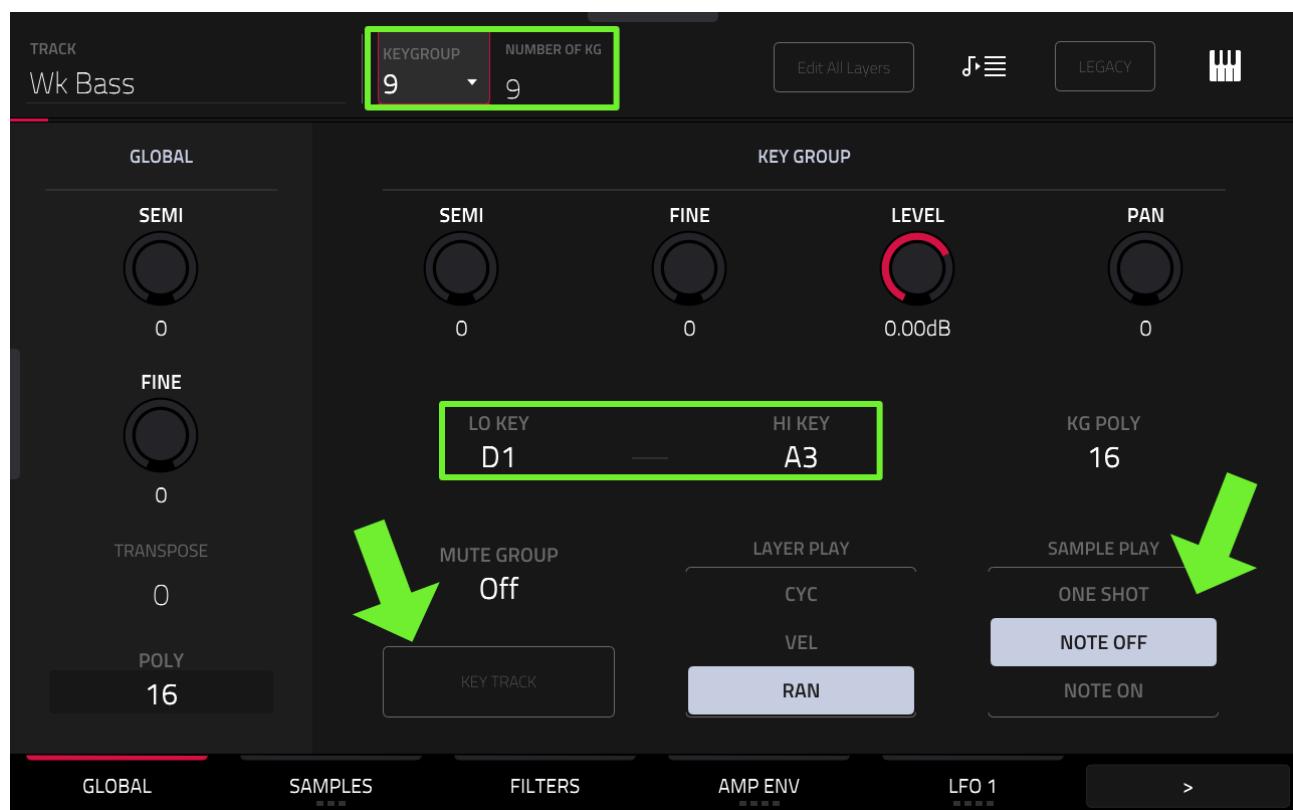
My version is in the **Instruments** folder, '**Wk Bass Round Robin.xty**'.

ADDING STRING RELEASES

Remember those string release noises that I said we'd use later? It's actually quite easy to implement these into our instrument.

From the top menu bar in **TRACK EDIT**, add an extra keygroup to our instrument, so change **NUMBER OF KG** to **9**.

Select **KEYGROUP 9** and go to **TRACK EDIT > GLOBAL**.



Set the **NOTE RANGE** to cover the entire instrument, **LO KEY: D1, HI KEY: A3**. Set **LAYER PLAY** to **RAN** for random layer playback.

Tap on the **KEYTRACK** button to turn off key tracking. This will stop the string release samples being 'tuned' up and down the keyboard. Instead, they'll retain the same pitch on each note within the instrument, which is appropriate behaviour for a percussive sound.

Finally change **SAMPLE PLAY** for this keygroup from **NOTE ON** to **NOTE OFF**.

Now go to **TRACK EDIT > SAMPLES** and assign the **Wk Bass 040 E1 nz1** sample to **LAYER 1, 2, 3 and 4**:



As key tracking is off, there's no need to set a ROOT NOTE. Now press and hold any note, let it begin fading out and when you release you'll hear your string release sample play. So as the name suggests, unlike NOTE ON and ONE SHOT, **NOTE OFF** keygroups only trigger when the note is *released* rather than when its initially triggered. It's perfect for adding release noises like this.

And with layer play set to 'RAN' you'll get a random noise playing on each release.

ADDING RELEASE NOISE PROBABILITY

If you'd prefer the noise samples to only play infrequently, we can just make a small adjustment to our keygroup. Basically 'random' layer mode will only play a random layer from *actively populated* layers in the keygroup. Currently, as layers 4 to 8 have no samples assigned they are completely ignored.

To stop these layers being ignored, go to the **TUNE/MIX** screen and hit the LATER 1-4 button to reveal layers 5 to 8. Assign the sample **Wk Bass 040 E1 nz1** to layers **5, 6, 7** and **8**, and all for these layers, set the **LEVEL** to **0** so they are 'silenced':

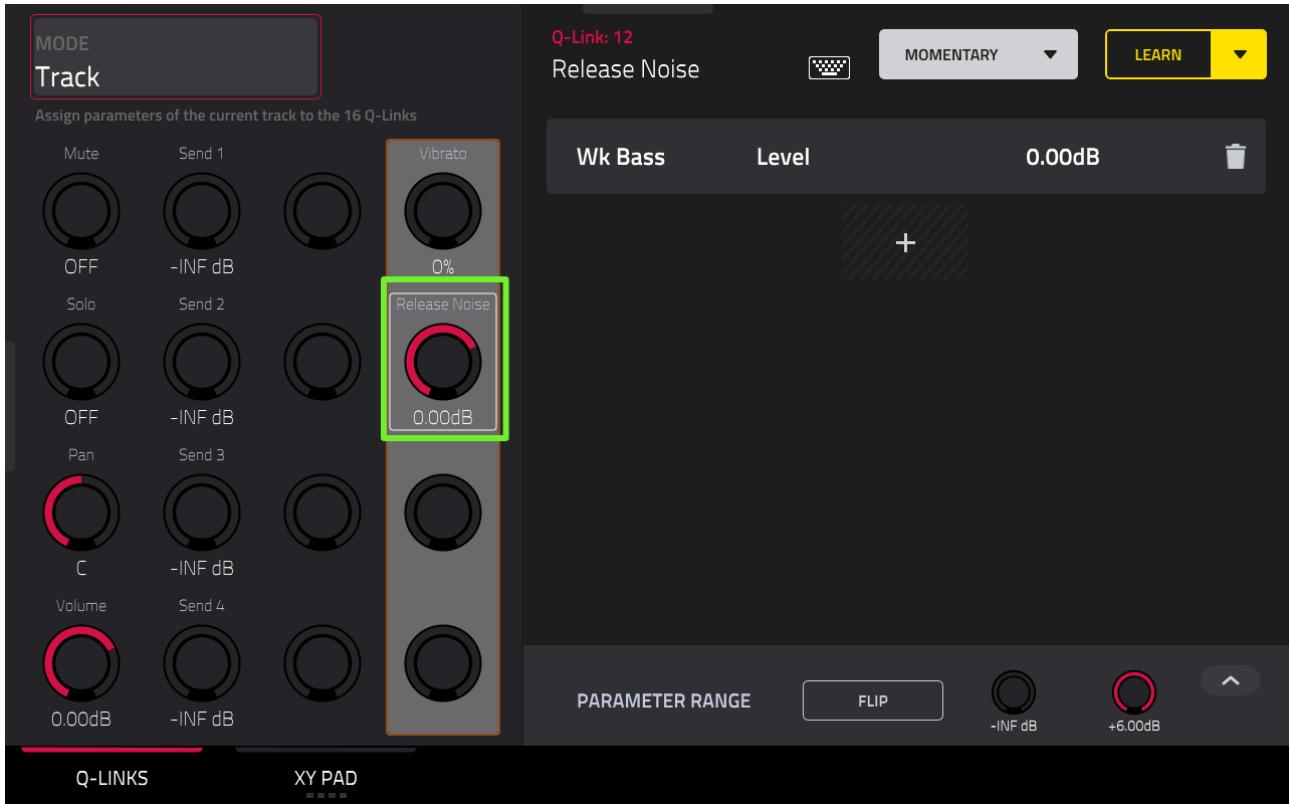


Now 'RAN' will also include these 4 silent layers in its 'pool' of random layers, which will effectively give us a **50%** chance of getting no release noise at all. And for the other 50% of notes, we'll randomly get a different noise sample from layers 1, 2, 3 or 4. You can adjust this to change the probability, for example, 5 silent layers and 3 active layers for a 37.5% chance of getting a note off string noise.

And it doesn't really matter which sample you put in the 'silent' layer, although possibly the shorter the better from a polyphony perspective, as I believe even silent samples will impact the available polyphony at any given time.

Finally hold down **[Q-LINK]**, select **TRACK** mode and hit **Q-LINK EDIT**:

C05: MULTISAMPLING NON MIDI INSTRUMENTS



Assign a macro to (Q-LINK 12) which targets **KEYGROUP > KEYGROUP 9 > Mixer > Level** and rename it '**Release Noise**'.

You now have a dedicated Q-LINK which controls the overall volume of your release noises. Load up my version from the '**C05 > Instruments**' folder, **Wk Bass Release Noises.xty**.

C06: ADDING LAYERS & COMPLEXITY

Let's revisit the chopped hook we've been working on in this section of the course and start building it into a more robust song theme by adding some additional textures and instrumental layers.

TOPICS COVERED IN THIS CHAPTER

- ✓ Adding additional layers to the theme
- ✓ Using the Mod Matrix
- ✓ Modulating with custom envelopes
- ✓ Understanding scales vs modes
- ✓ Using vocal pitch correction
- ✓ Creating custom plugin patches

ADDING AN ANALOG SYNTH LAYER

From the C06 folder, load up the project file '**C06 Layers.xpj**'. This contains all the tracks and instruments we've been working on so far In Section C (organised and renamed):

- 1: '**Piano**' Chopped DRUM track
- 2: '**Fisher King**' chopped DRUM track
3. '**Warning Pad**' keygroup track
4. '**Electric Bass**' keygroup track

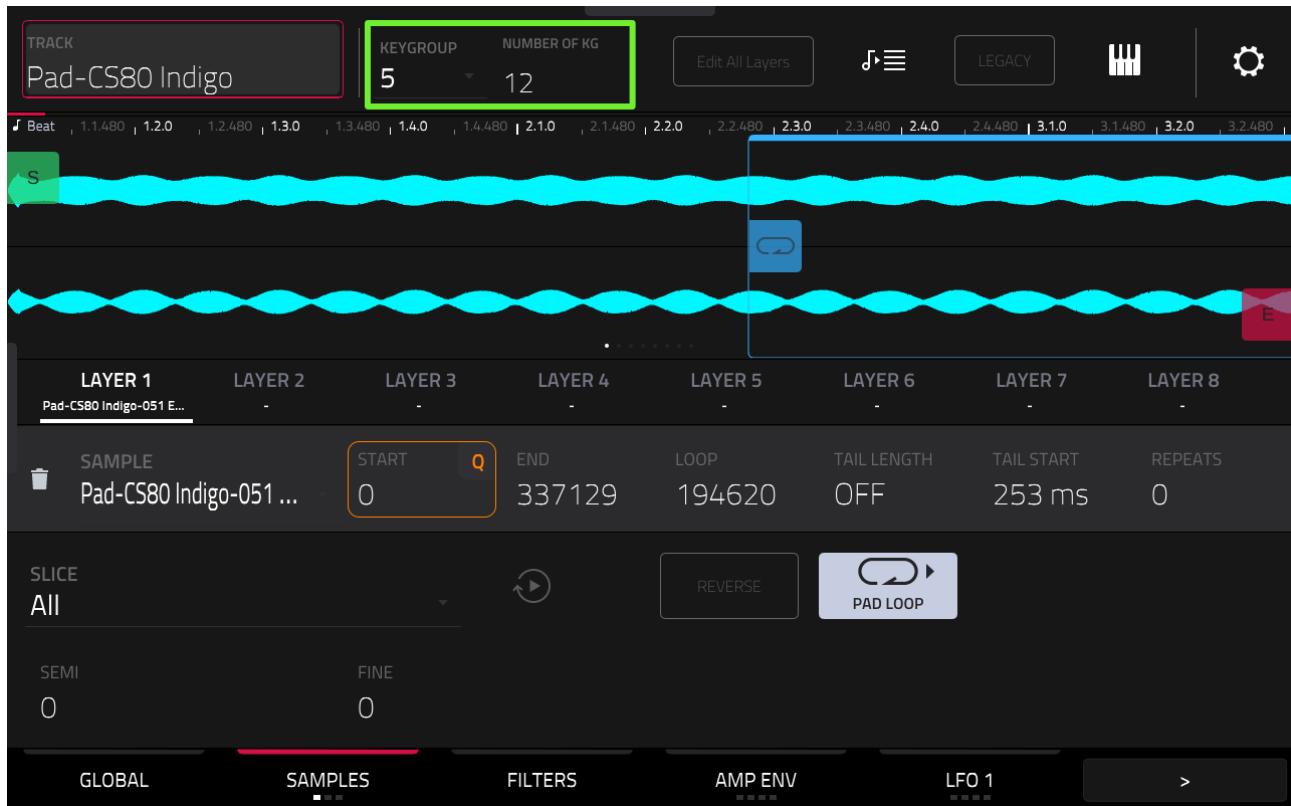
The first two tracks already have the existing 8 bar performances recorded on them, and for the moment I'm just going to leave tracks 3 and 4 without any MIDI while we look at adding some nice analog synth textures on a new track.

From the '**C04 > Instruments**' folder, tap on the '**Pad-CS80 Indigo.xty**' track file and **LOAD TO NEW TRACK**.

Take a listen, it's a lovely multisampled analog pad instrument with a nice rich tone but we can definitely add some more interesting movement to this. There is an FX rack in place already that is adding some delay and very subtle chorus, but let's see what we can achieve by using some advanced keygroup features.

Go to **TRACK EDIT > SAMPLES**:

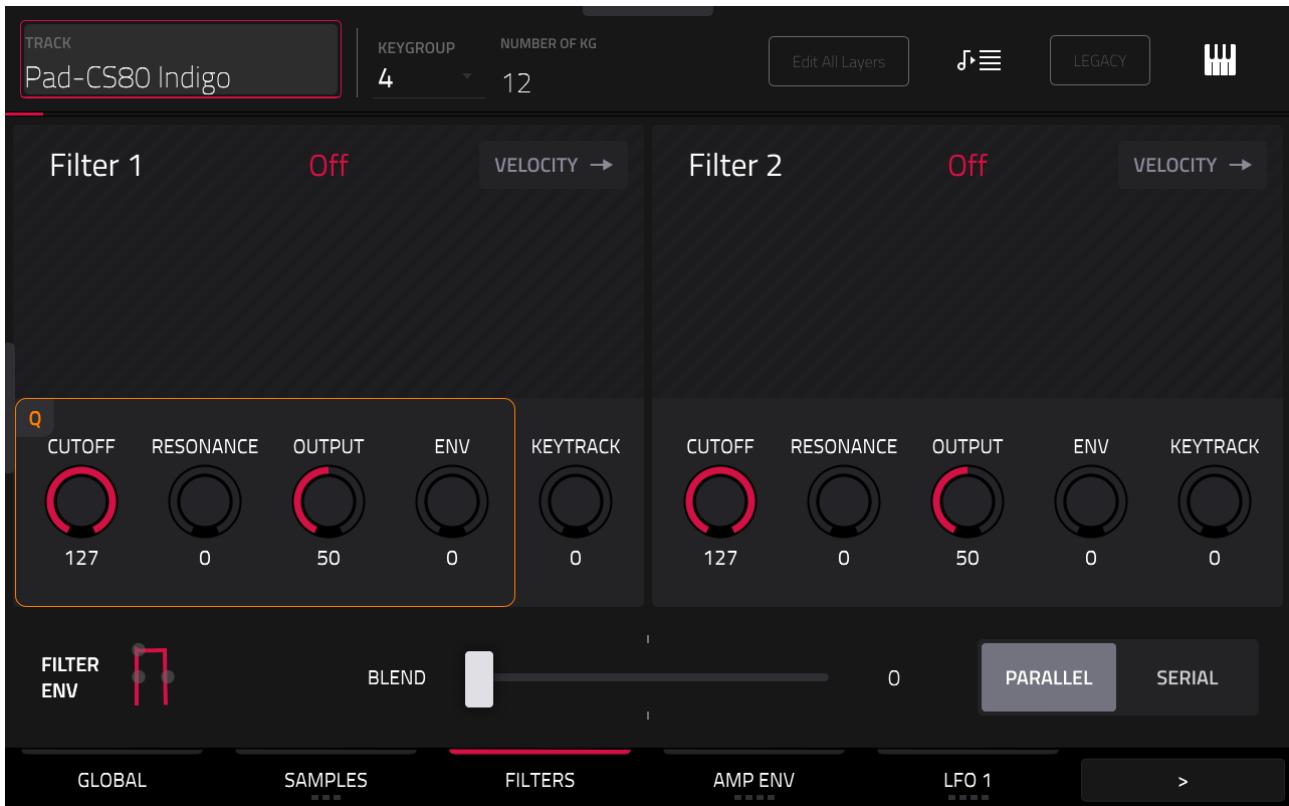
C06: ADDING LAYERS & COMPLEXITY



We have **12 keygroups**, each containing a single sample on layer 1. As you can see from setting **LOOP LOCK: OFF** (via the **GEAR** icon), each sample is already sustain looped.

Head over to **AMP:ENV** and you'll see there's just a basic shaped amp envelope that ensures that long tail after releasing, and a nice sustained volume level for that sustain loop.

Go to **FILTERS**:

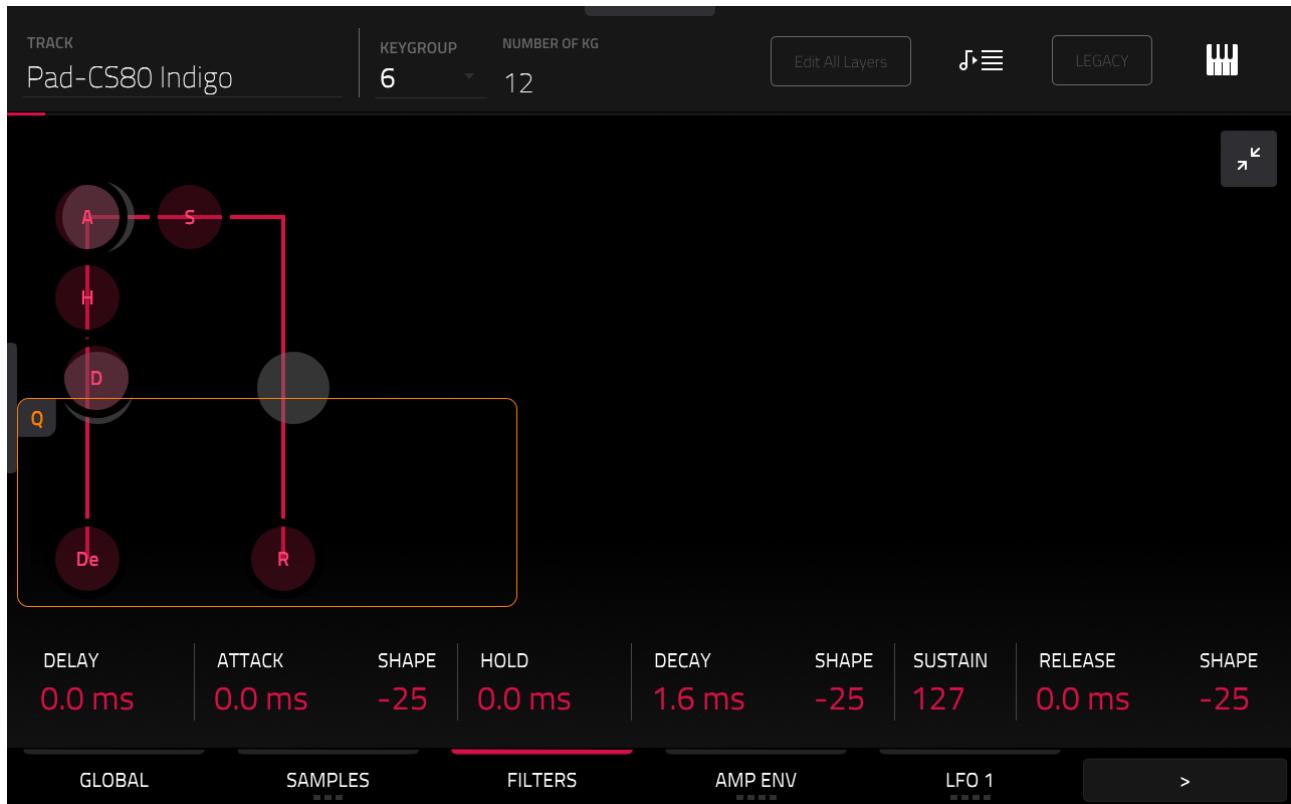


Currently, nothing to see here, so let's see what we can do with a couple of filters, two LFOs and a visit to 'the matrix'....

With **BLEND** set to **0** we can initially focus on **Filter 1**. Set this as a **Low 2** (2 pole, low pass filter) with a **CUTOFF:40** and **RESONANCE: 12**. As expected, this immediately wipes out almost all of the higher frequencies. Now set **ENV: 127**, which as we know from previous adventures, will send the filter to the filter envelope where it can be shaped over time. Tap on the **FILTER ENV** icon:

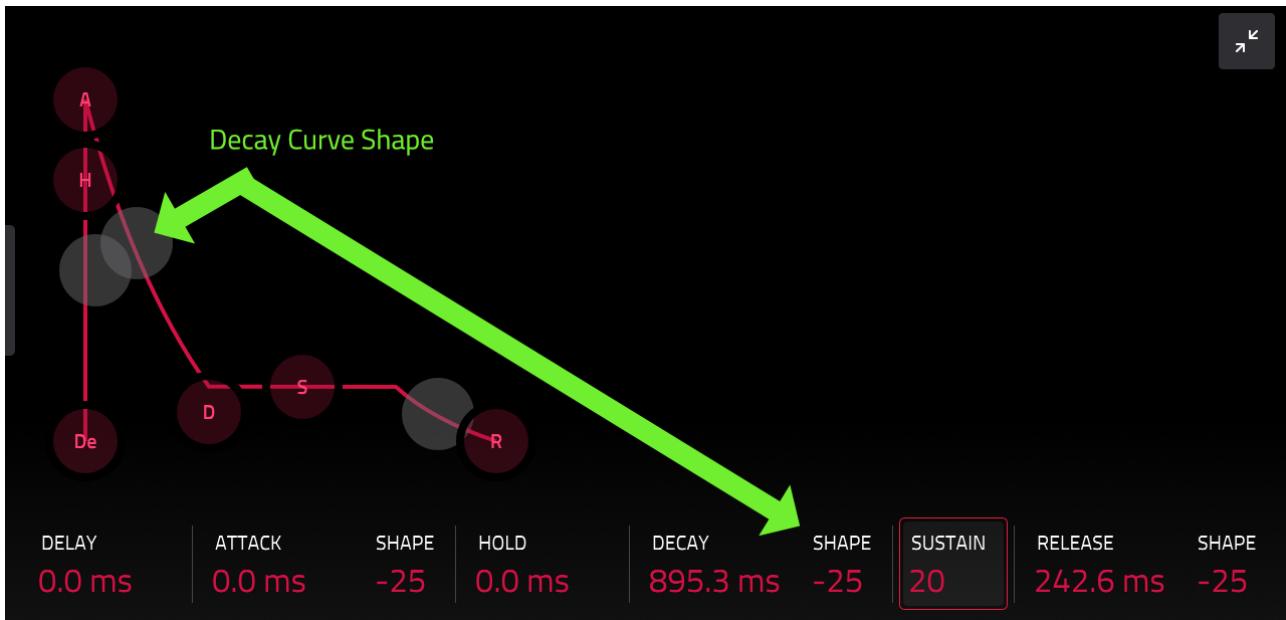


This opens the **filter envelope** screen.

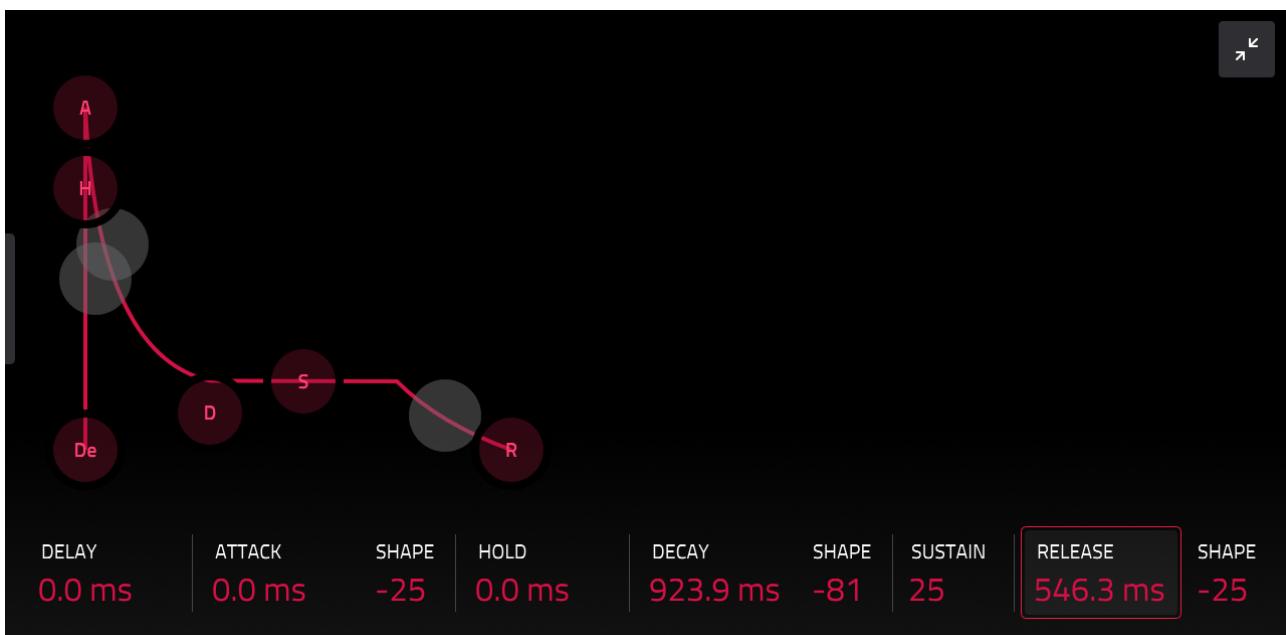


The default envelope, with **SUSTAIN** at maximum, allows all the signal through unfiltered until you release the pad. Here the **RELEASE:0** causes the filter to be immediately applied.

Set **SUSTAIN: 20** and **RELEASE:242 ms**. Now start to increase the **DECAY** to control how long it takes for the filter to drop down the new sustain level. Try **DECAY: 895ms**.



Let's change the shape of the **DECAY** curve using the **SHAPE** parameter. Set this to **-80** to create a more exponential and gradual decay. Now re-tweak each parameter to achieve your preferred blend:



Continually re-adjusting is definitely half the fun with these sound design explorations, as changing just one parameter (e.g. the decay slope) suddenly affects the way the entire envelope acts on the sound.

Close the envelope. Perhaps it seems like you didn't really do much to the overall sound here, so temporarily set **Filter 1: OFF** to hear the unfiltered version. As you can hear, the filter has created a more pulse-like pad sound, it's tighter and more compact sounding. Remember to set back to **Low 2** before proceeding.

Now set **BLEND: 100** so we can focus on **Filter 2** – set a type of **High4** (4 pole high pass) with **CUTOFF: 66** and **RESONANCE: 30**.



Now, let's add some movement to this filter. So far we've seen how the filter envelope is used to shape or 'modulate' the filter over time, but there's other methods we can use to modulate the filter (and other 'target' parameters).

INTRODUCTION TO THE MOD MATRIX

Tap on the **RIGHT ARROW** button in the bottom menu bar until the **MOD MATRIX** button appears. Click on **MOD MATRIX**:

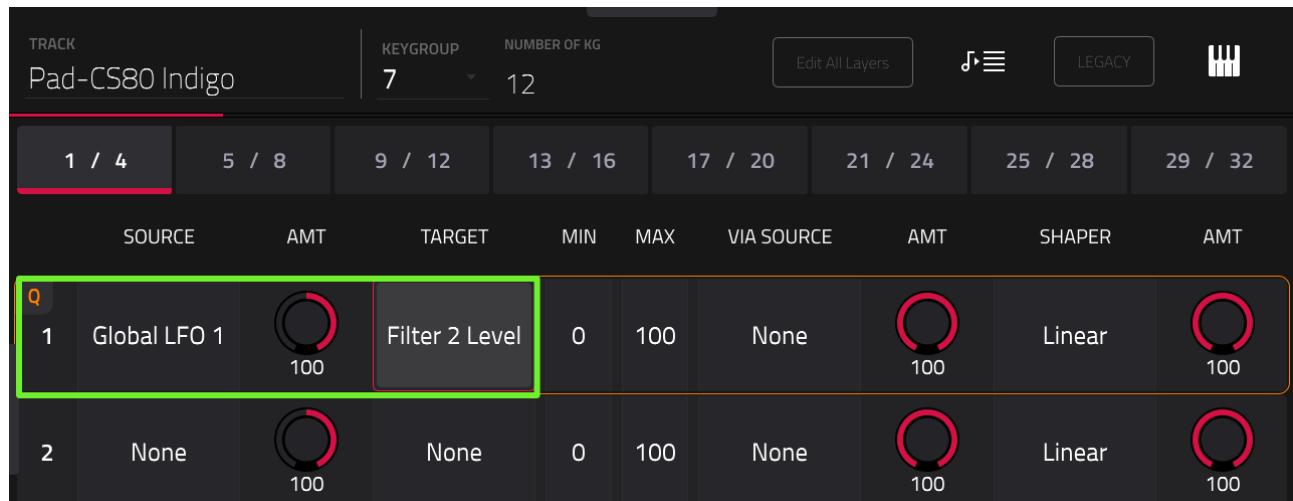
q	SOURCE	AMT	TARGET	MIN	MAX	VIA SOURCE	AMT	SHAPER	AMT
1	None	<input type="range" value="100"/>	None	0	100	None	<input type="range" value="100"/>	Linear	<input type="range" value="100"/>
2	None	<input type="range" value="100"/>	None	0	100	None	<input type="range" value="100"/>	Linear	<input type="range" value="100"/>
3	None	<input type="range" value="100"/>	None	0	100	None	<input type="range" value="100"/>	Linear	<input type="range" value="100"/>
4	None	<input type="range" value="100"/>	None	0	100	None	<input type="range" value="100"/>	Linear	<input type="range" value="100"/>

The **MOD MATRIX** allows you to configure modulations of many different parameters within a keygroup instrument. We've previously used the LFO to modulate various fixed 'destinations', specifically we modulated the

pitch of our electric bass notes using a sine wave to create vibrato. Here the sine wave created a smooth up and down continual change in pitch.

In the mod matrix we are not limited to modulating a set of pre-determined 'destinations' (targets), nor are we limited to modulating with a small selection of waveforms. Instead we are able to set up custom '**targets**' that are modulated by any number of custom '**sources**'. These modulation sources can be the usual familiar waveforms (sine, triangle, square waves, etc) but we can also choose other sources, including custom shaped envelopes.

Let's set up a practical example. In the '**T**' row (**modulation point 1**), tap on the **SOURCE** and set this to **GLOBAL LFO 1**. Now set the **TARGET** to **Filter 2 Level**.

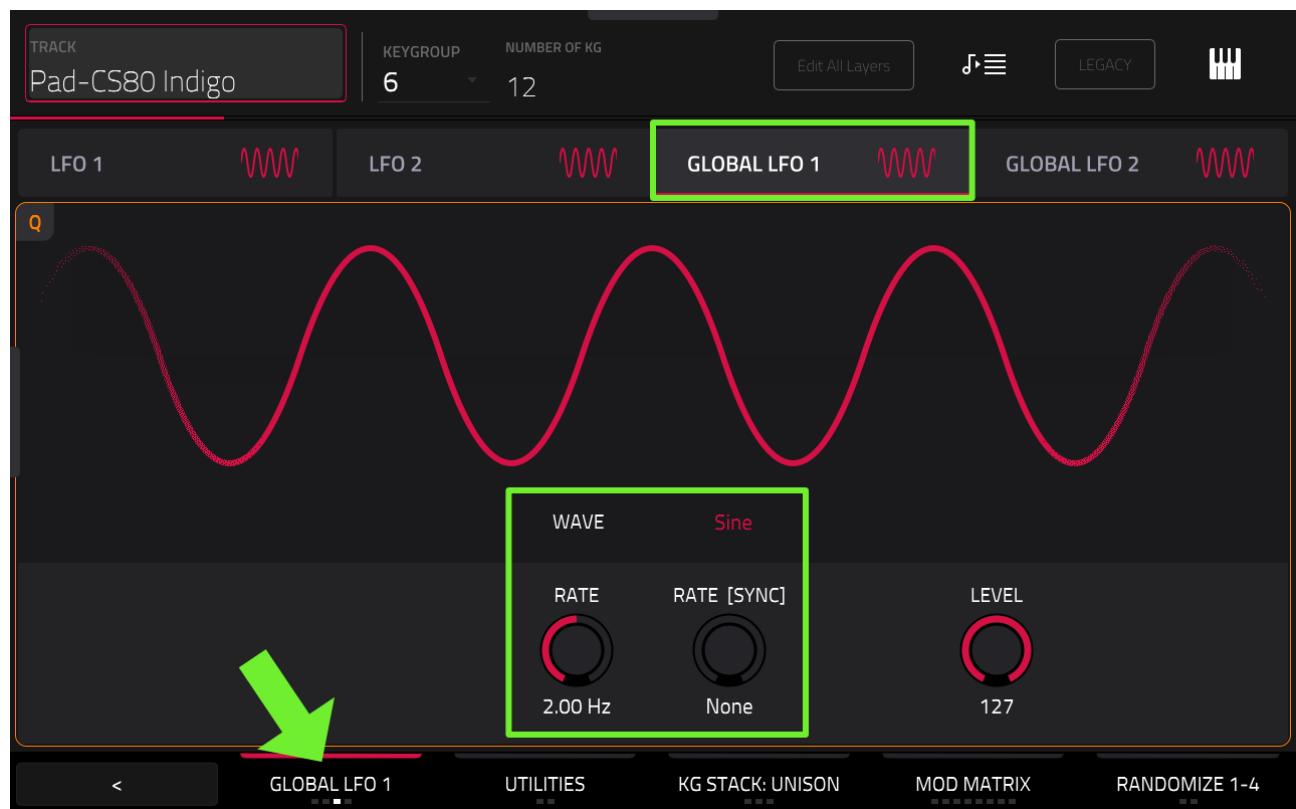


Hit some pads to hear the result. You should hear the volume level of filter 2 pulsating in a continuous manner; here the **Global LFO 1** is modulating the volume of **Filter 2**.

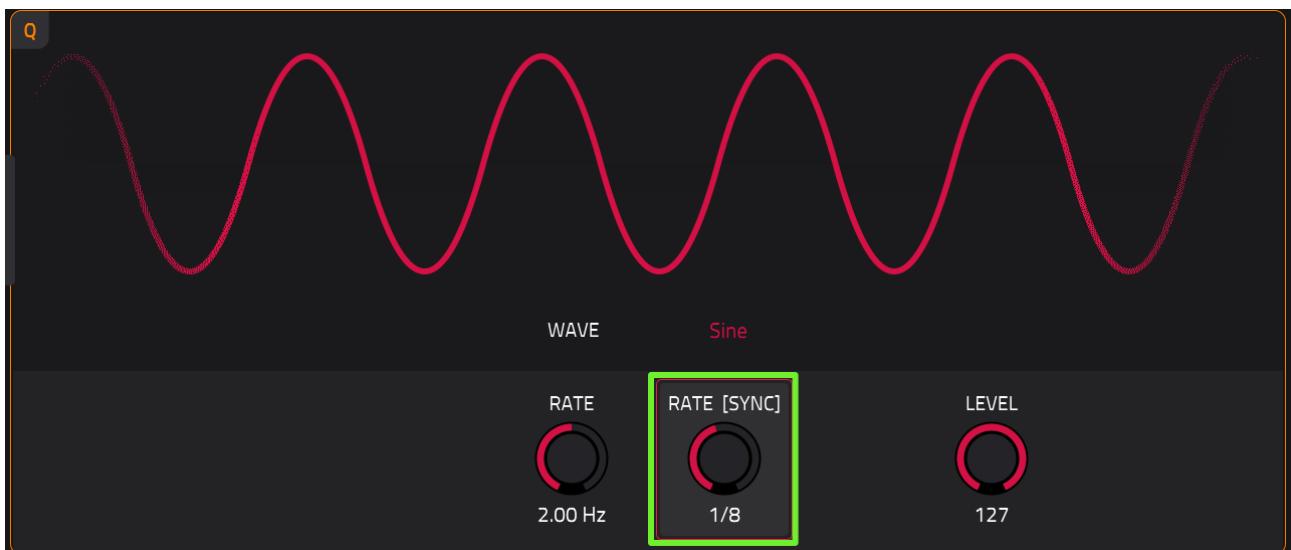


A global LFO is shared across all voices within a project to ensure all instruments are modulated at the same rate and waveform- for example, configure the global LFO with a 1/16th sine wave and that wave will oscillate continually across all voices, so when the wave peaks, it peaks for all voices. On the other hand, LFO1 and LFO2 (as used to create vibrato in the multisampled bass instrument) are 'per voice' LFOs which independently act only on the currently triggered voice/note.

Press the **LFO 1** button in the bottom menu bar to enter the **LFO** screen and tap on **GLOBAL LFO 1**:



This controls the waveform used in Global LFO 1 – it's a Sine wave running at 2kHz. Set the **RATE (SYNC)** to **1/8**:



Preview some notes so you can hear how the filter level is being modulated in sync with our sequence.

Back in the **MOD MATRIX**, select the **TARGET** again and turn the (DATA WHEEL) anti clockwise to select **TARGET : Cutoff 2**. Now the Global LFO 1 is modulating the **Filter2 'Cutoff'** parameter rather than the overall filter level, giving a very different result.

You can use the **AMT** dial to control the overall amount of modulation applied by Global LFO 1, while the **MIN/ MAX** parameters control the range of Cutoff values allowed. Try this for a nice gentle amount of filtered movement:

C06: ADDING LAYERS & COMPLEXITY

SOURCE	AMT	TARGET	MIN	MAX	VIA SOURCE	AMT	SHAPER	AMT
1 Global LFO 1	20	Cutoff 2	60	73	None	100	Linear	100
2 None	100	None	0	100	None	100	Linear	100

There are 32 unique modulation points available in the MOD MATRIX, so it's possible to configure some very complex modulation routings. Let's add another modulation; in **modulation point 2**, add **Global LFO 2** as the **SOURCE**, a **TARGET: Pan** and an **AMOUNT: 50**.

SOURCE	AMT	TARGET	MIN	MAX	VIA SOURCE	AMT	SHAPER	AMT
1 Global LFO 1	20	Cutoff 2	60	73	None	100	Linear	100
2 Global LFO 2	50	Pan	0	100	None	100	Linear	100

Head back to the **LFO** screen and select **GLOBAL LFO 2** and set up a Triangle wave with a **RATE: 1/2**:



Now we have a slow, pulsating panning motion, which, due to the triangle wave, is 'sharper' sounding compared to a sine wave. Using the mod matrix we are able to apply two different modulations acting at different rates.

Head back to the **MOD MATRIX** and tweak the settings to taste:

SOURCE	AMT	TARGET	MIN	MAX	VIA SOURCE	AMT	SHAPER	AMT
1 Global LFO 1	<input type="range" value="16"/>	Cutoff 2	50	73	None	<input type="range" value="100"/>	Linear	<input type="range" value="100"/>
2 Global LFO 2	<input type="range" value="50"/>	Pan	0	100	None	<input type="range" value="100"/>	Linear	<input type="range" value="100"/>

As is often the case, less is more and it's always good practice to 'back off' your settings to avoid being too overeager with your newly discovered toys!

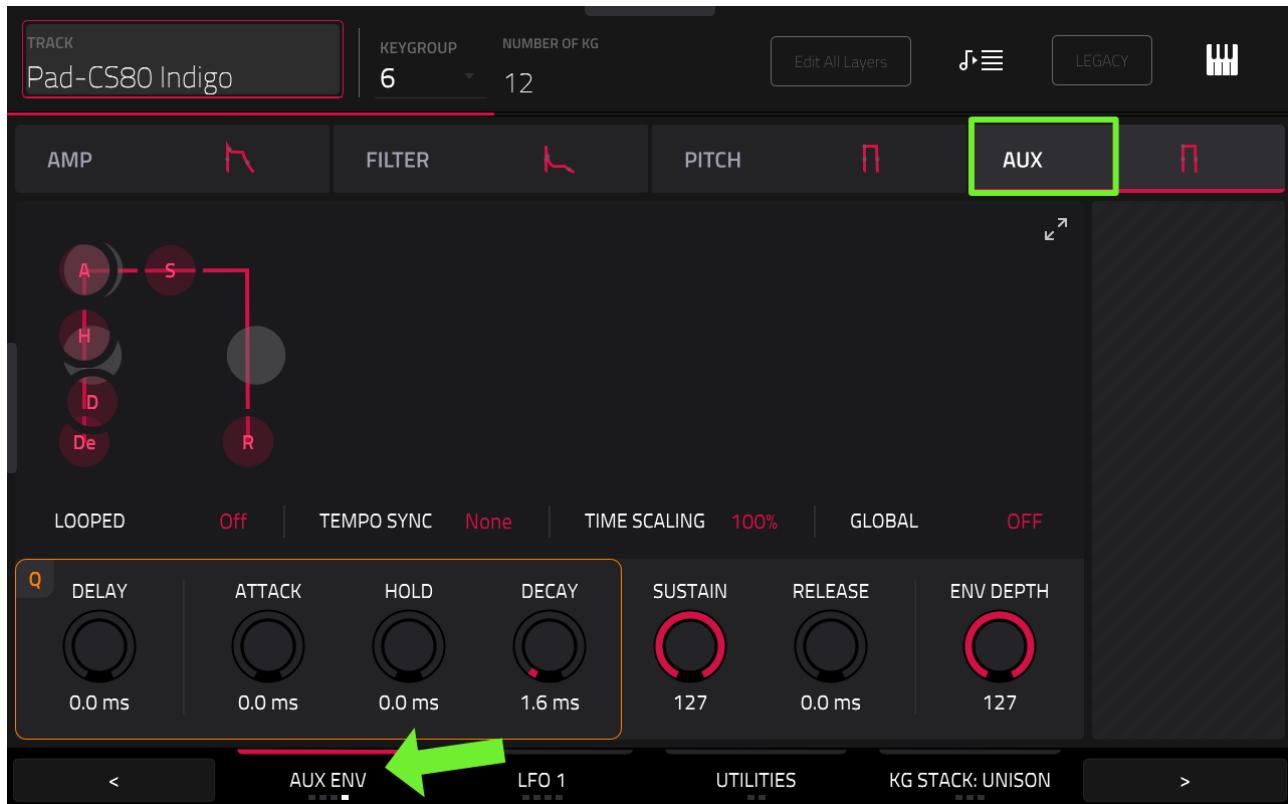
MODULATING WITH THE AUX ENVELOPE

We're not just limited to modulating with LFO waveforms. First, go to the **FILTER** screen and set **BLEND** to **0** so only Filter 1 can be heard. Now head to **MOD MATRIX** and in modulation **POINT 3**, set **SOURCE: Aux Env** and **TARGET: Filter Blend**

	SOURCE	AMT	TARGET	MIN	MAX	VIA SOURCE	AMT	SHAPER	AMT
1	Global LFO 1	16	Cutoff 2	50	70	None	100	Linear	100
2	Global LFO 2	22	Pan	0	100	None	100	Linear	100
3	Aux Env	100	Filter Blend	0	100	None	100	Linear	100
4	None	100	None	0	100	None	100	Linear	100

With the modulation target set as 'Filter Blend' we're going to be able to modulate the 'BLEND' of our two filters over time – from a **MIN** value of **0** to a **MAX** value of **100**. To shape how that blend occurs we'll use a special envelope called the **Auxiliary Envelope**.

Go to **AMP ENV** and hit the **AUX ENV** tab (or press **AMP:ENV** four times):



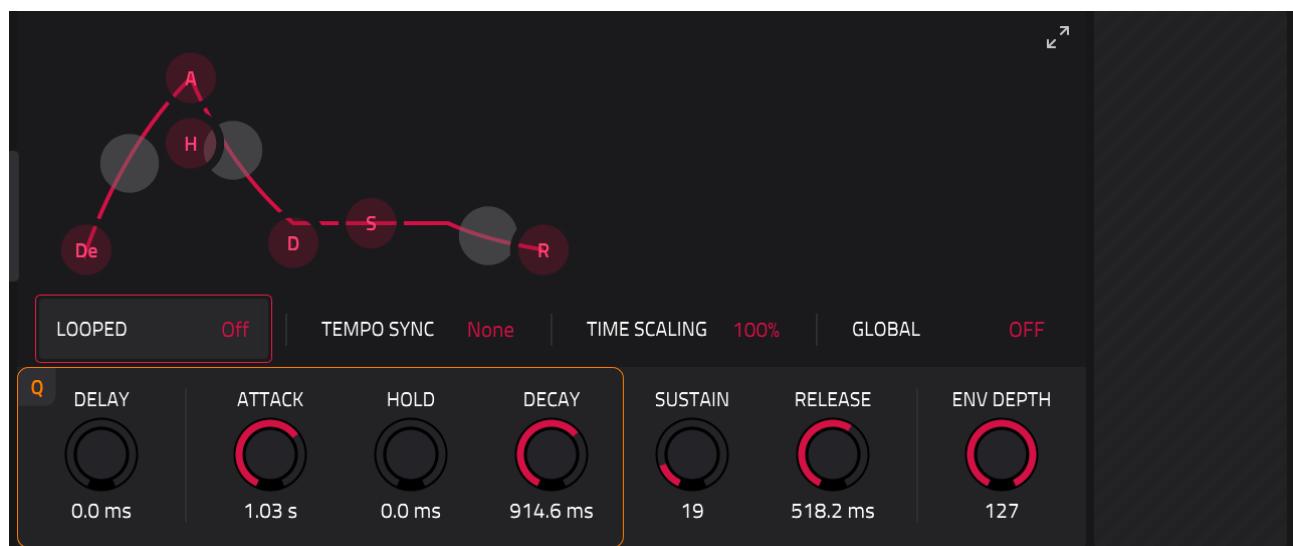
The **auxiliary envelope** is a 'spare' envelope that can be used to create a customised envelope shape which in turn can be used within the MOD MATRIX as a modulation source.

Currently our filter BLEND is set to 0 so normally all we would hear is the Filter 1 in action, but with the blend now being modulated by the Aux Env, when we press and hold a pad, the maximum SUSTAIN level in the envelope is pushing the BLEND to 100, hence only Filter 2 is acting.

When you release the pad, the **0 RELEASE** causes the **SUSTAIN** to immediately drop to **0** which in turn modulates the BLEND down to **0** – now you only hear **Filter 1**.

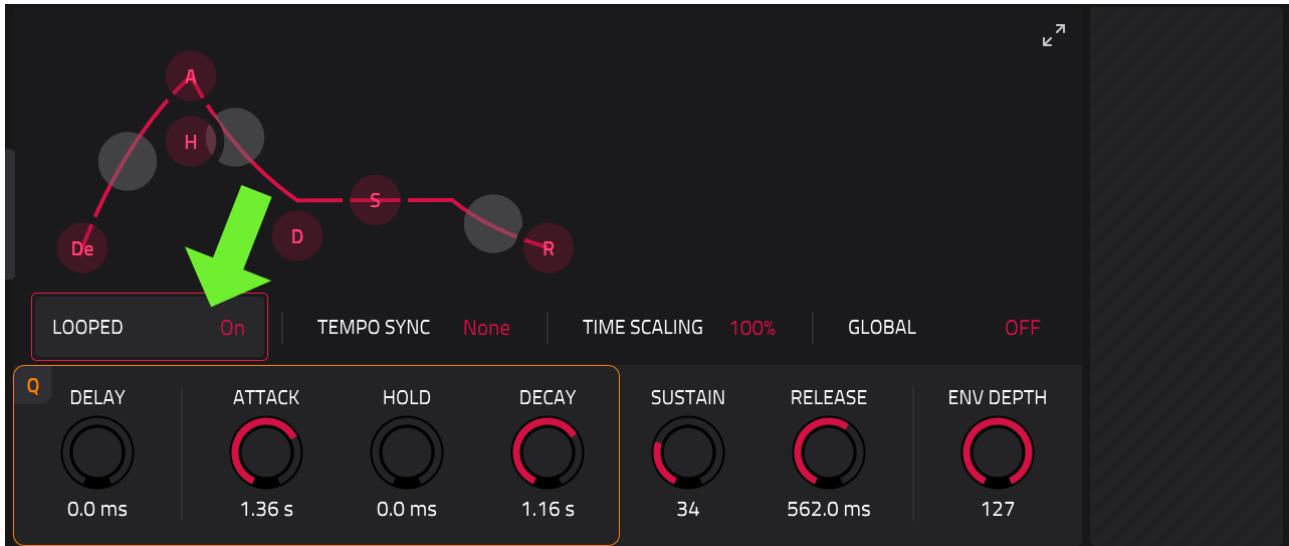
Set an **ATTACK** of around **1.36s** and press and hold a pad. In those 1.36 seconds you can now hear the BLEND move from 0 to 100. A **RELEASE** of around **560ms** will smooth that sudden drop from filter 2 to filter 1.

Finally set the **SUSTAIN** to **34** with a **DECAY** of around **1s** to smooth out the drop down to the final sustain level:



Press and hold and we have quite a complex, moving pad sound full of interacting textures, with one filter modulated through its own envelope, another filter modulated by an LFO, a global panning modulation and a customer shaped envelope modulating the blend of the two filters!

Another interesting feature of the amp envelope is the ability to *loop* the envelope itself. Just set **LOOSED:ON**:



Now when you press and hold a pad you'll hear the aux envelope blend modulation continually repeating in a loop. You can even set a TEMPO SYNC if you wish to repeats to sync in time with the sequence.

At this point, hit **[PLAY START]** and listen to the pad in context of your existing hook. Take this opportunity to re-adjust and tweak all the parameters until you hit a sweet spot.

At this point, take look at the track insert FX, either via **MAIN > XL CHANNEL STRIPS** or via the **CHANNEL MIXER**. I've configured AIR Stutter quite subtly:



This is in combination with the **AIR Delay** with some lush wide stereo feedback:



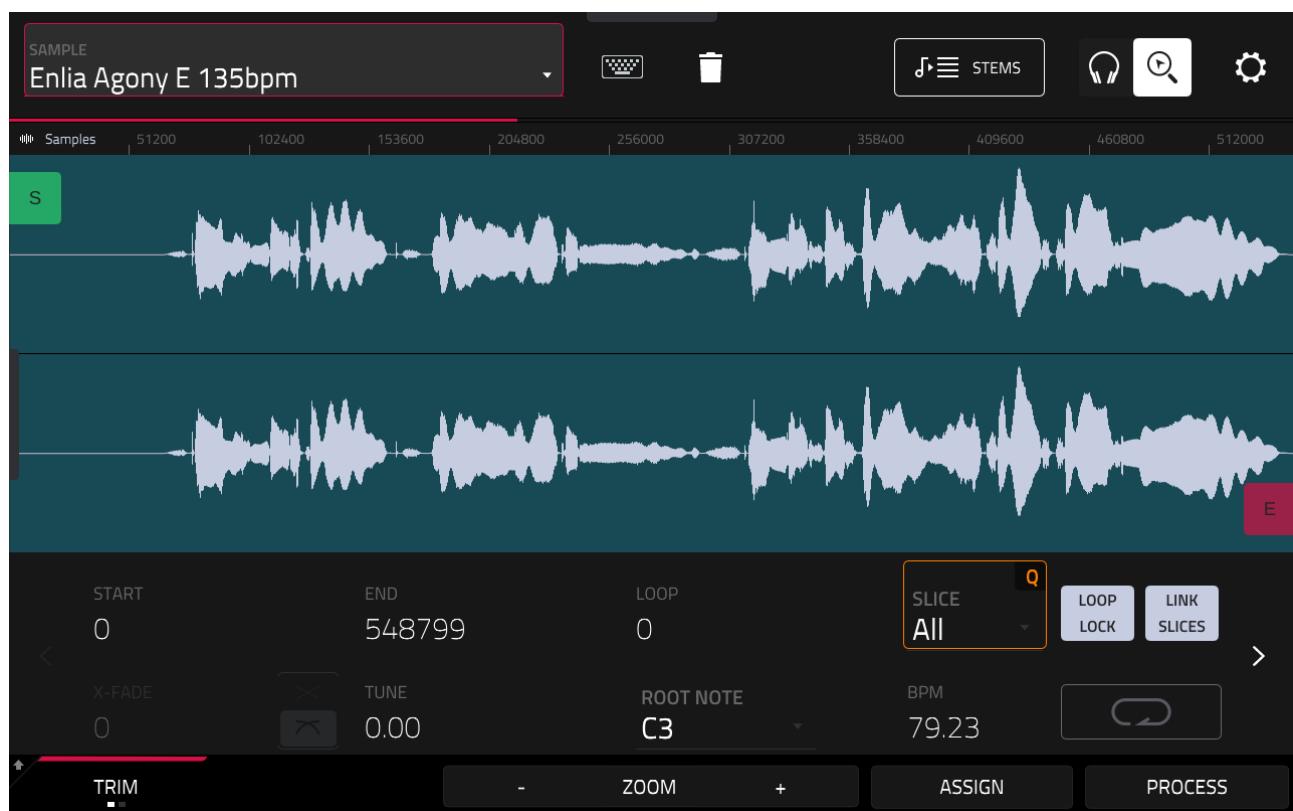
Experiment with this pad to see how it can be incorporated into the theme. The piano chops are showing as the key of 'C' so I set **PAD PERFORM** to **C Major** and **NOTES** mode.

Load up **C06 Layers Indigo.xpj** for my version. Here I've used the Indigo pad to add some more additional texture and a very subtle melody. I've also done the same with the **Pad-MF Warning** track (track 3), just subtle extra textures to add more depth and interest. I've added a quick level and pan tweak for both these tracks as well, just to help them sit a little more comfortably in the mix.

ADDING A VOCAL

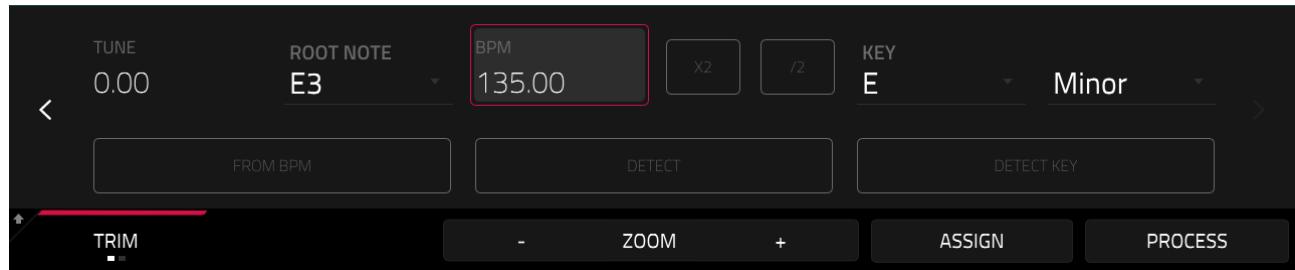
In the **BROWSER**, select the sample '**Enila Agony E 135bpm**' and **LOAD TO POOL**. This is a vocal sample freely available under Creative Commons Licensing (details in [Appendix C](#)). Enila has been kind enough to include all tempo and key information in the file name so that's going to save us a lot of hassle!

Head to **SAMPLE EDIT > TRIM** and select the new sample:



So from the information given in the file name, this sample is in the key of '**E**' and is **135 BPM**, let's simply tell the MPC so we can avoid any suspect

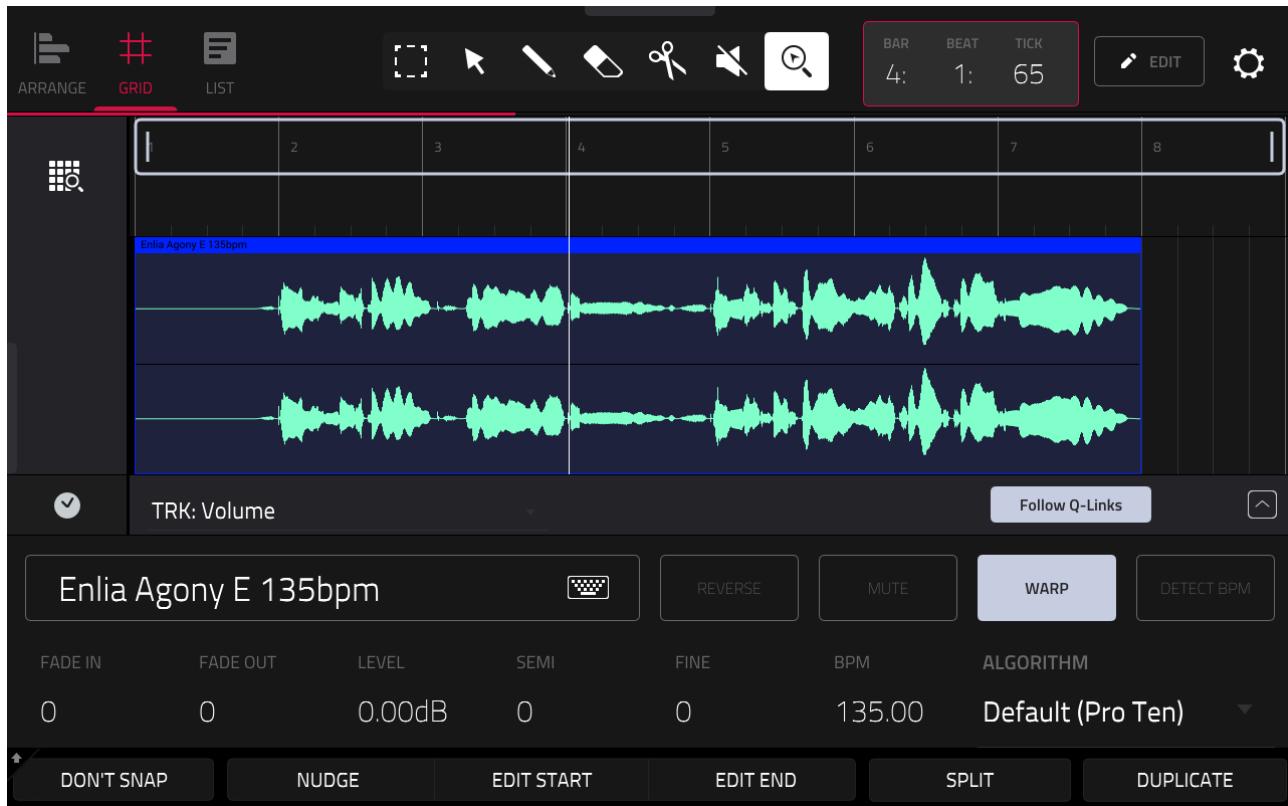
detection algorithms! Tap on the right arrow in TRIM to reveal the '**DETECT**' screen. Enter all the information that we know:



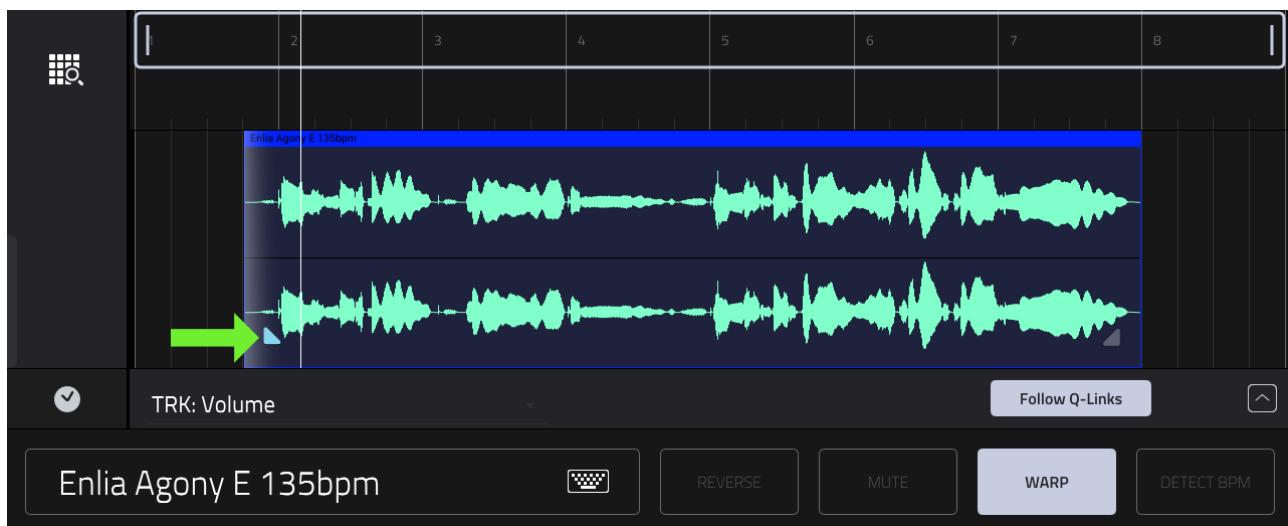
The ROOT NOTE isn't strictly something we need to update and this is not a single musical note, but I'm going to put the 'E' in there anyway. At this stage I really don't know if this is E major or E minor, but it sounds sad, so will just put E Minor (it's not going to change the way the MPC handles the sample).

Go to [**MAIN**], + **NEW TRACK** > **AUDIO**, rename to '**Vocal**' and in **EDIT AUDIO** insert the 'Enila Agony' file (the space at the start of the file was included in Enila's original download).

C06: ADDING LAYERS & COMPLEXITY



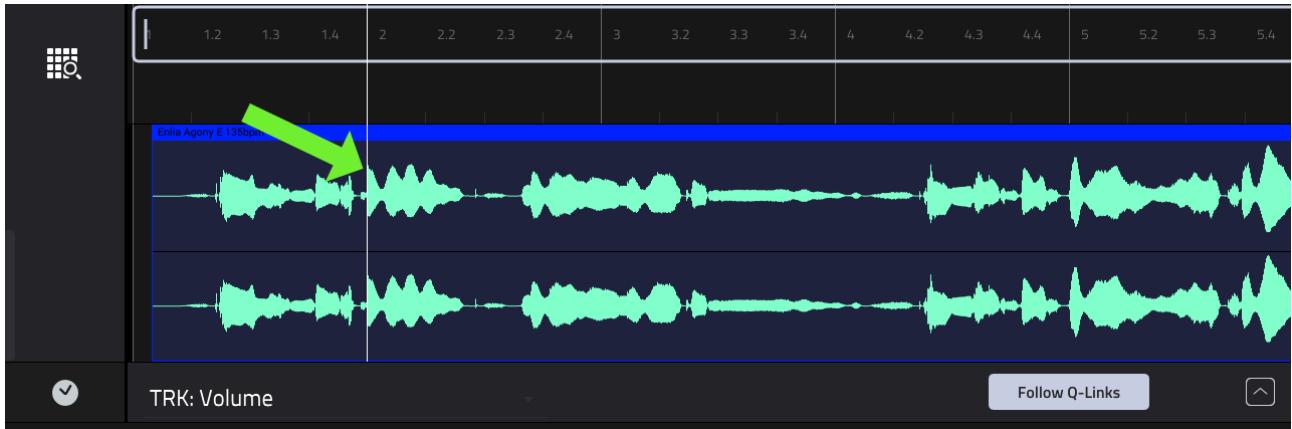
With the **select tool**, hold and drag the bottom half of the start of the audio region to get rid of most of the empty space at the start.



Now hold and drag in the top part of the region and drag it nearer to the start of the track. Hit [PLAY START] and nudge the region around until the vocal starts roughly in the correct place.



As we set the **BPM** in SAMPLE EDIT and all imported samples are warped automatically on an audio track, the vocal should be at the correct 79.02 BPM tempo. The word 'stand' (from 'understand') should fall on the start of bar 2.

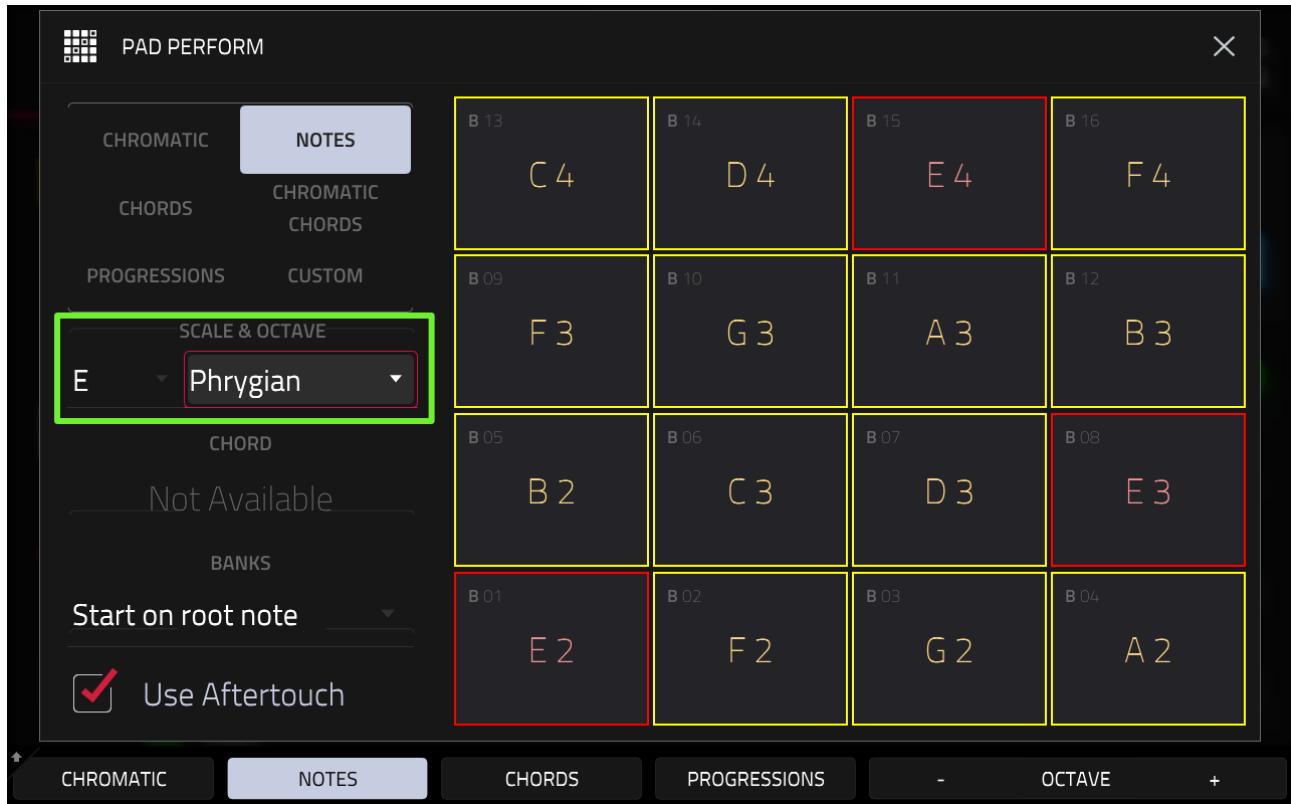


So immediately there's a few things to note. It's loud and dry so it definitely needs some quick mixing to get it playing nicely with everything else in the sequence. It's also heavily warped (135bpm down to 79bpm), but I think we can make this work even though it sounds a bit slowed down and has some artefacts.

SCALES VS MODES

Another issue is of course that this is apparently in the key of 'E'. Now here's the thing, if you temporarily pull up any plugin on a spare track and try to play along to the melody line that she's singing here (I used Hype > Piano > Warm Stack, but you could use any 'simple' patch sound from any plugin), the only notes used are E, A, G and B. It's definitely seems to be in 'E', but these notes also fit into a C major scale.

We know a C major scale is C, D, E, F, G, A, B, (the white keys on a keyboard) but we can also start the scale at a different note; this is called a 'mode' and it gives those same notes a very different feel - if we start it on 'E' we have a scale of **E**, F, G, A, B, C, D. This is called the **E Phrygian** mode, and it's actually a 'scale' available in PAD PERFORM:



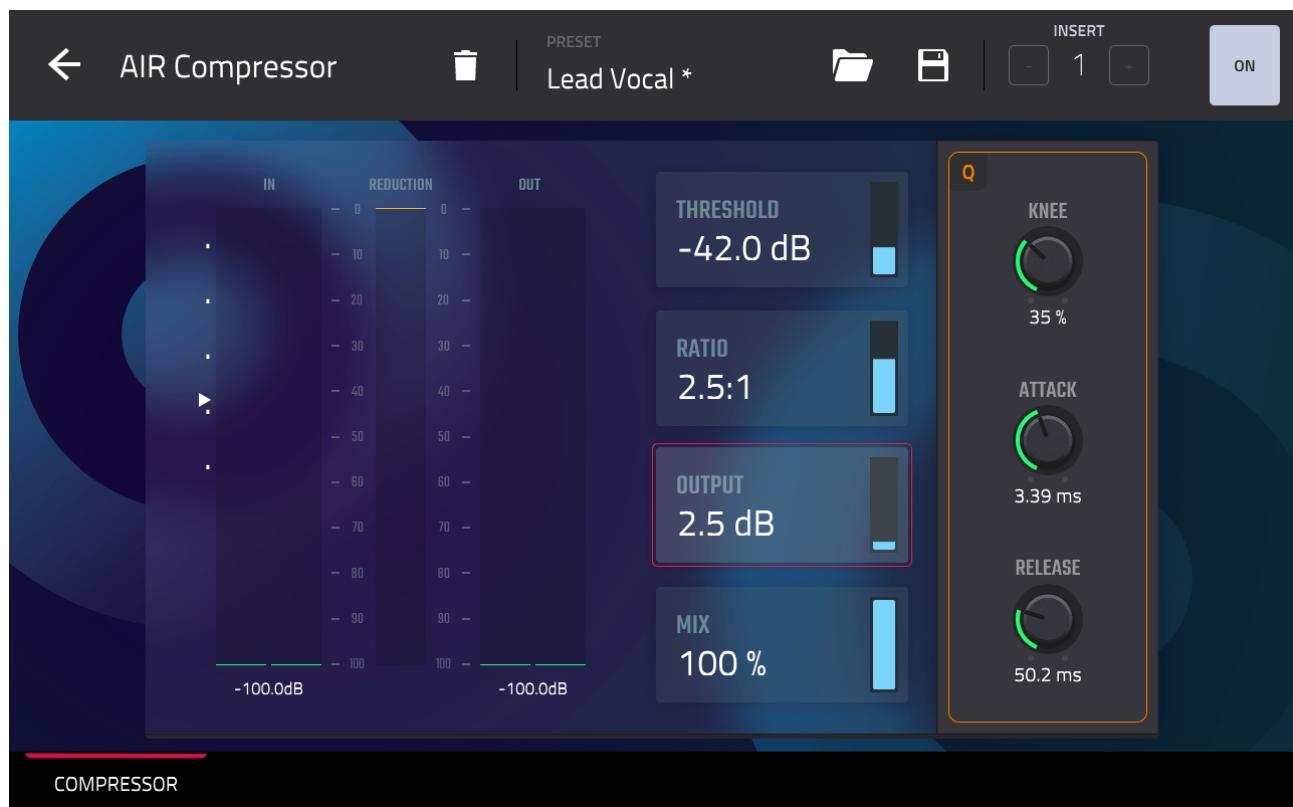
You can see, it's the same notes as a **C Major**. We don't really need to know about music theory just to bash our pads along to a vocal, but hopefully you can see that as long as pad perform is configured to either of these scales then we're good to go.

So while the vocal is stated as being in 'E', I would definitely believe that this is likely '**E Phrygian**', so 'C major will still give you the same playable notes in Pad Perform. Which is handy, as the Piano Chops and Fisher King chops are also both in 'C'!

Finally, one other issue is that the vocal is perhaps a little 'flat in places, so it doesn't quite sound right (but we can easily fix this).

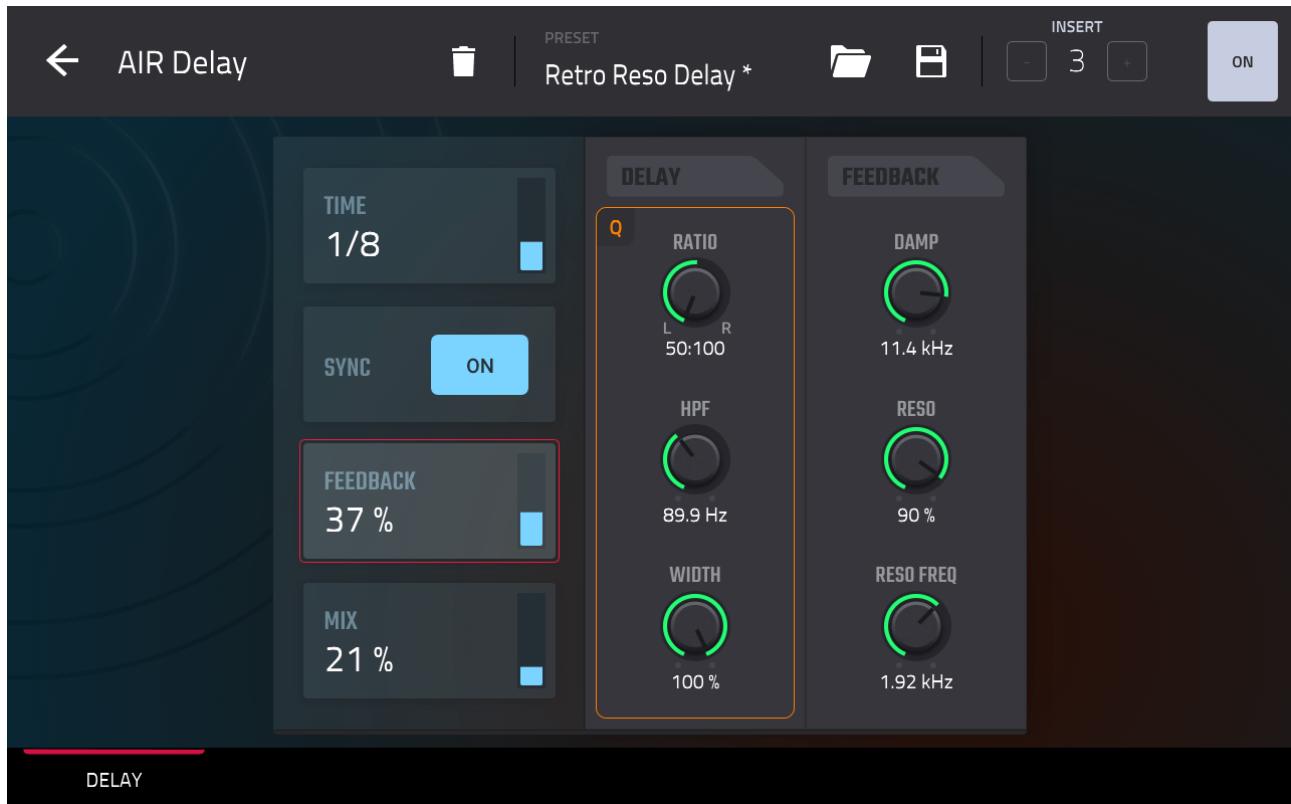
In [MAIN] select the **Vocal** track, open the **XL CHANNEL STRIPS** and go to the FX inserts screen. From there load the **Vocal FX Rack.xfx** rack from the **C06** folder.

So, first we have an **AIR Compressor**:



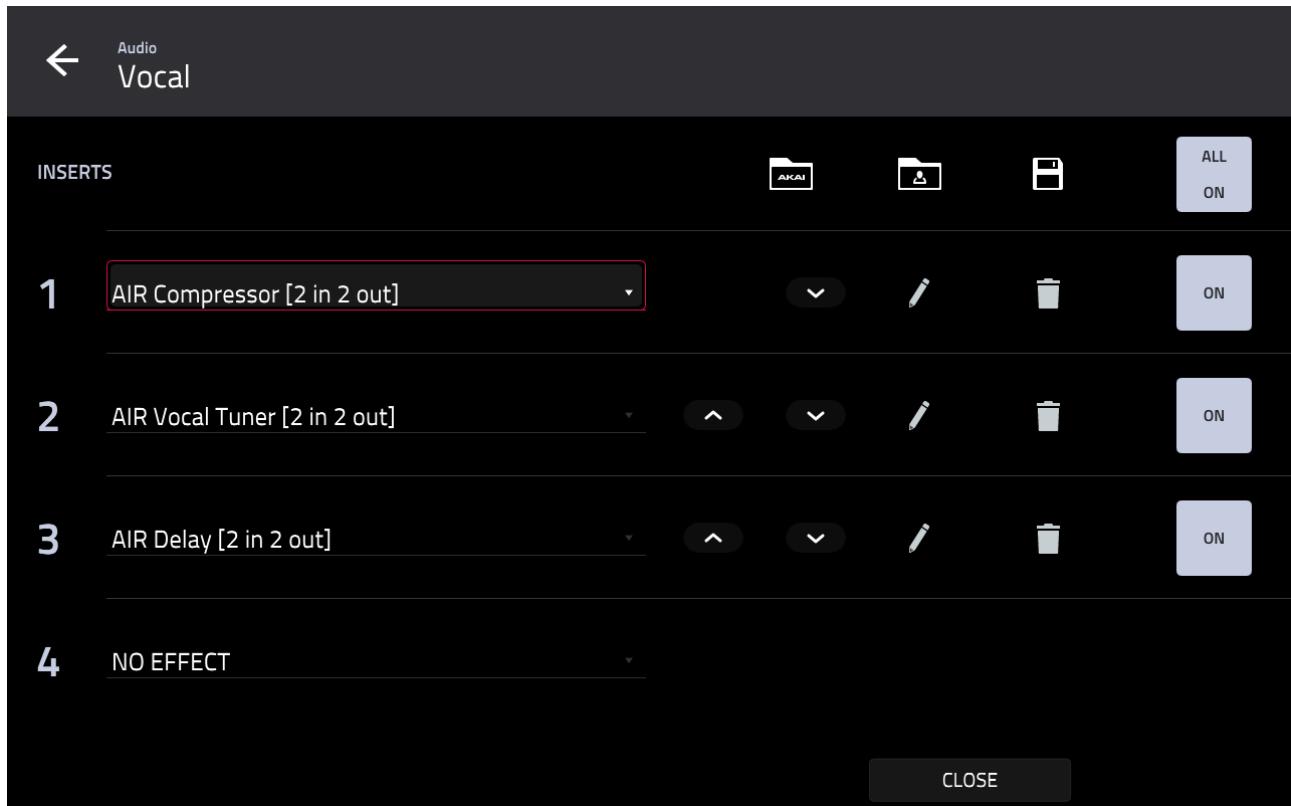
This is here to even out the vocal dynamics and give the vocal more presence, with a medium attack and release to keep the vocal sounding natural, combined with a fairly strong compression ratio to give it a good 'squash'.

The **AIR Delay** is providing the ambience, notably with a hefty amount of filter resonance on the decay tail to give it extra character.

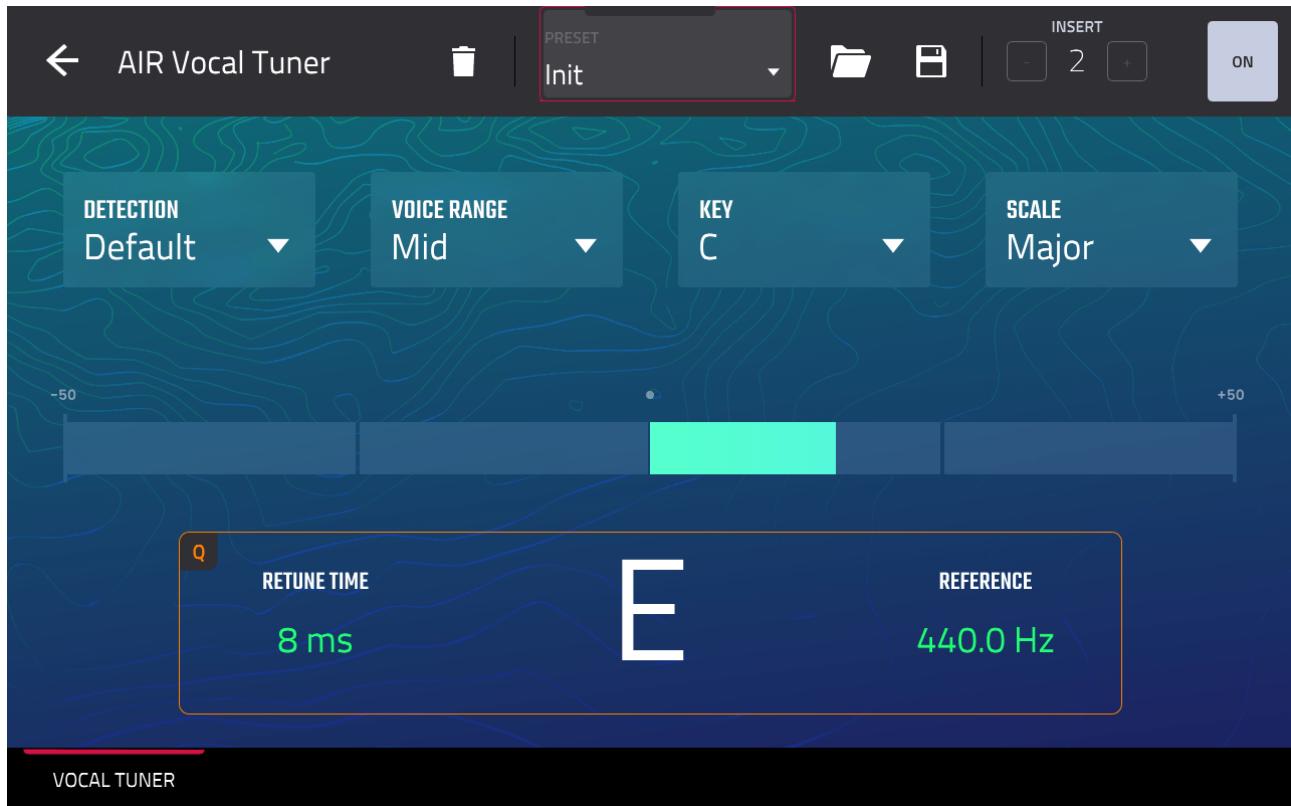


FIXING VOCAL PERFORMANCES WITH THE VOCAL TUNER

The plugin I really want to look at here is in **INSERT SLOT 2**, so first re-enable it:



This is **AIR Vocal Tuner** and its primary job is to try to 'fix' out of tune vocals – however, it's also used as a special effect, especially when used with more extreme settings.



Now the default settings are actually not too bad for our particular use. Currently the plugin is using the **C Major scale** to tune the vocals to 'concert pitch' (**REFERENCE: 440.0Hz**). When it comes across each note in the vocal it effectively tries to 'quantize' the pitch of the vocal to the nearest note within the select scale. So if it's a slightly flat 'C', it gets tuned up slightly to concert pitch C.

I assume the **VOICE RANGE** is referring to the general range of notes used in the overall vocal performance. I'd say this is either a Mid or High vocal. In fact trying both here makes no difference to my ears.

Hit [**PLAY START**] and you should hear that the vocal is immediately improved, there's no flat notes at all. What you should notice is that when the MPC is pitch shifting a note, there are times when it's very obvious,

with distinct 'steps' as the note is pitch quantised to the nearest C Major note. A really obvious one is 'why' in the phrase at the start of bar 5, 'and this is why...'.

Noe you may like this 'autotune' effect, but if you want something more natural, you'll need to increase the RETUNE TIME parameter. Watch out though - too long and the MPC won't 'retune' fast enough to make any noticeable difference.

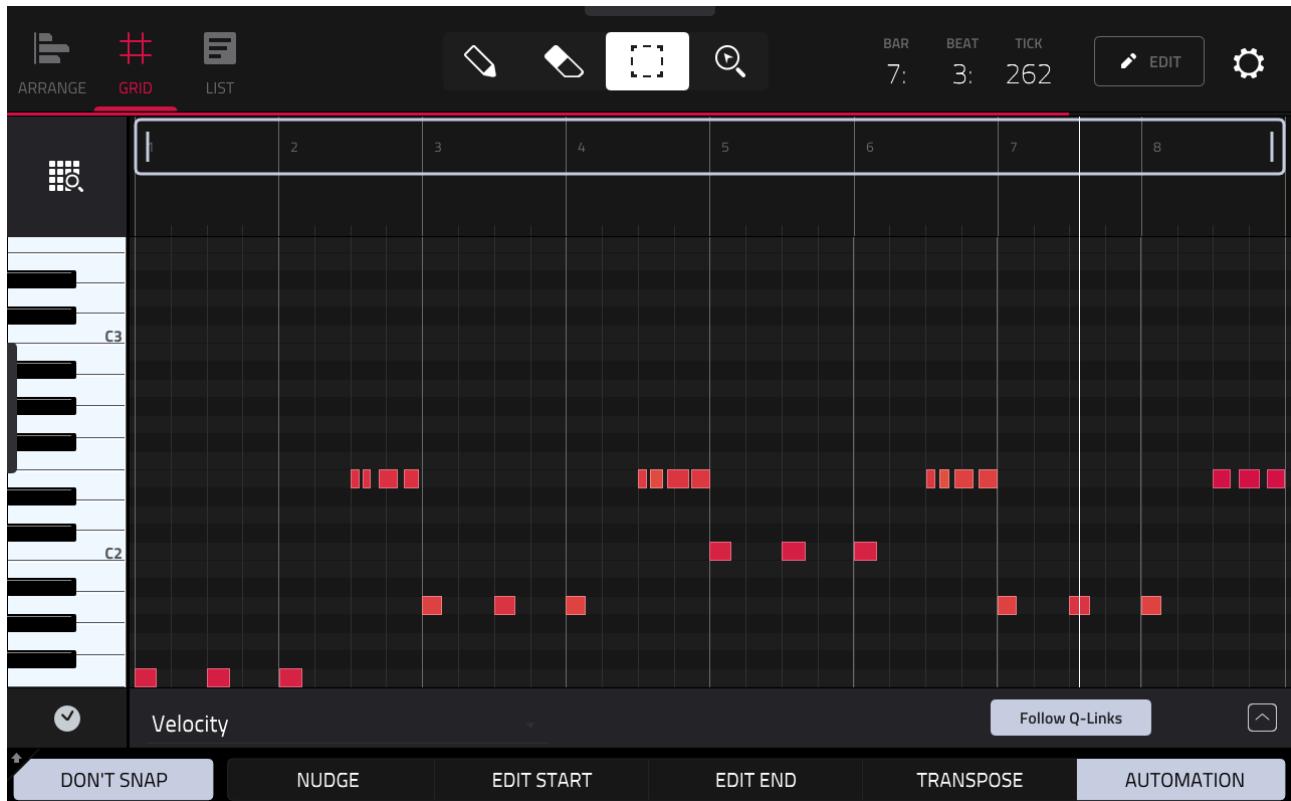
A **RETUNE TIME** of **104ms** seems a nice compromise - you'll probably never get completely perfect results unless the changes are always really subtle, but AIR Vocal Tuner is actually surprisingly good for a free plugin!

Try bypassing the effect to hear the difference. One cracking example is 'neeee' in the phrase '*my own agony*' - compare with and without the plugin to hear how it's getting re-tuned.

Load up my version, **C06 Layers Vocal.xpj**.

ENTER THE BASS

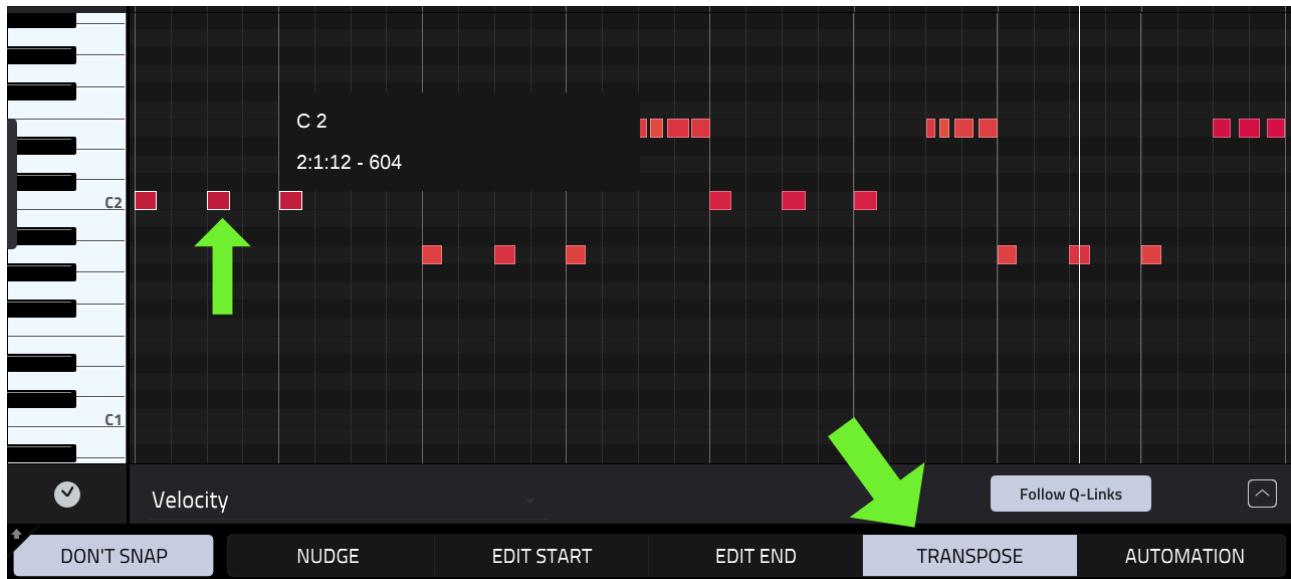
After loading the **C06 Layers Vocal** project, go back to the **Electric Bass** track (4) which is currently muted. **Unmute** and take a listen to the bassline I've recorded using the **C Major PAD PERFORM** notes settings.



What's interesting here is that even though the theme is ultimately in C (as per the piano and Fisher King melodies), I've started this on an '**F**' note which then goes to '**A**' at bar 3, then it 'resolves' to the **C** at the start of bar 5, then **A** at bar 7 and then back to an '**F**' at bar 1.

The '**F**' gives a very different feel to the song compared to using the 'expected' C. As I mentioned before, with the C major scale we are ultimately working with a set of 'safe' notes that fit with the sample chops *and* the vocal, so we can definitely try experimenting with layering different combinations, even with bass notes.

If you prefer to have C as the root note, just select those three F notes and **TRANSPOSE**' them up to C:



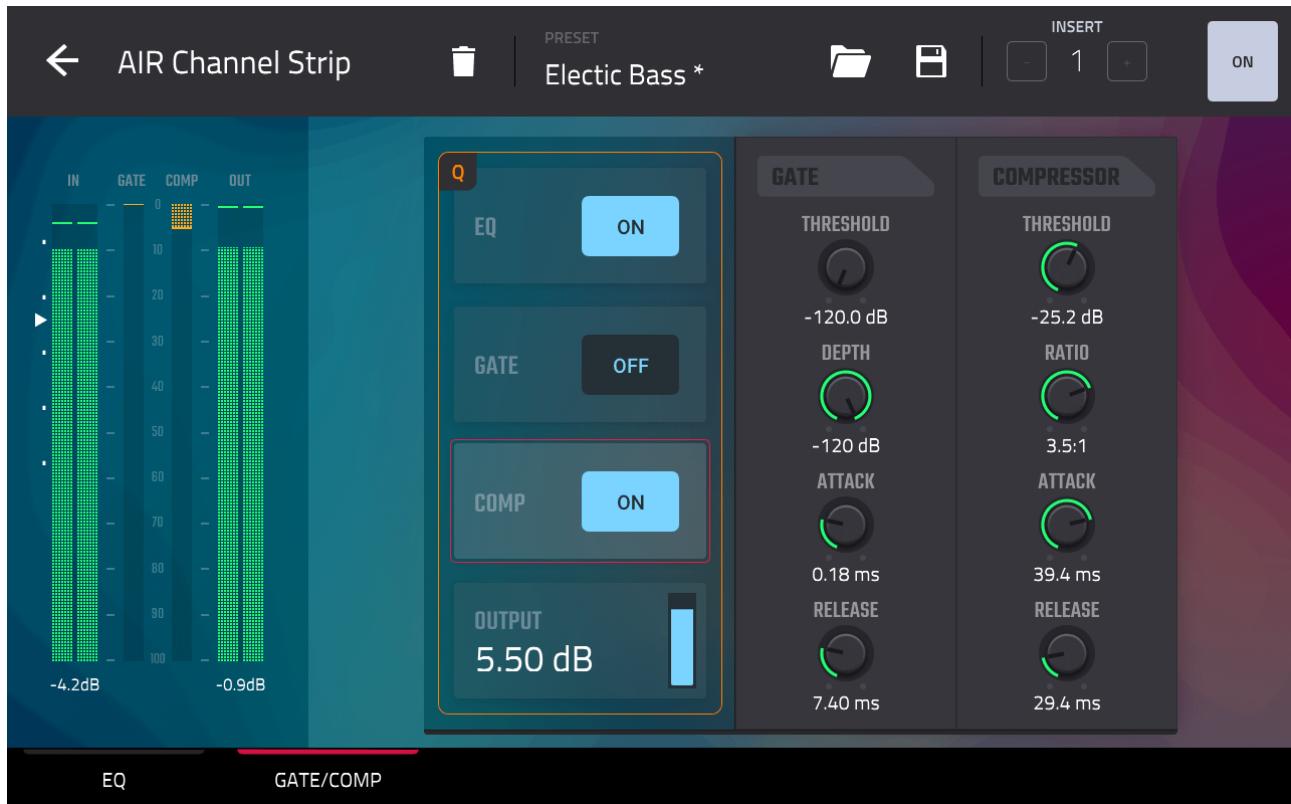
For me, the F sounds 'unresolved' and adds tension while we wait for the 'expected' C root note, which we get in bar 5, but ultimately go with whatever you prefer – of course we can use both in the final composition, as ultimately this is just the initial theme idea.

The other thing to notice is that I have applied some heavy EQ to this bass to give it a deeper, less 'metallic' sound:



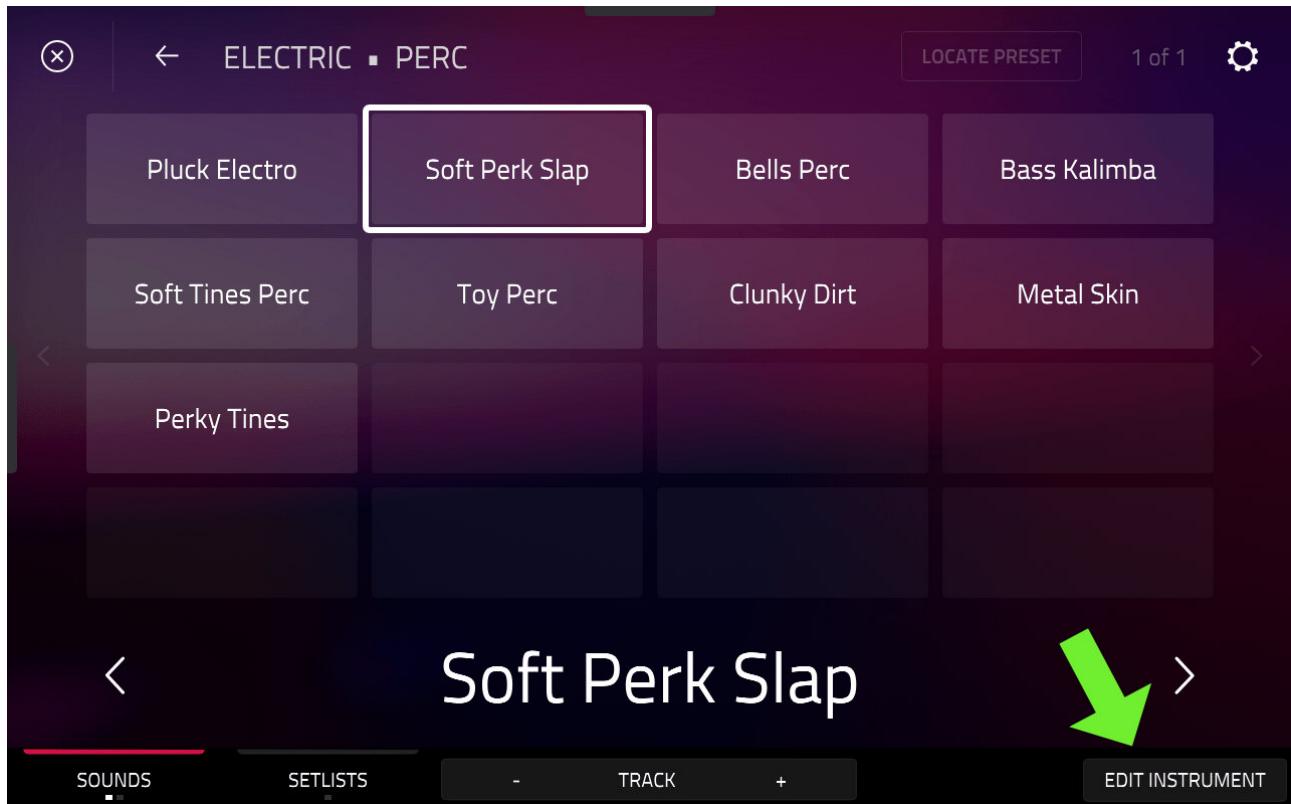
A large reduction in **TOP BOOST** and **TREBLE** was used to take out those metallic string sounds, while the **SOFT CLIP** add some nice warm clipping to the notes.

Some meaty compression was added via the **AIR Channel Strip**, with a slow attack and quick release giving the bass a compressed, pumpy sound.



ADDING A PLUGIN LAYER

In [MAIN] add a new **PLUGIN** track and call it **Melodic Percussion**. Go to the **SOUNDS** browser and select the **Electric** plugin. Enter the **Perc** category and choose the **Soft Perk Slap** preset.



Hit the **EDIT INSTRUMENT** button at the bottom of your screen to open **TRACK EDIT** – let's use this preset as the base for some further sound design.

While Electric is ultimately an electric piano emulation, it can also be used to create melodic percussion instruments such as bells, xylophones and toy piano sounds.

Select the **PICKUP/ENV** screen:

First increase the **CLIP** dial to open up the plucky sound – try **CLIP: 47%** and change the **PICKUP** so the **EI-Mag** (electro magnet) is set to **0%** for a deeper sound. Set the pickup **HEIGHT** to **0.0mm** for more tone.



Under **ENVELOPE**, set **DECAY: 1.88s** and **RELEASE: 1.46s** to make the pluck sustain a little longer.

On the **DELAY** page, first enable the delay itself; you can use the button on the right hand side of the screen, or tap the grey dot in the top right corner of the actual delay panel. Set the **RATIO** to **100:67** and **FEEDBACK: 75%** with **DAMP: 2.38kHz** damping. This gives us a nice, damped ping pong delay.

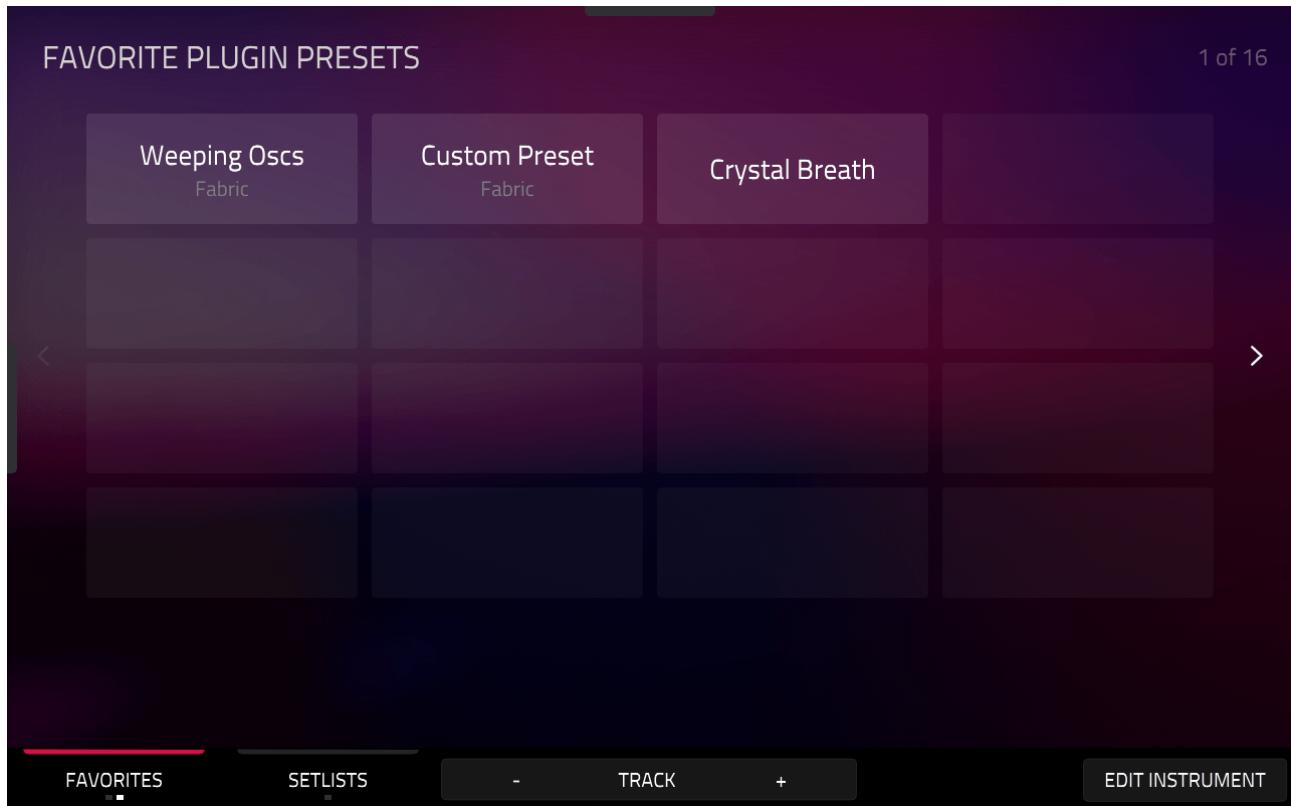


Finally go to the **SPRING REVERB** screen and increase the **MIX** to **41%**.

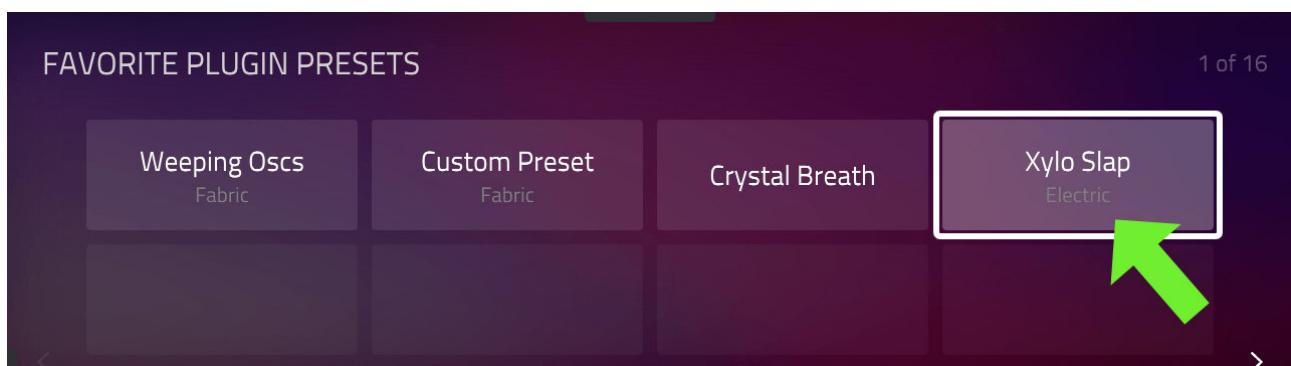
Now if you wish, hit the **DISK** icon in the top tool bar and save your preset to your user folder with the name **Xylo Slap**.

SOUND BROWSER 'FAVOURITE PRESETS'

Go to the **SOUNDS** browser and press the **SOUNDS** button again to reveal the **FAVOURITES** screen for plugins:



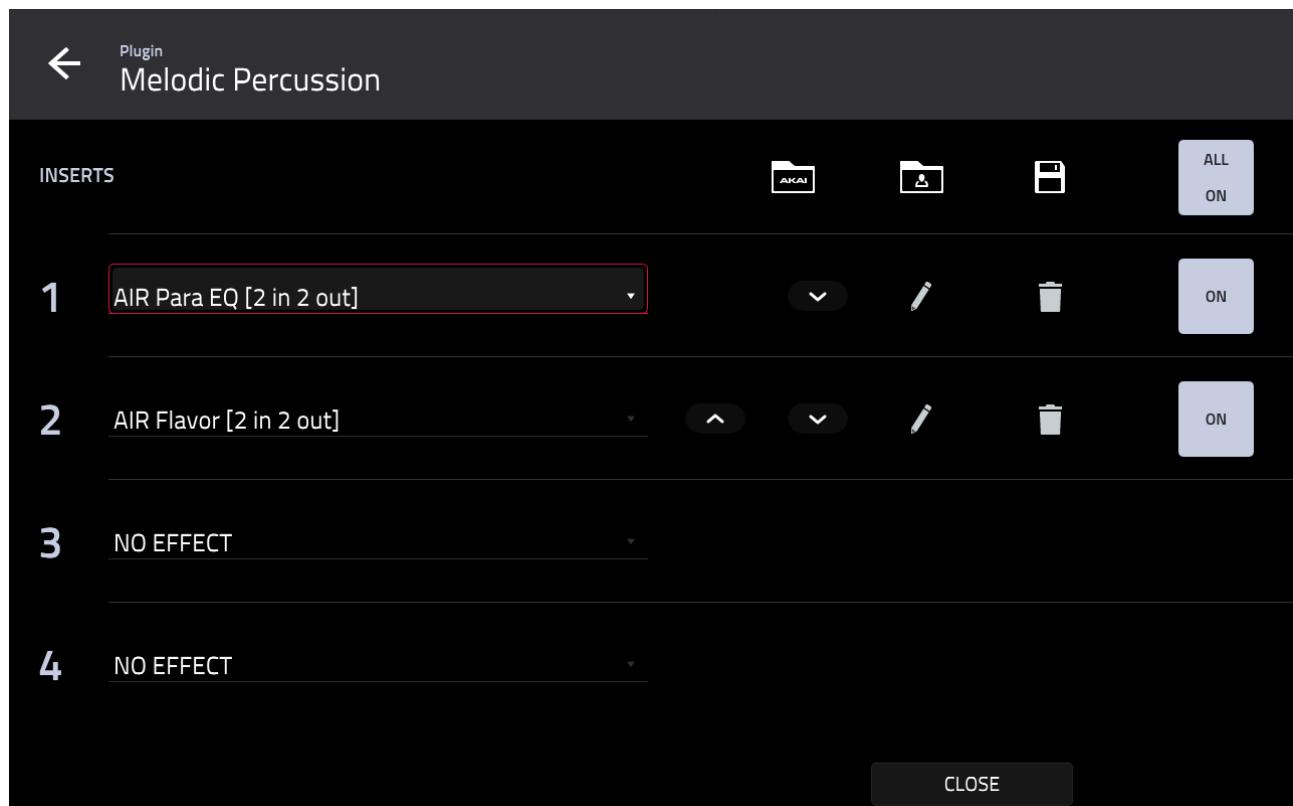
Tap and hold down on an empty box and the currently selected plugin preset will be added as a favourite.



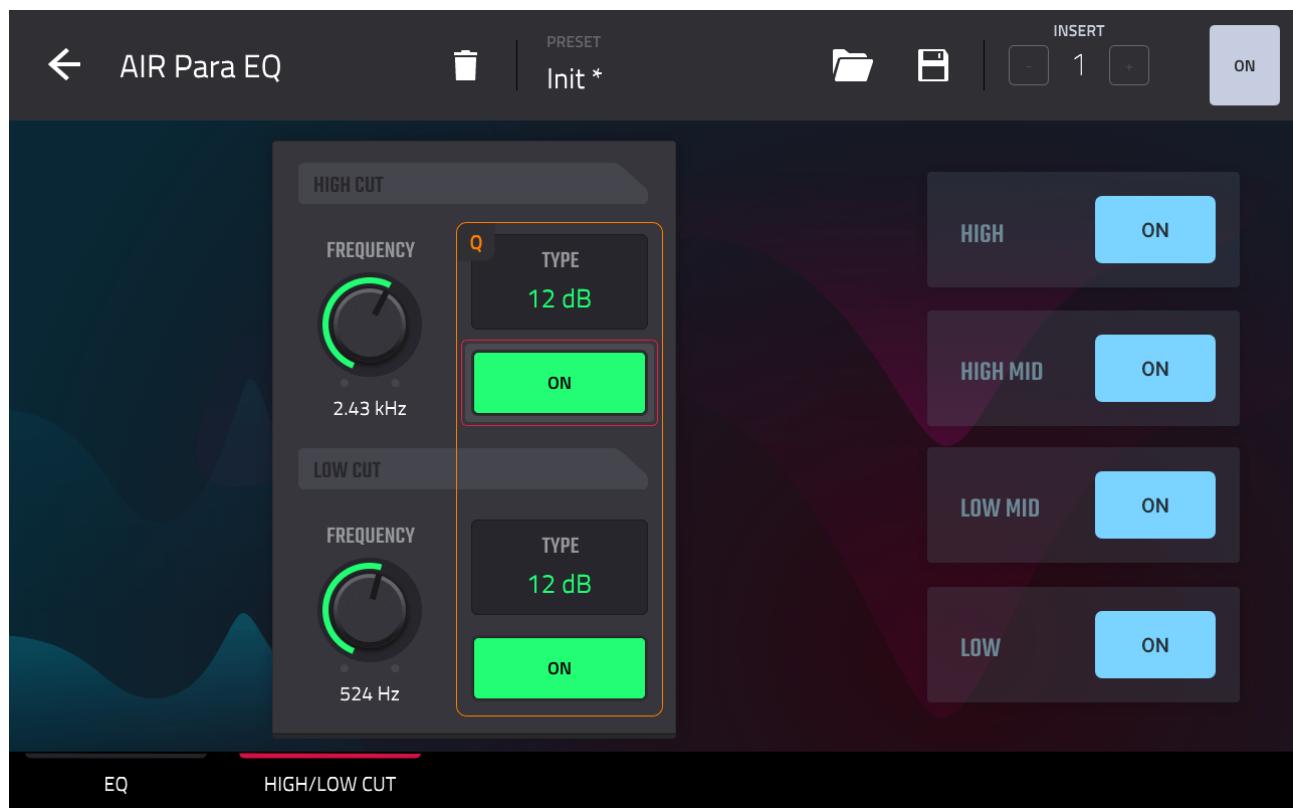
Now whenever you are on a PLUGIN track you can go to your FAVOURITES screen and just tap a favourite preset to load it instantly.

ADDING ADDITIONAL FX TO A PLUGIN TRACK

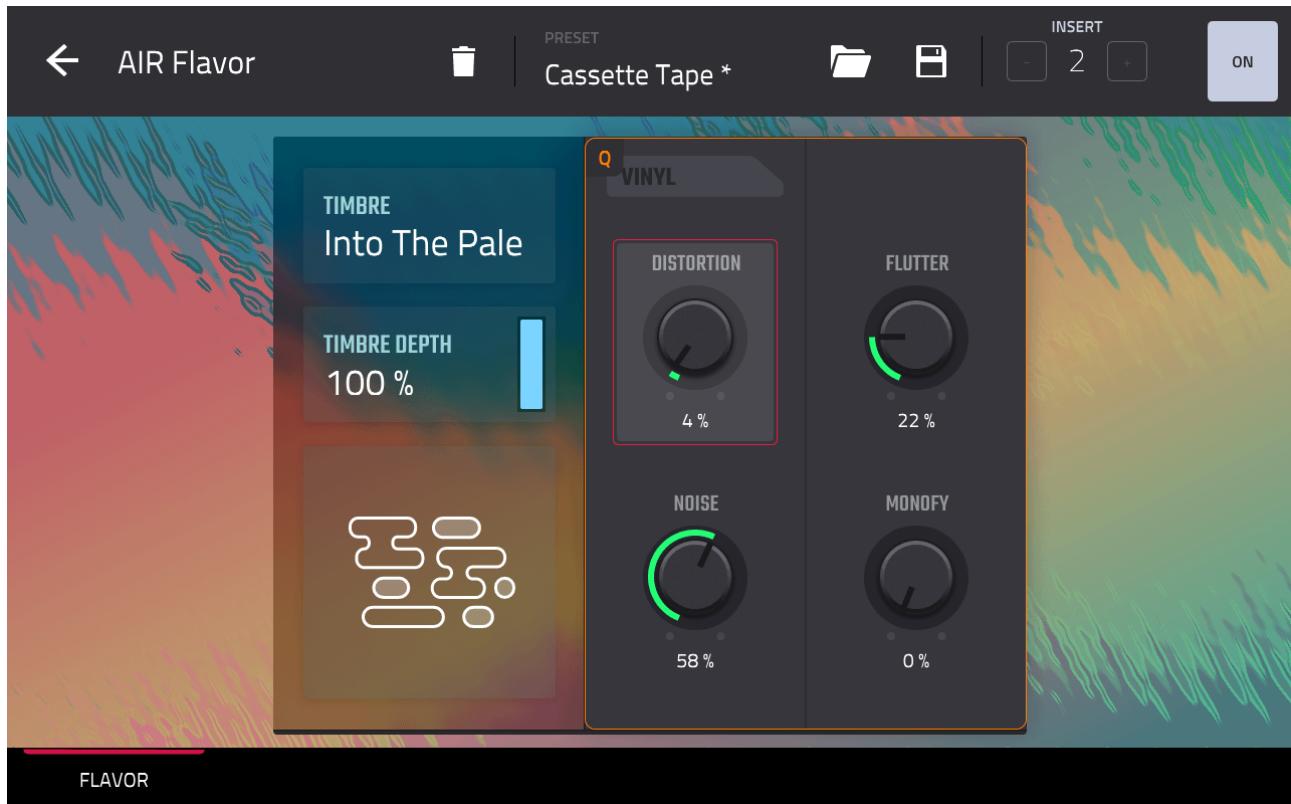
Open the **XL CHANNEL STRIPS** and launch the **INSERTS** page – add the following plugins:



Air Para EQ is cutting out some low end and taking the edge off the sharp, brittle sounds above **2.5kHz** via the **HIGH/LOW CUT** screen:



AIR Flavor is running a modified **Cassette tape** preset to add some crackle and tape flutter:



Load up the project file **C06 Layers Complete.xpj**. Here I've just added a simple two note melody from this new '**Xylo Slap**' percussion preset in the final bar, and positioned the entire track slightly to the left in the overall mix. However, I reckon this instrument has potential for a larger 'lead solo' role within the full composition – let's see how things progress!



Remember, the plugin 'preset' ('Xylo Slap') only contains the custom settings for the plugin itself. The insert FX that we added to the track ('Air Flavor', 'Air Para EQ') are stored within the track and not in the preset file. If you want to save the whole lot (preset and track FX) as a re-useable file for other projects, you'll need to use 'SAVE > Track'.

At this point I reckon there's definitely one important element missing from this hook - let's get chopping and create a drum kit!

C07: BUILDING DRUM KITS FROM CHOPS

In this tutorial we're going to create a multisampled acoustic drum kit built predominantly from 'threshold chops' extracted from a selection of breaks.

TOPICS COVERED IN THIS CHAPTER

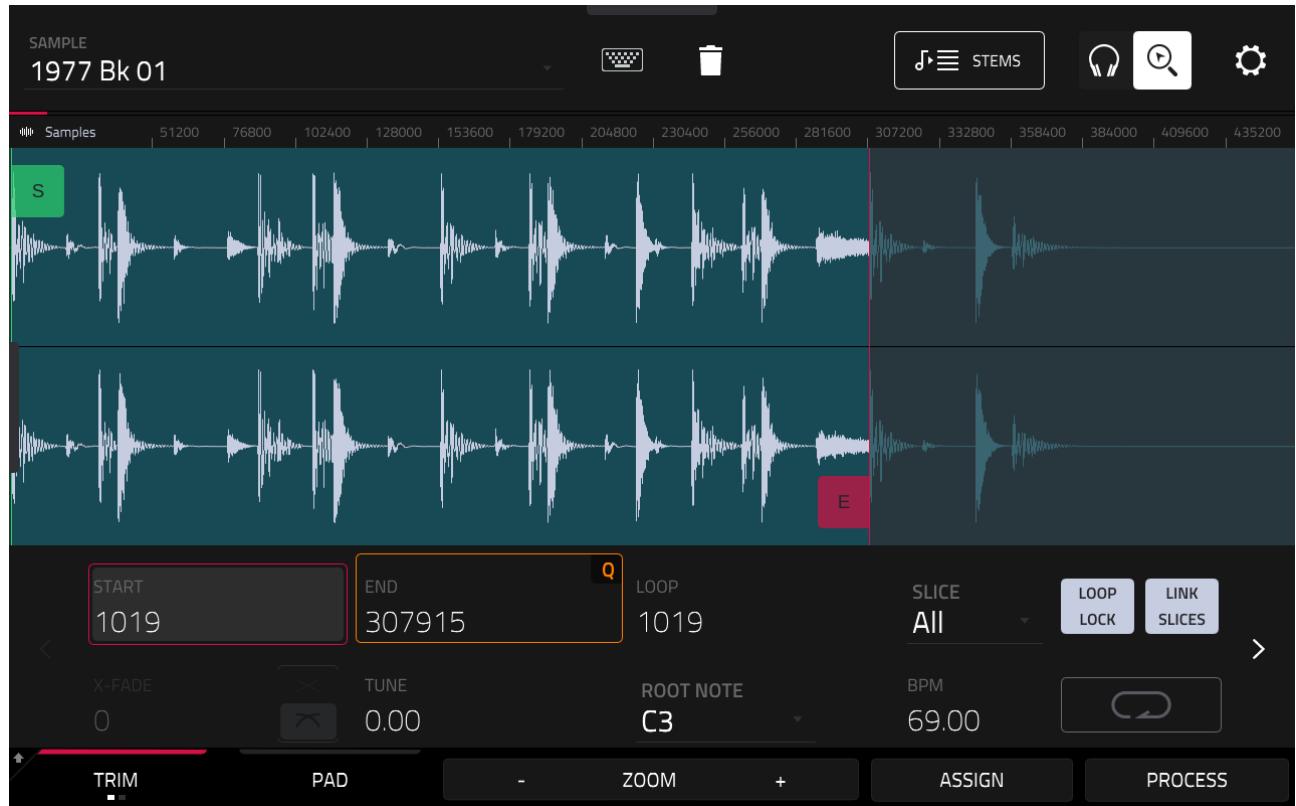
- ✓ Extracting individual drum hits from breaks
- ✓ Building a multisampled drum kit with round robins
- ✓ Adding advanced kit features
- ✓ Splicing samples together
- ✓ Using slice motion to combine round robins & velocity switching
- ✓ Emulating a vintage drum sound

REGION CHOPPING BREAKS

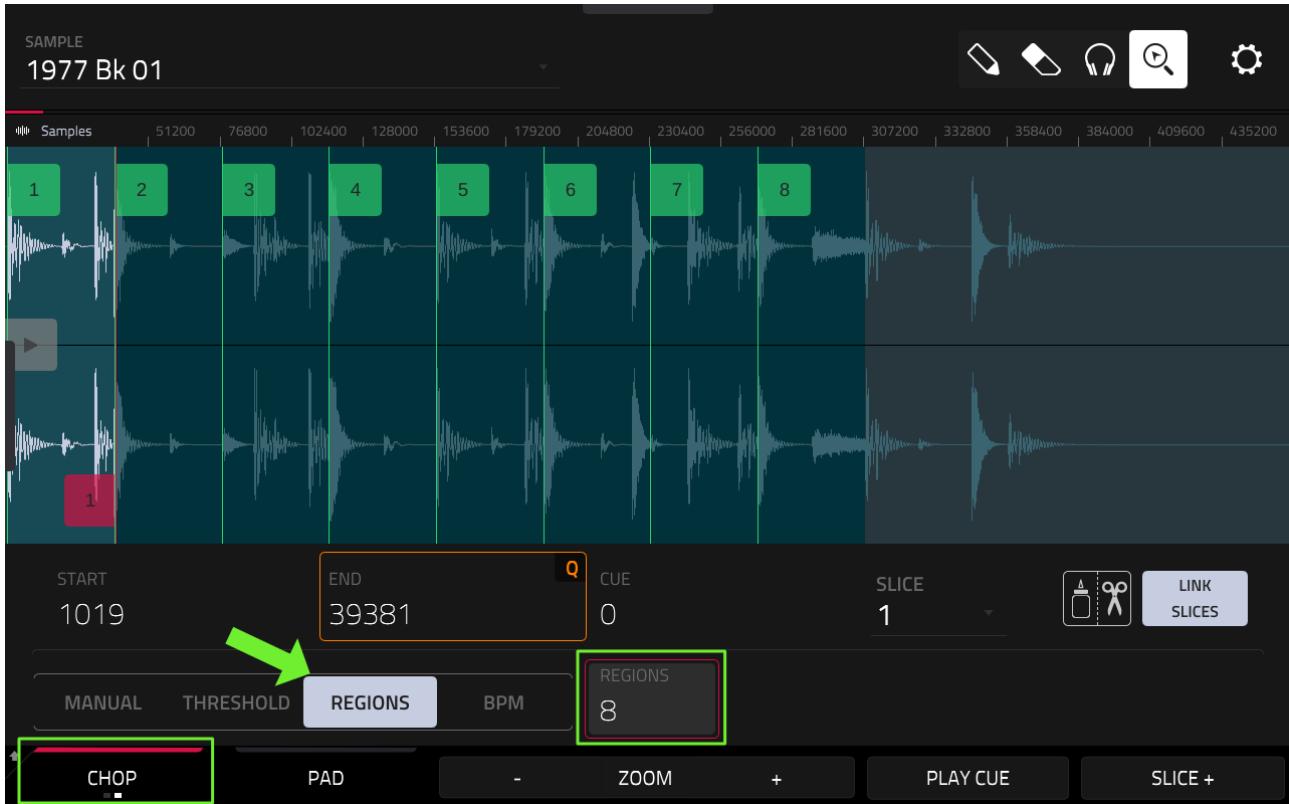
In chapter **C02** we discovered a few ways to chop a melodic loop and all these techniques can be applied to drum loops as well. Go to **[MENU] > NEW PROJECT**. Now head over to **[BROWSER]** and from the '**C07**' folder

double tap on the '**Breaks**' sub folder; select **1977 Bk 01** and hit **LOAD TO POOL**.

Go to [**SAMPLE EDIT**] > **TRIM** to select the break.



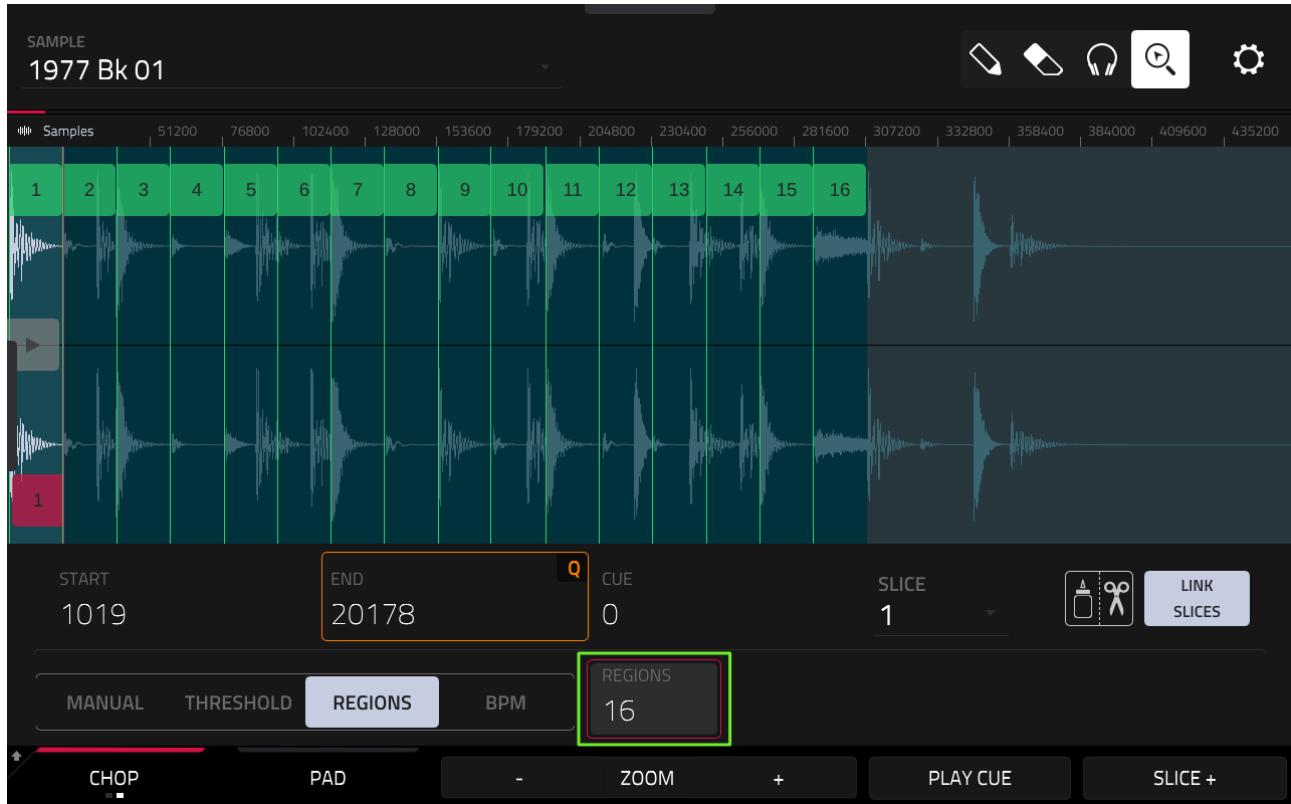
This break has already had its start and end points set to create a two bar loop. Let's try 'region' chop this. Press **TRIM** to go to **CHOP** > **REGIONS** > **8:**



As you can see, chop mode only chops the region between the 'trim' start and end point (i.e. the 2 bar loop itself) – it ignores the sample data outside those edit points.

With an 8 region split, each region is one beat. Play pads A01 to A08; as you can hear, the region edit points are not quite perfect, simply because this is a live, 'un-quantised' break while the regions themselves are just created from dividing the sample length into 8 equal regions.

Have a quick play with the 8 pads – while you can 're-arrange' the beat it's a little limiting and you are pretty much 'locked' into the same groove as the original break. Try a **REGIONS: 16** setting:



This time each region is a half beat and now you have much more flexibility in generating a different groove, although there are still 7 regions that contain more than one hit (e.g. region 2) which in turn locks in both tempo and groove (unless you avoid playing those particular slices).

Region (and lazy chopping) drums can lead to some interesting experiments but if you want to completely break away from that original groove then you need to try 'extracting' the individual drum hits from it.

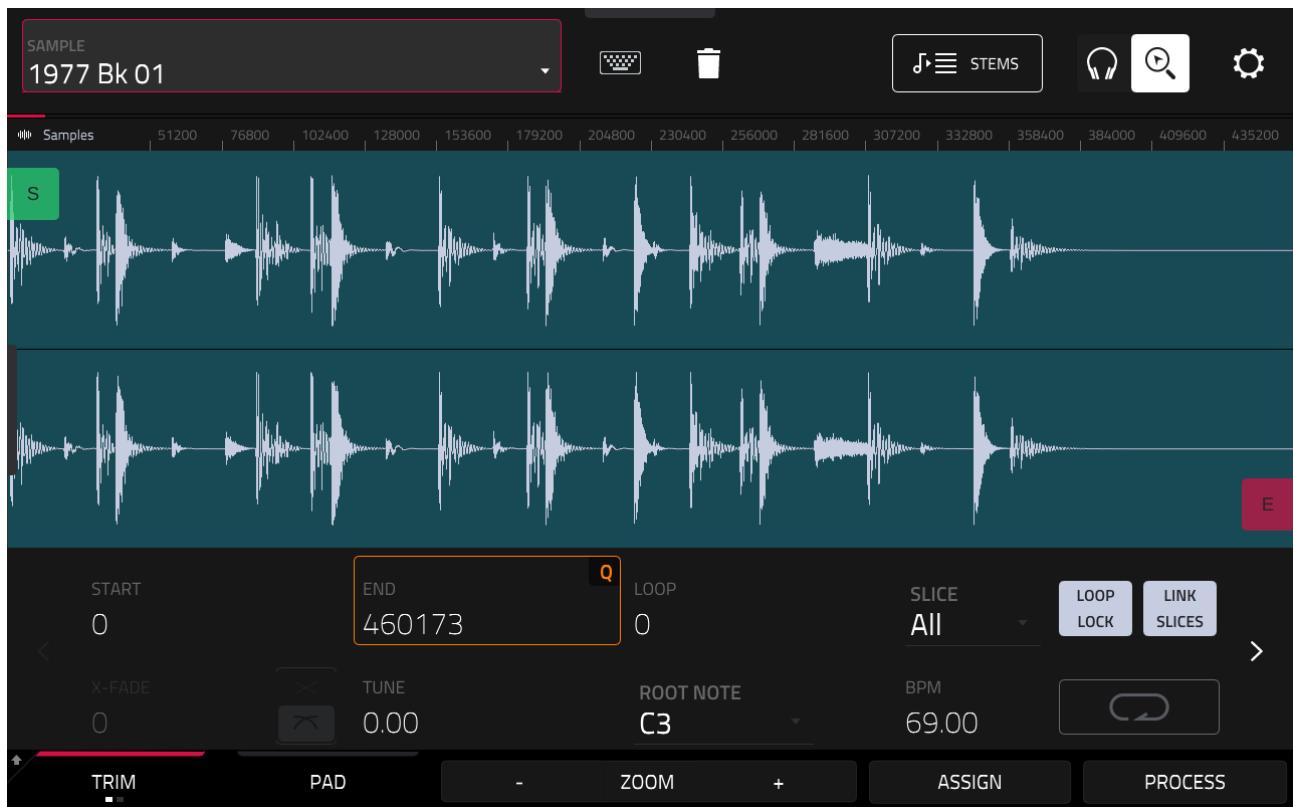
THRESHOLD CHOPPING BREAKS

If you have a nice dry, 'simple' break it's normally quite easy to chop it down to its individual drum hits; from here we can then build a playable

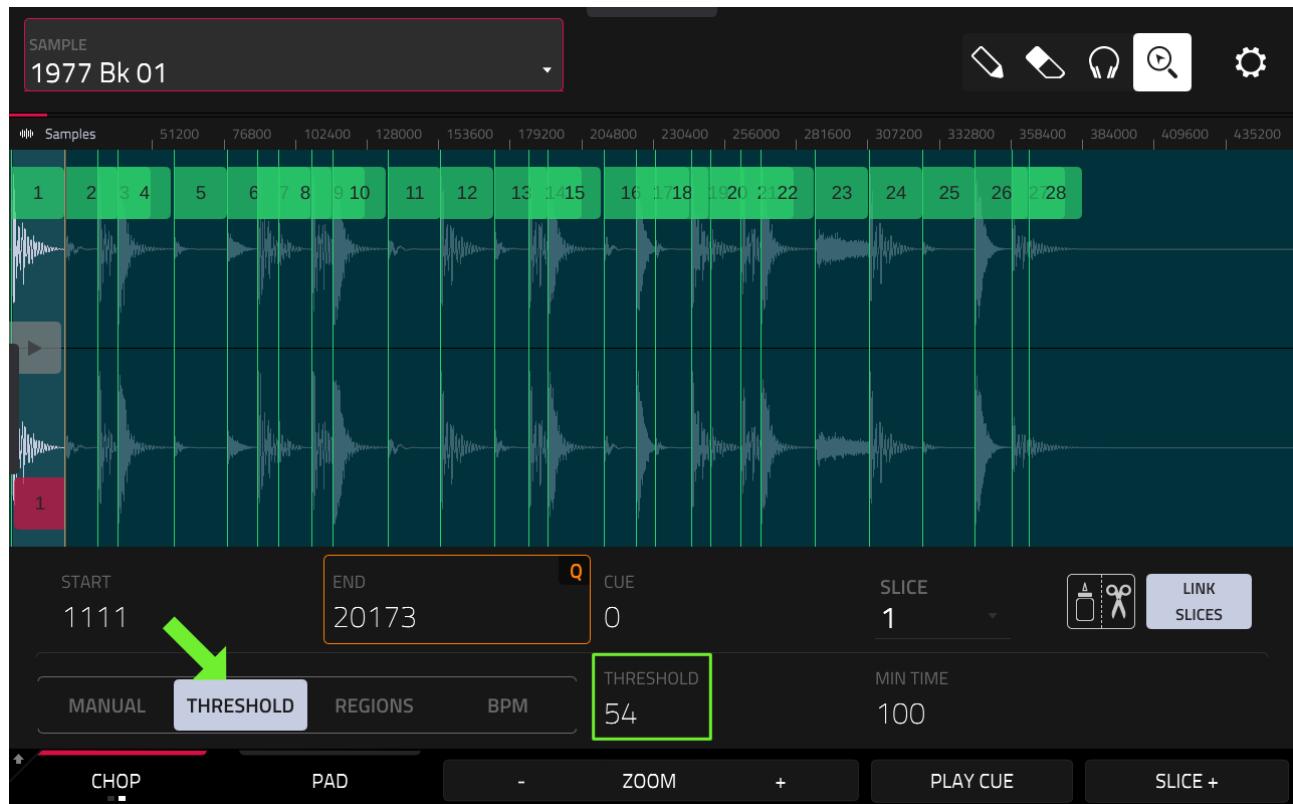
drum kit that can be used to create any number of completely new grooves, all of which emulate the sound of the original break. Alternatively we can use the drum sounds as the starting point for further sound design explorations.

When working on a big 'chop up', I prefer to work within a blank new project and then export my resulting kit(s) to my sound library for easy use in other projects.

Let's start with this **1977 Bk 01** sample. Hold down [**SHIFT**] and hit **CLEAR ALL** to remove all the existing slices. Go back to **TRIM** and let's reset the START and END points back to their default positions, revealing those 'hidden' drum hits:



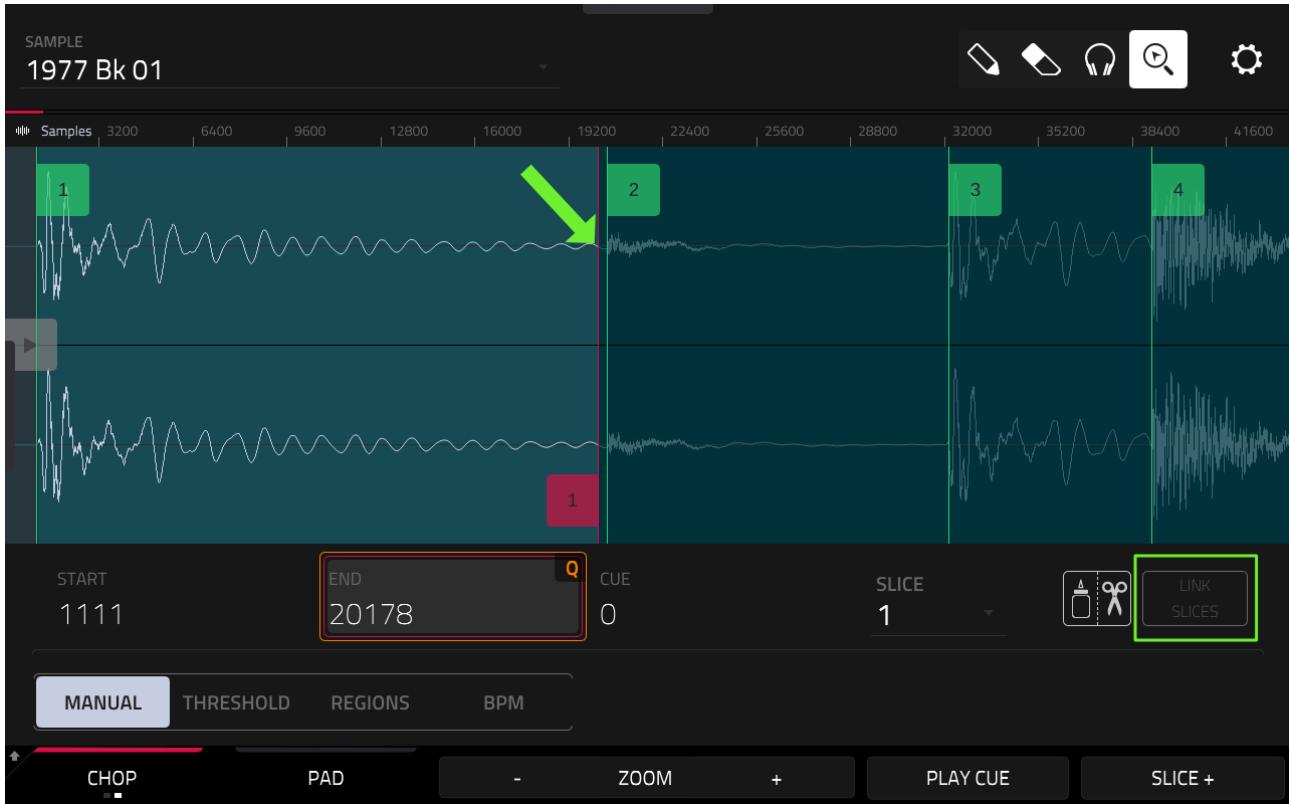
Go to **CHOP**, select [**SHIFT**] > **0 SNAP** and keep **LINK SLICES** enabled. Hit the **THRESHOLD** button. A **THRESHOLD** of **54** works well:



Now in true modern MPC style, many of the regions have a click at the end and need a bit of attention.

Slice 1 is that silence at the beginning, while SLICE 2 is a nice kick – except for that click at the end. I find the start of each region in threshold chopping is almost always fine, it's just the end that needs a tweak, so this is where I like to set **LINK SLICES: OFF** to disable 'shared' edit points.

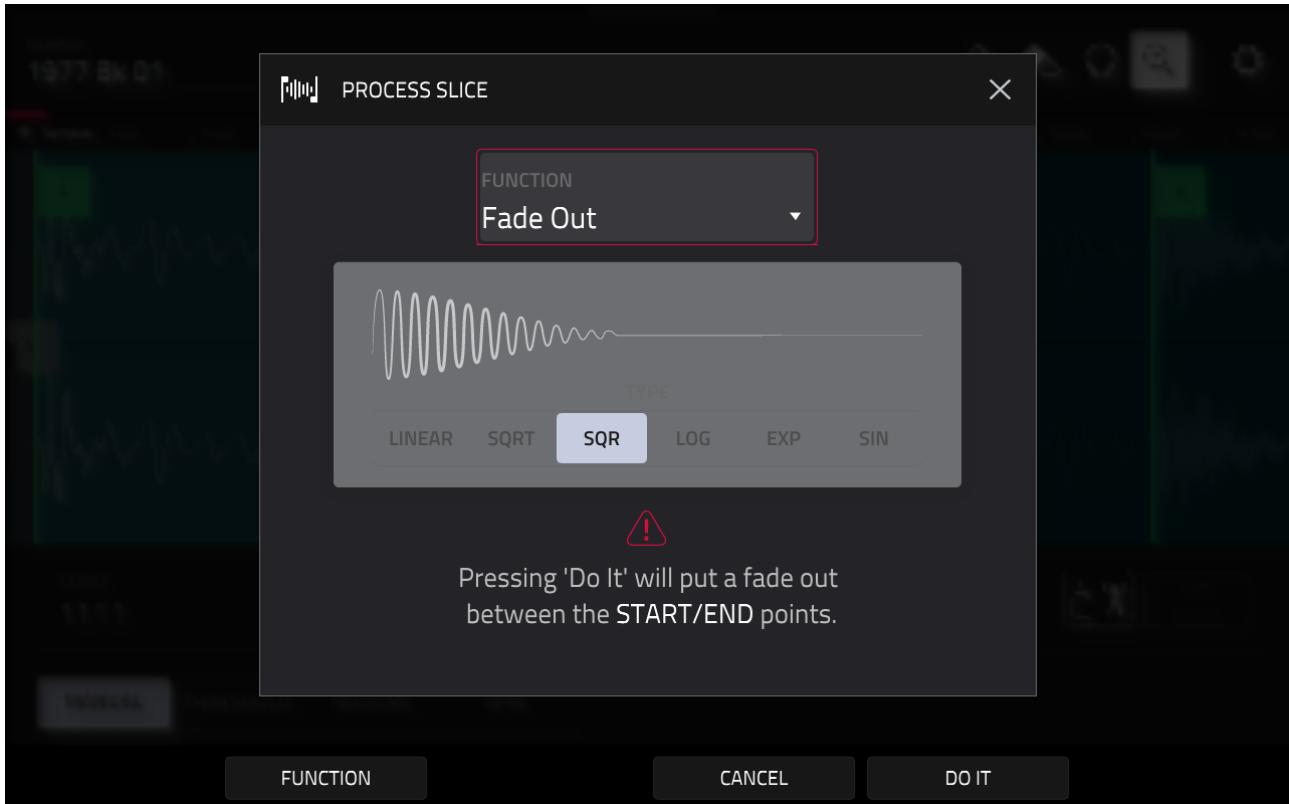
Select **SLICE 1** (pad [**A01**]) and use (Q-LINK 2) to go back to the next zero crossing point (**20178**).



Remember, there is a little variance in the edit points the MPC uses when zero snapping, so don't worry if the zero point you get is slightly different to the one I state

Preview pad [A02]. It still has a click at the end, and even after trying a few different END points, that click is still there. So, at this point it's clear that changing the END point isn't enough, it's going to need a little 'fade'.

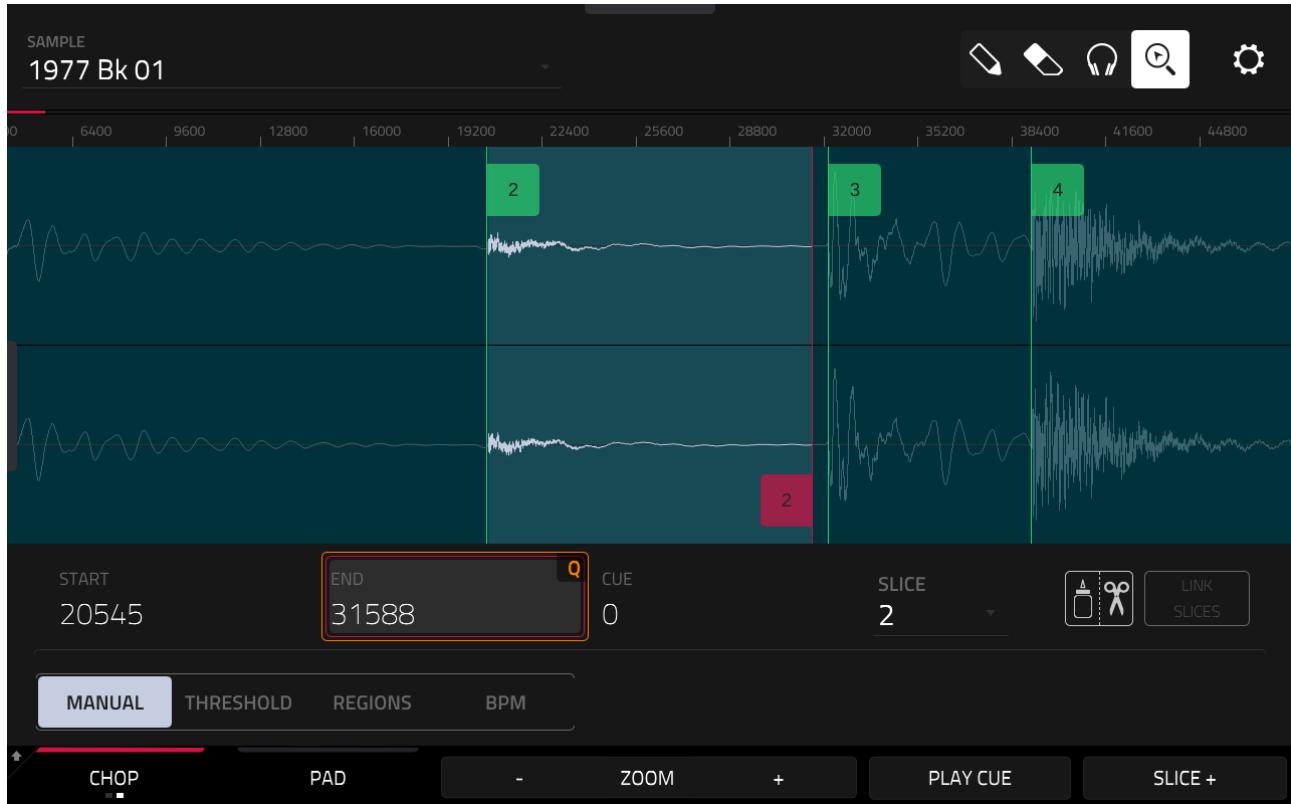
We can do this later in our track using the DECAY setting in AMP ENVELOPE. However we do have an alternative right here in SAMPLE EDIT. Hold down [SHIFT] > PROCESS and select FADE OUT:



This will apply a small amount of fade out to our current chop; now you can't dial in a specific amount of fade so it's quite inflexible in that respect, but it does have six different fade shapes available, of which I find the **SQR** to be the one that works best for removing nasty clicks. After selecting **SQR**, hit **DO IT**.

Preview **SLICE 1** – perfect. You can always [**UNDO**] if you're not happy and maybe try a different fade shape. But remember you can also leave this until later, especially as perhaps you prefer to just whizz through with the END point adjustments first; or you might just prefer to use the AMP ENVELOPE in TRACK EDIT. Fading it's a nice option, but use judiciously.

Carry on with **SLICE 2**, give this a small tweak with (Q-LINK 2):



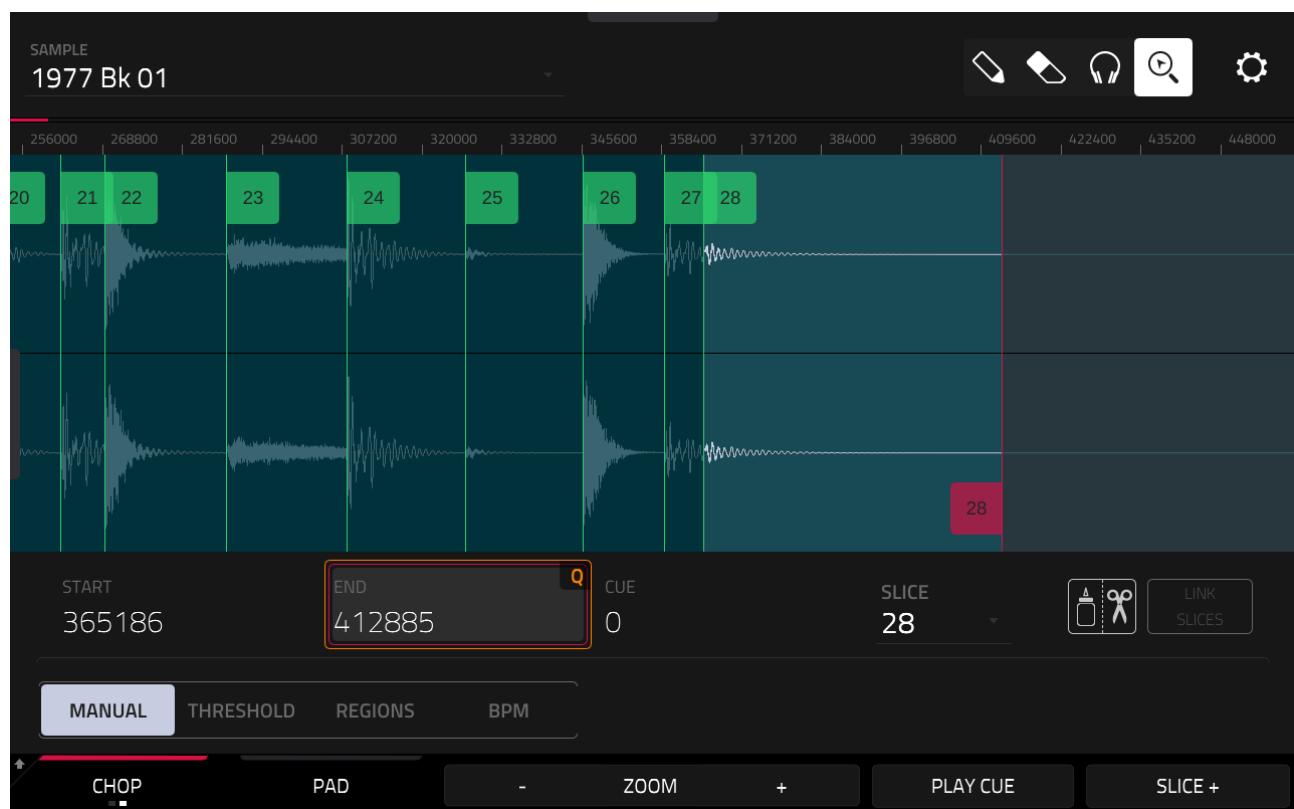
The SLICE 3 kick is a bit nasty, but let's give it the FADE OUT treatment and see what it sounds like. Don't bother taking the END point back, just apply the fade. It's much quicker this time as FADE > SQR is already pre-selected for you. Apply the fade and preview SLICE 3 again, that's loads better, and might be useful as a 'ghost' kick.

The snare on **SLICE 4** sounds pretty decent with an **END** of **59062** – ultimately we're looking to get rid of nasty clicks and abrupt slice ending; if the slice sounds pretty decent after a quick END point change it's probably best to just leave it.

SLICE 5 and **SLICE 6** are fine, for **SLICE 7** change the **END** to **96092**. Maybe try a little fade on **SLICE 8**. And so on. Generally I found the kicks (e.g. slice 12 and slice 24) were the ones that really benefited from the fade out, the

rest mostly just needed one little turn on (Q-LINK 2) to remove any clicks. odd hat here and there, but on the whole a quick tweak of the END point was generally enough for all other slices.

I finished by setting the **END** for the final **SLICE 28** to **412885**:



When you are done, think about saving this project, just to ensure all your hard work isn't accidentally lost in a crash. I have a folder on my MPC disk that is purely for these kind of 'temporary building' projects which are used primarily to spit out custom kits, instruments and samples (rather than projects used specifically for beats).

CONVERTING YOUR SLICES

We now have 28 slices in our break, and some of these slices contain some really great individual drum sounds. However, some slices just need to be discarded as we will not be using them. For example, SLICE 20 is a hat with a fair amount of low end bleed from the preceding kick.

While it would be nice to just hit a button and completely 'disappear' those unwanted slices (including the audio region within them) this is not currently an available processing option for slices ('PROCESS > Delete' only works when SLICE is set to ALL).



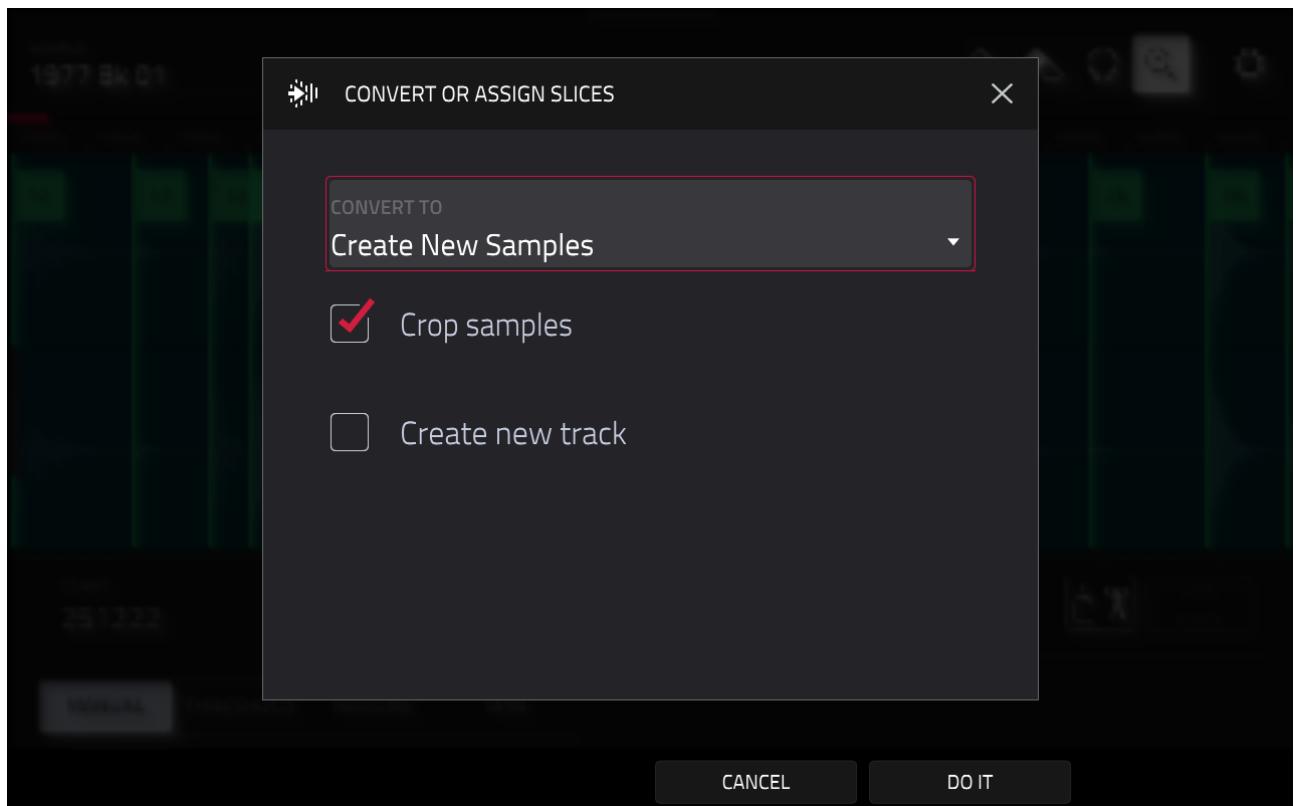
Important: The function [**SHIFT**] & **SLICE-** just removes the currently selected slice 'markers', effectively combining the current slice with the slice before it. It does not delete or 'cut' the actual audio within that slice.

The only way to start sorting our slices is to first 'convert' ('extract') them.

Previously we converted our 'Fisher King' loop using 'non destructive' slices which reference the original slice directly from the pad layer. It's certainly possible to use this method here, but it can become confusing and a bit inflexible when trying to build kits from 'slice numbers', so I tend to prefer a more old school 'extraction' method.

Here we will convert each slice into its own cropped sample, completely detached from the original break. And once converted like this we can easily (and permanently) discard any unwanted slices from our project.

From the **CHOP** screen, hold down **[SHIFT]** > **CONVERT**. Select '**Create New Samples**':



Check '**Crop Samples**' to ensure that each slice region is converted into a cropped sample containing only the audio between each slice's START and END point.

Uncheck '**Create New Track**'. Normally we like to extract our chops to a drum track, but in this instance we'll initially just need the samples added to the sample pool (we'll be building a custom drum kit later).

Hit **DO IT** to create the chopped samples; you'll be returned to your original drum break. Hit **CHOP** to return to the standard **TRIM** screen.

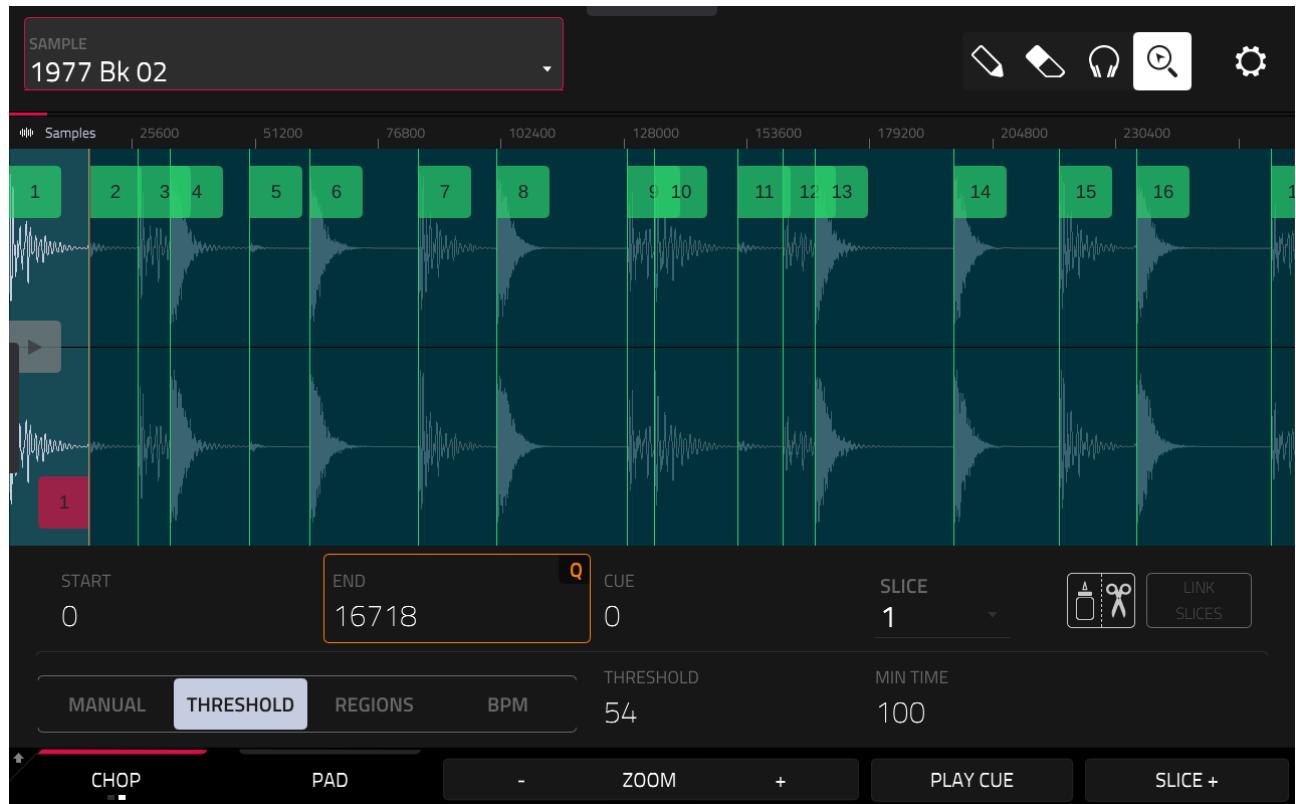
You can peruse through the new chopped samples by tapping on the SAMPLE field in the top left of the screen and turning the (DATA WHEEL) or [+] button. As you can see, each sample is named after the slice it was derived from, for example **1977 Bk 01 SI-07** was taken from slice **7**:



Eventually we'll sort and arrange our chops into a kit, but I have another break that I want to chop as this one also sounds like it might have some nice hits to use.

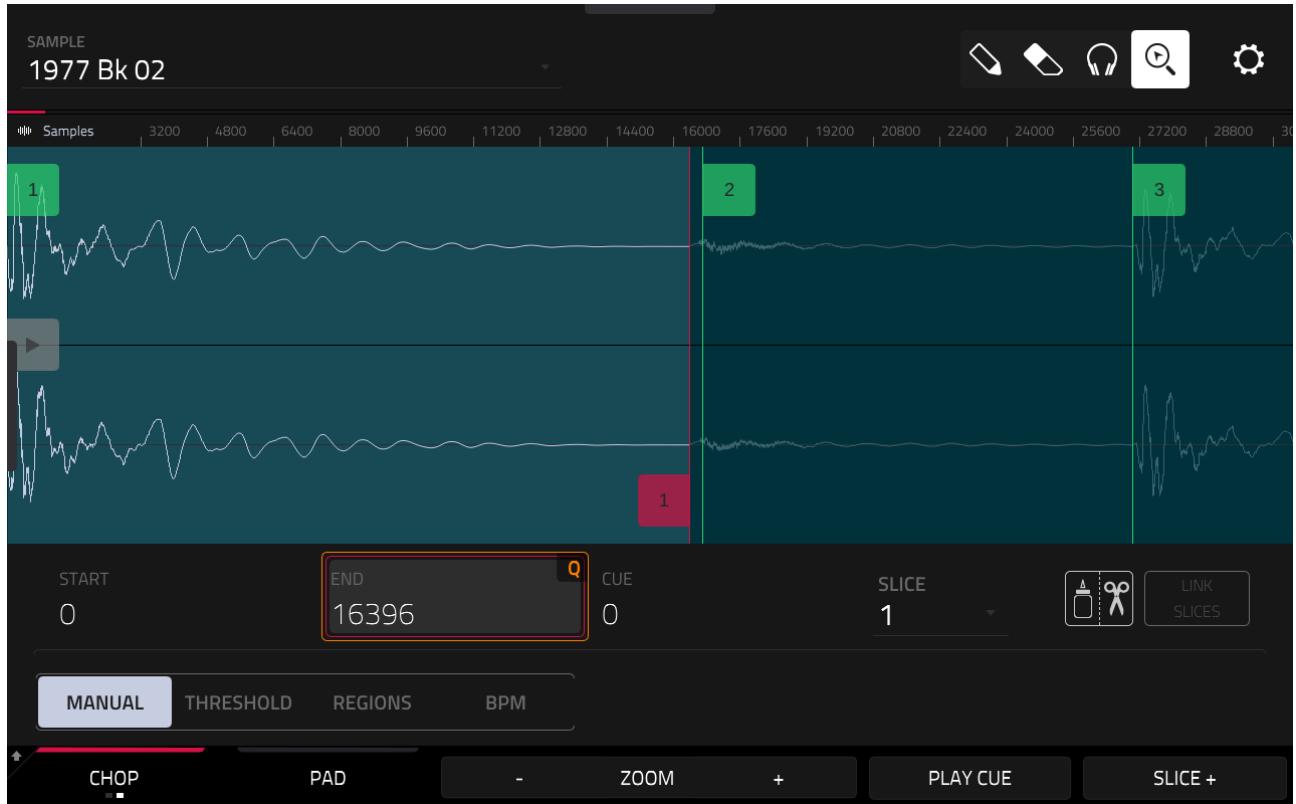
From the '**C07 > Breaks**' folder, tap on the **1977 Bk 02** (we first met this loop in chapter C03). Repeat the exact same chopping procedure for **1977 Bk 02**. It's worth turning **LINK SLICES** back on when setting the initial chops, just in case we need to mess with the basic slice structure.

A **THRESHOLD** of **54** gives me this, with all 'hits' properly assigned to their own individual region:

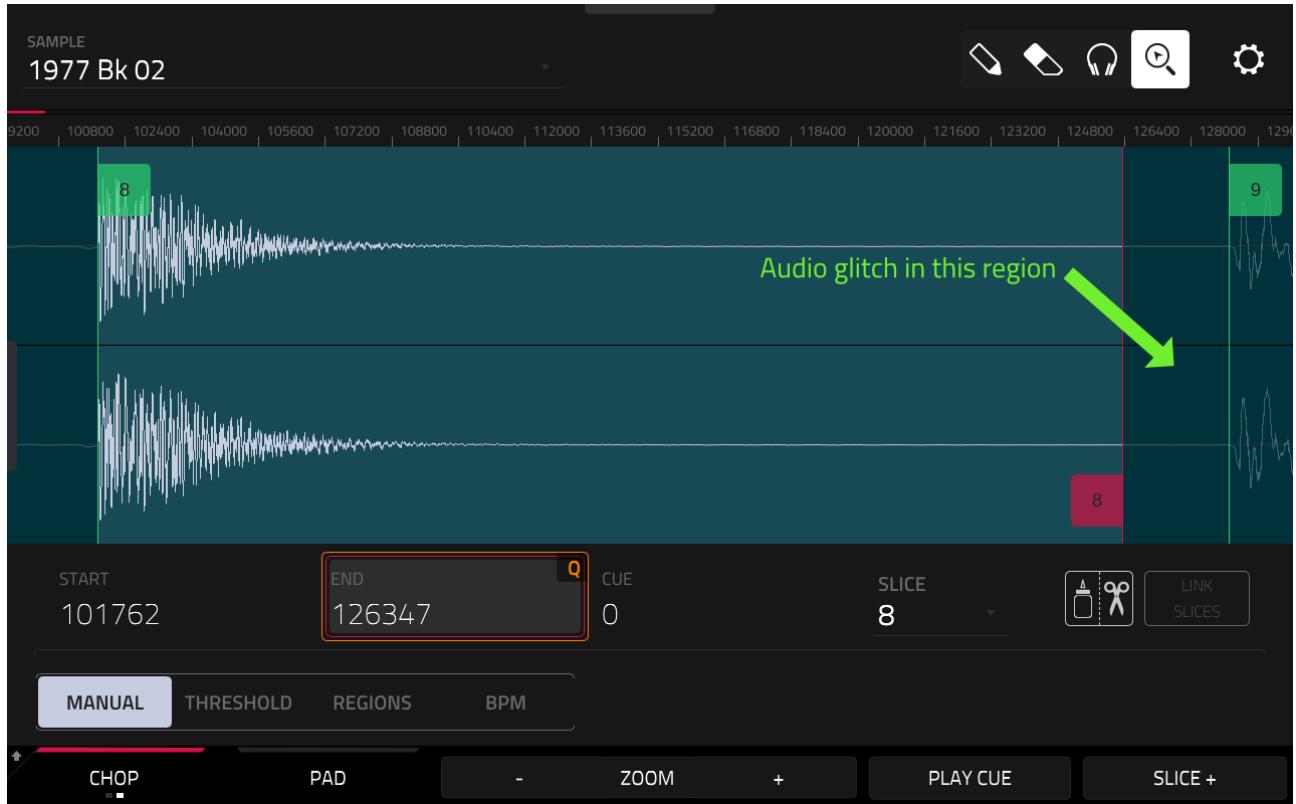


Now switch off **LINK SLICES** and go through to remove any nasty clicks using (Q-LINK 2), along with a 'Fade Out' for the real problematic slices. For example, the kick on **SLICE 1** which after a fading probably gives us the best kick so far:

C07: BUILDING DRUM KITS FROM CHOPS



In this break, more kicks needed a fade. We also had a 'click' on **SLICE 8** and **SLICE 16** that is actually a glitch on the audio file itself rather than a result of the slice marker position. With these I took the slice markers back further to avoid the glitch:



Finally **SLICE 6** is actually a snare with a quick hat played after it – there's no point trying to chop this into two slices as there's no realistic way of separating them, so we'll just be ignoring this.

After before, hold down **[SHIFT]** and hit **CONVERT**; '**Create New Samples**', '**Crop Samples**', uncheck '**Create new track**'. **DO IT**.

SORTING & DISCARDING CHOPS

Did you enjoy that? Personally I love chopping down breaks like this. Sorting them all out maybe not as much! So now we have 45 chopped samples in this project, some are fantastic, some are clearly not useful for us. At this point we can start organising the best samples into a kit, and

while we do so we could optionally delete any chops that are clearly 'surplus to requirements'.

If you prefer you can load up my version of the project so far, **C07 Chops.xpj**, which just loads all the raw chops into memory (along with the two original breaks).

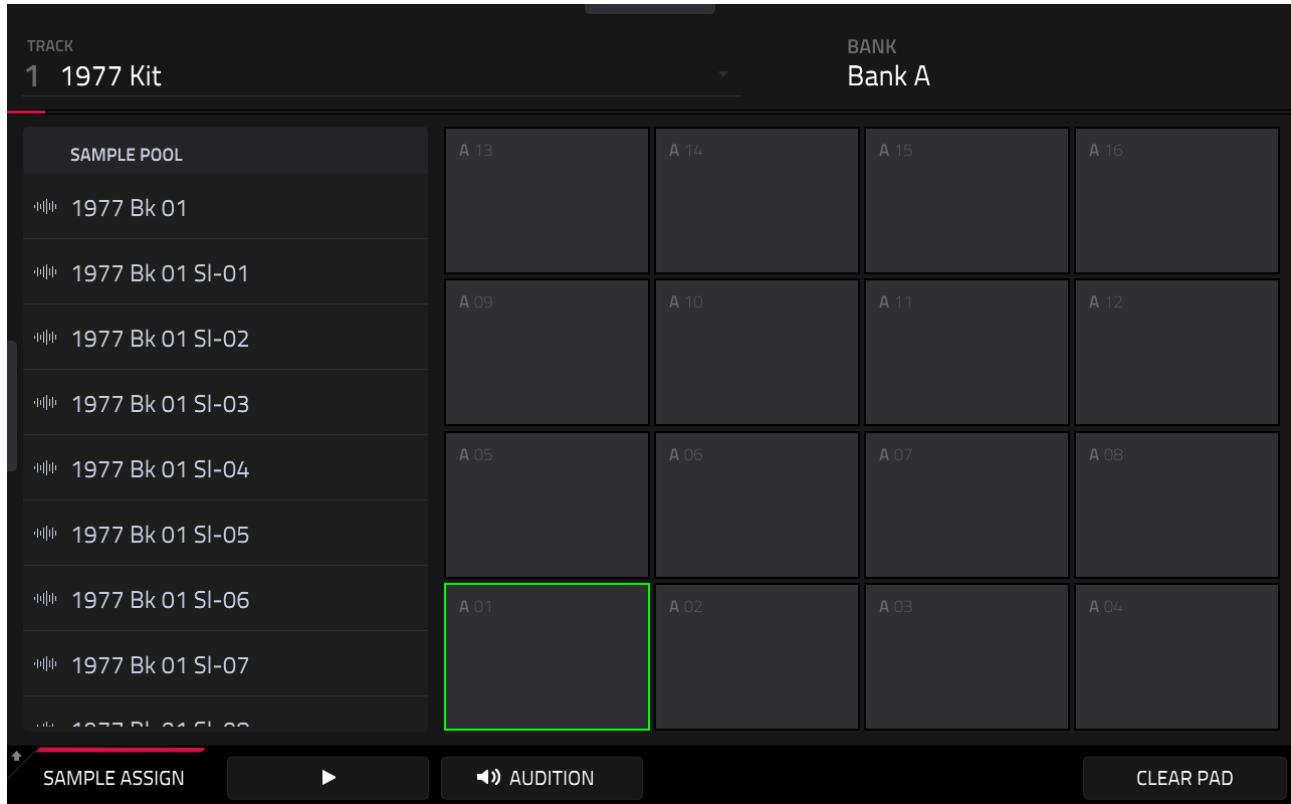
Go to [**MAIN**], select the DRUM track on track 1 and rename it **1977 Kit**. Go to **TRACK EDIT > GLOBAL**, select 'ALL' pads from the **EDIT ZONES** dialog.

Set **LAYER PLAY** to **Cycle** - this will configure each pad to play round robin style, as we did with the samples in the bass guitar instrument. While you are here, set **POLY** to **Poly**, this will ensure that our drums all behave polyphonically when the same pad is triggered continually (avoiding unnatural sounding monophonic mutes when a pad is played multiple times in succession).

Remember to head back to **EDIT ZONES** and set the **MODE** to **CURRENT**.

Let's start assigning samples. There's a few places within the MPC where we can manage a big pool of samples, but only one place where we can simultaneously assign samples to pads and if required, delete any unwanted chops.

Go to **[BROWSER] > ASSIGN SAMPLES:**

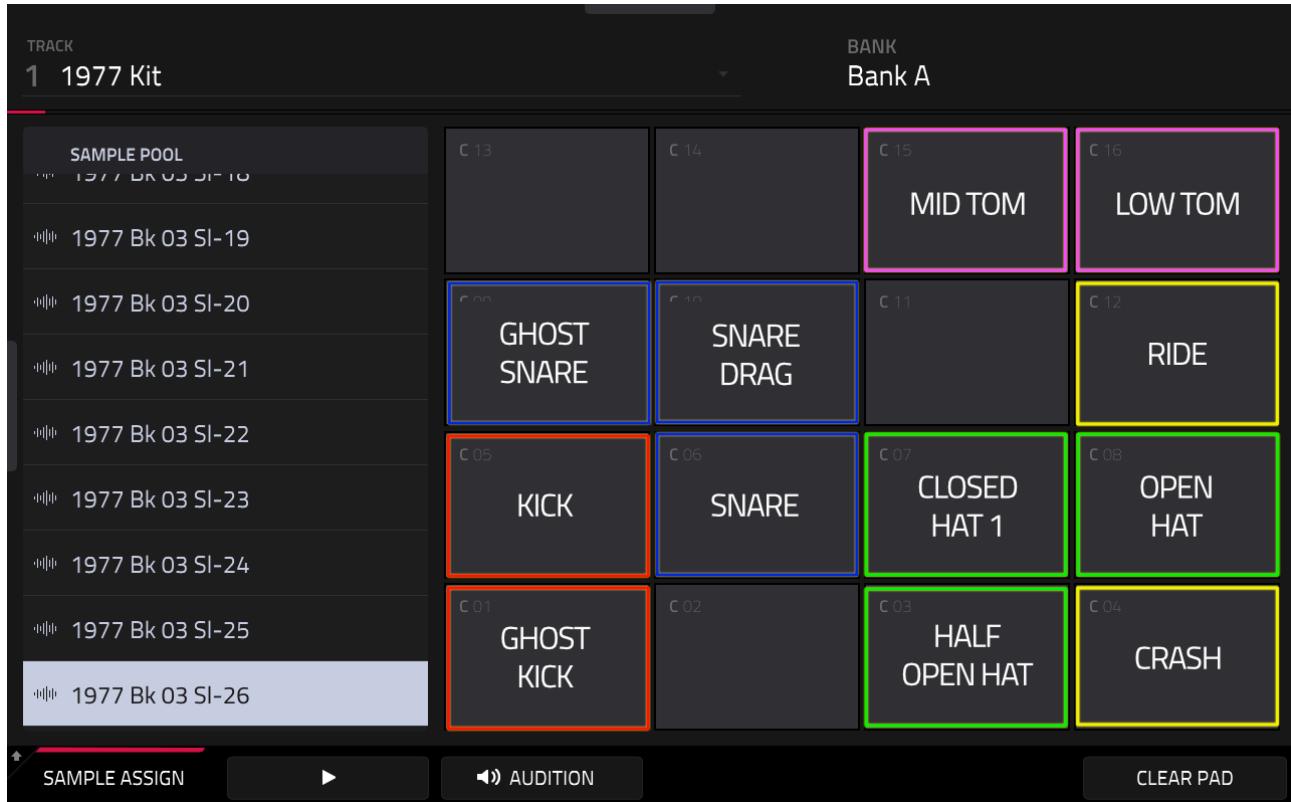


Make sure **AUDITION > AUTO** is enabled (with **WARP** off). All the samples currently in the sample pool are listed on the left hand side - tap at the top of the list (**1977 Bk 01 SI-01**) and use the (DATA WHEEL) to scroll down, auto previewing each sample as it's selected.

We're looking for the best drum hits here - each one has to be a 'pure' drum sound. For example, just a kick, not a kick with a hat played at the same time; this would exclude **1977 Bk 01 SI-01** as if you listen to the kick properly you can indeed hear a closed hat as well.

When we hear a good drum sound we'll drag it over to a pad. I'm going to build this kit using my 'Dirty Drummer' layout, which I developed as a 'finger drumming' friendly layout:

C07: BUILDING DRUM KITS FROM CHOPS



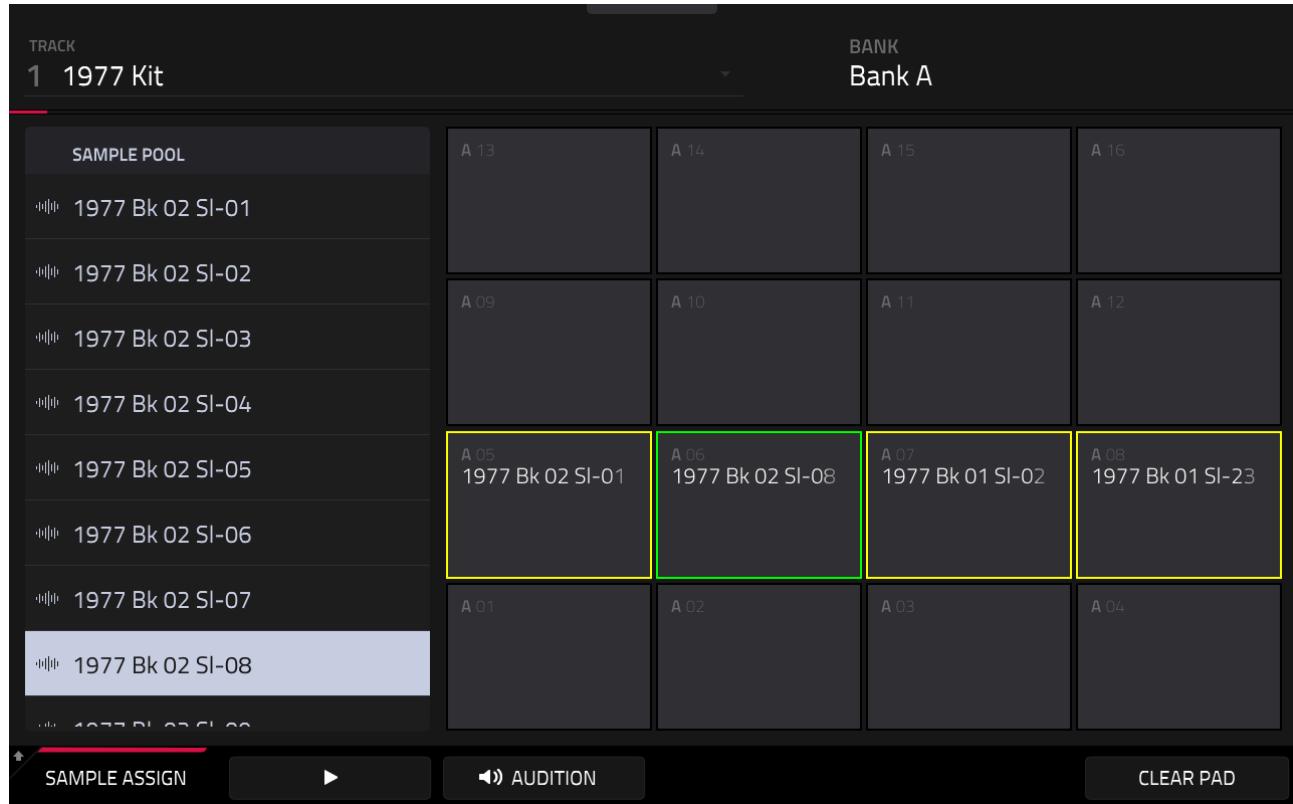
1977 Bk 01 SI-02 is a nice closed hi hat, so assign this to pad [A07] by dragging it over to the pad. **1977 Bk 01 SI-23** is a nice open hat so drag it to pad [A08]:

C07: BUILDING DRUM KITS FROM CHOPS

The screenshot shows the MPC software interface. On the left, a vertical list of samples from a 'SAMPLE POOL' titled '1977 Bk 01 SI-15'. The samples listed are: 1977 Bk 01 SI-16, 1977 Bk 01 SI-17, 1977 Bk 01 SI-18, 1977 Bk 01 SI-19, 1977 Bk 01 SI-20, 1977 Bk 01 SI-21, 1977 Bk 01 SI-22, and 1977 Bk 01 SI-23. The sample '1977 Bk 01 SI-23' is highlighted with a light gray background. At the top, 'TRACK' is set to '1 1977 Kit' and 'BANK' is set to 'Bank A'. Below these, a 4x4 grid of pads is shown, labeled A 13 through A 16 in the top row and A 09 through A 12 in the second row. In the third row, A 05 is assigned to '1977 Bk 01 SI-19' and A 06 is assigned to '1977 Bk 01 SI-20'. In the fourth row, A 07 is assigned to '1977 Bk 01 SI-02' and A 08 is assigned to '1977 Bk 01 SI-23'. Pads A 01, A 02, A 03, and A 04 are empty. A yellow border highlights the assignment of A 07 to '1977 Bk 01 SI-02', and a green border highlights the assignment of A 08 to '1977 Bk 01 SI-23'. At the bottom, there are buttons for 'SAMPLE ASSIGN', 'AUDITION' (with a play icon), and 'CLEAR PAD'.

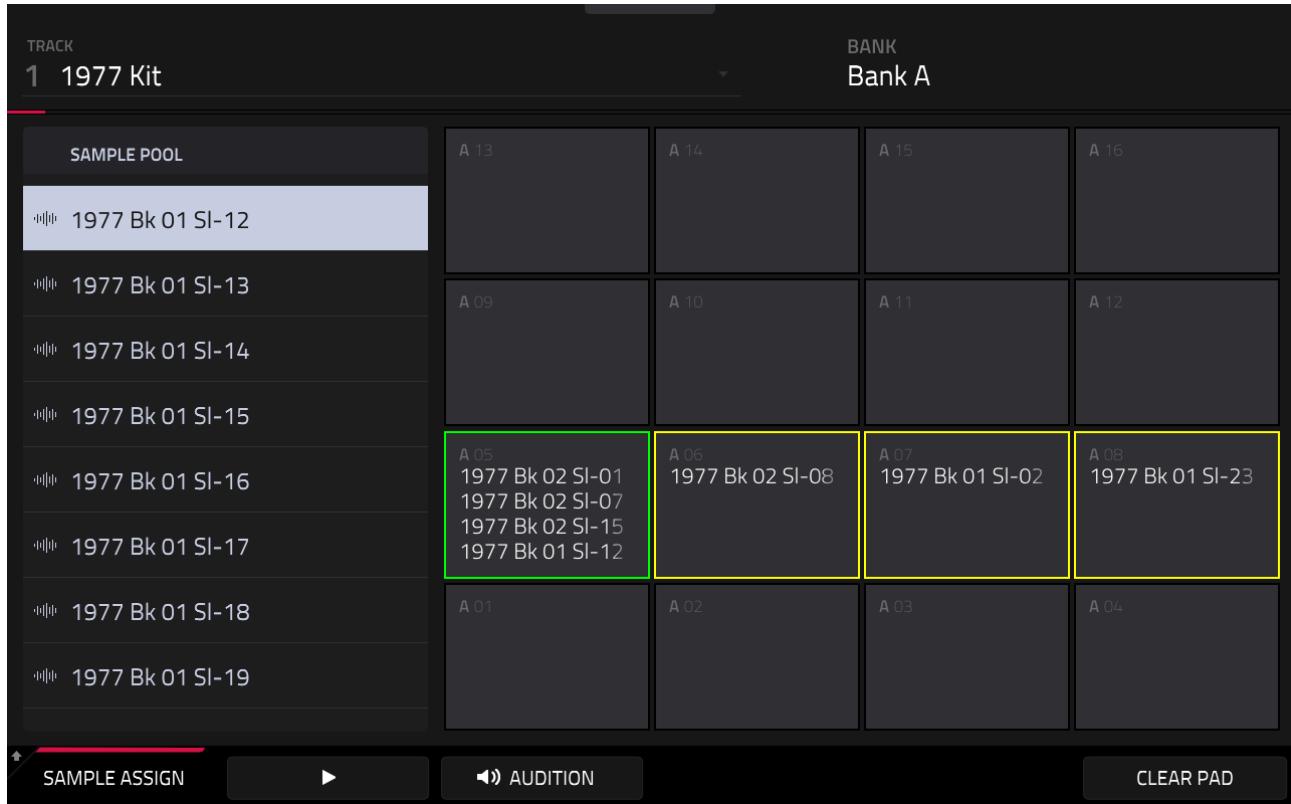
1977 Bk 01 S2-01 is a decent kick, so this should go on pad [A05], and **1977 Bk 02 S1-08** is a cracking snare, so that one goes on pad [A06]

C07: BUILDING DRUM KITS FROM CHOPS



Let's start adding some layers to act as 'round robins'. **1977 Bk 02 SI-07** is a nice 'pure' kick; hold down [**SHIFT**] and drag this to **LAYER 2** on pad **[A05]** along with **1977 Bk 02 SI-15** to **LAYER 3** and **1977 Bk 01 SI-12** to **LAYER 4**:

C07: BUILDING DRUM KITS FROM CHOPS

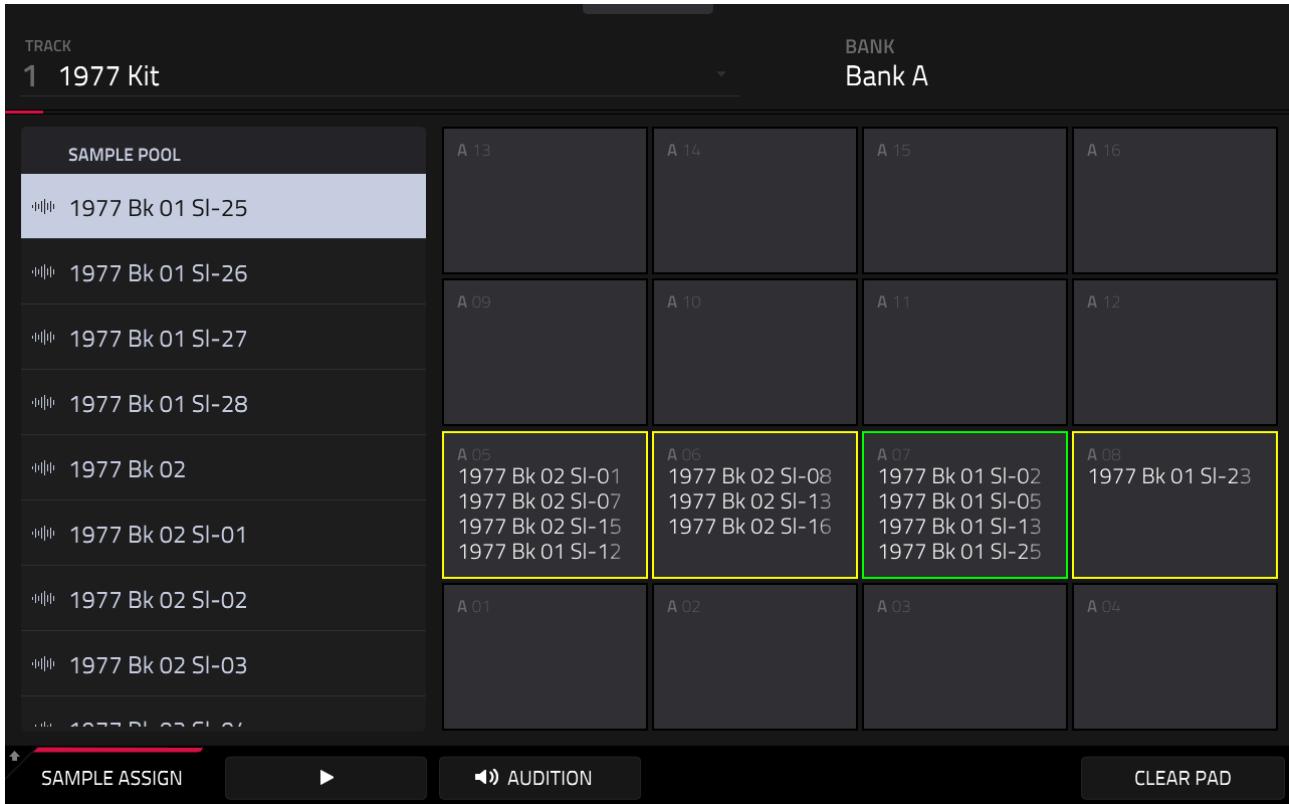


Repeatedly hit pad [A05] to hear the kick round robins in action.

Drag **1977 Bk 02 SI-13** and **1977 Bk 02 SI-16** to pad [A06]. The rest of the snares are a bit short, but three round robins is fine.

Drag **1977 Bk 01 SI-05**, **1977 Bk 01 SI-13** and **1977 Bk 01 SI-25** to the closed hat pad [A07]:

C07: BUILDING DRUM KITS FROM CHOPS

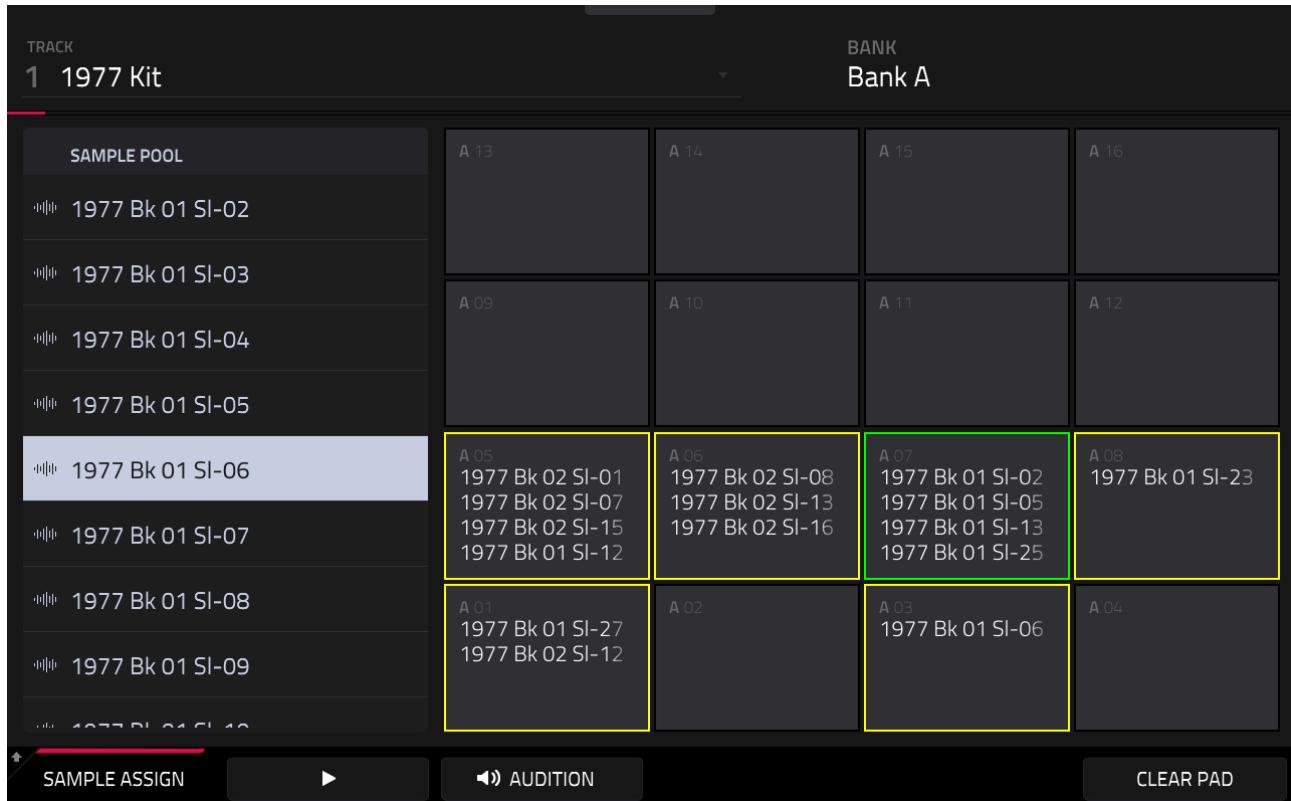


That's our four 'core' articulations. The kit is going to need some work but it's getting there. But there's still some more pads to fill. Select **1977 Bk 01 SI-27**, this is one of the shorter kicks, let's use this as a dedicated 'ghost' (or 'grace') kick.

Ghost hits are softer hits that can be added to provide a bit more groove, and in a finger drumming kit I like to have dedicated pads for a 'ghost' kick and a ghost snare.

So, drag that **1977 Bk 01 SI-27** to **LAYER 1** on pad **[A01]**, along with another ghost kick **1977 Bk 02 SI-12**.

Finally, **1977 Bk 01 SI-06** is a 'half open' hi hat, so let's put that on pad **[A03]**.



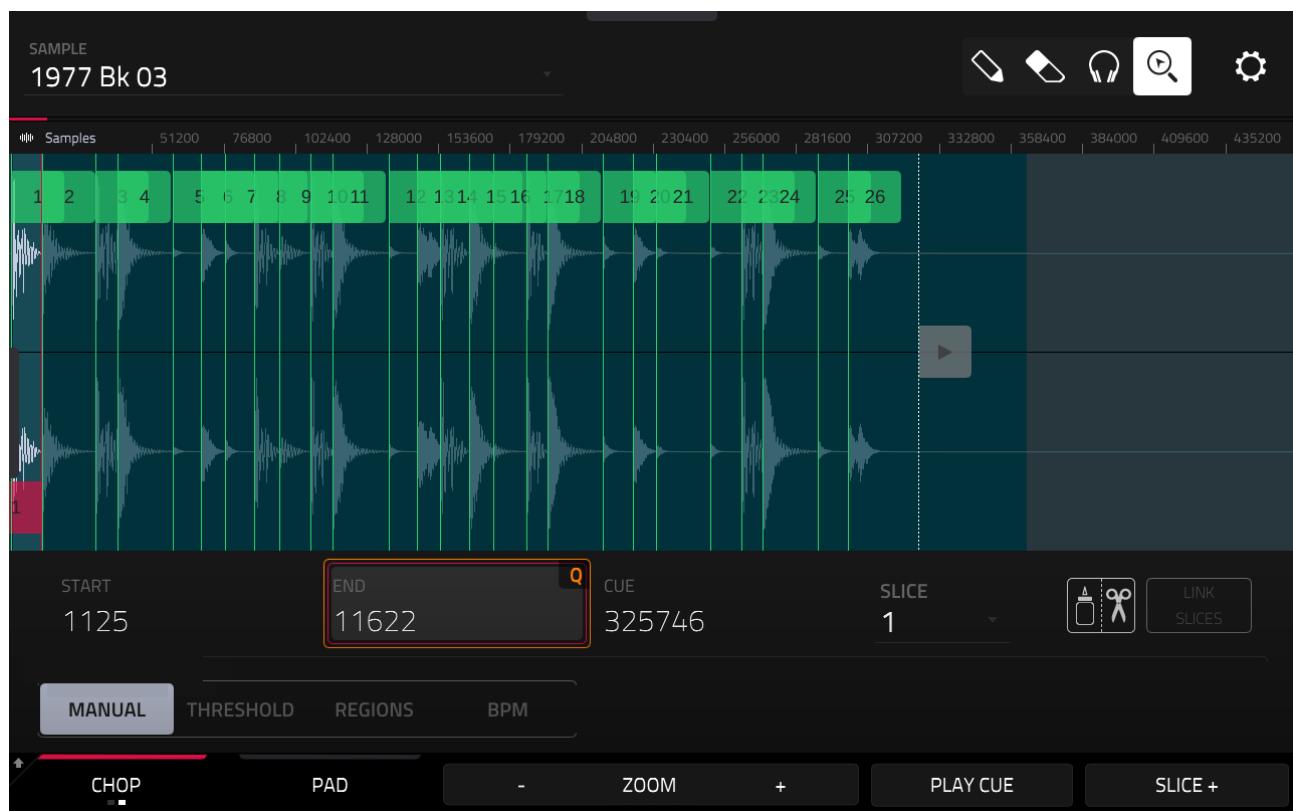
So that's pretty much it for those two breaks, but I have a couple more that I want to chop to add some extra goodies to this kit. So at this point I'm just going to clean up the sample pool to remove everything I don't need as it will help reduce the clutter.

Go to **[MENU]** > **PROJECT** and hit **PURGE** > **UNUSED SAMPLES**. Now there's only 15 samples in memory. If you wish you can load up my version of the project so far; **C07 Chops Purged.xpj**.

CHOPPING ANOTHER BREAK

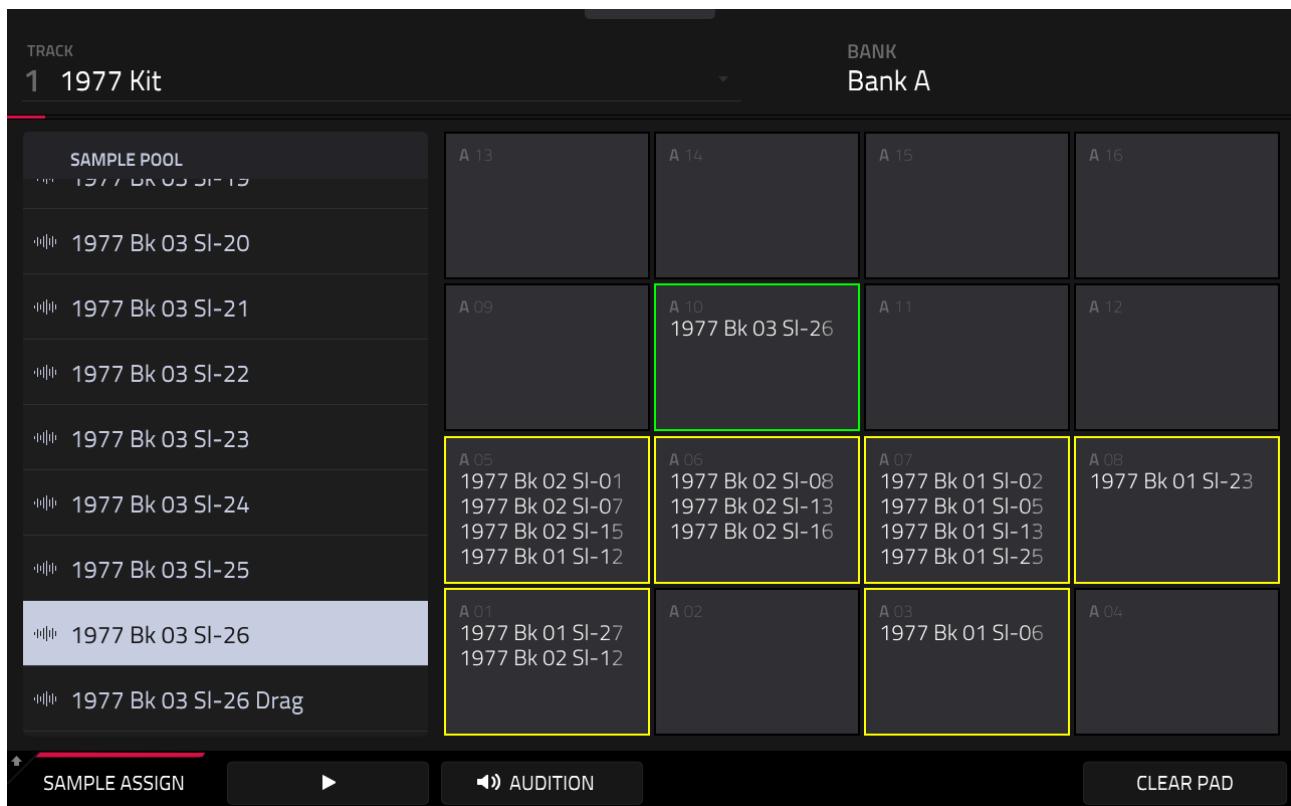
Go to [BROWSER] and hit **SAMPLE ASSIGN** to take you out of the 'assign' screen and back to the normal loading interface. From the **C07 > Breaks** folder, tap on **1977 Bk 003** and **LOAD TO POOL**.

Go to **SAMPLE EDIT > CHOP**. Make sure **LINK SLICES** is enabled and threshold chop this break like you did the previous breaks.



Select the last slice 26, which is a short snare roll, often called a 'drag'. Strictly speaking this is not a 'hit' as it contains two hits together, but I like to add these to my finger drumming kits as they do help add more groove and a live drummer feel. And despite having an inherent tempo, they are so short they tend to just fit in to most drum sequences pretty well without any editing.

CONVERT > '**Create New Samples**' as before. Head back to **BROWSER** > **SAMPLE ASSIGN** and place that 'drag' (**1977 Bk 03 SI-26**) to pad **[A10]**:

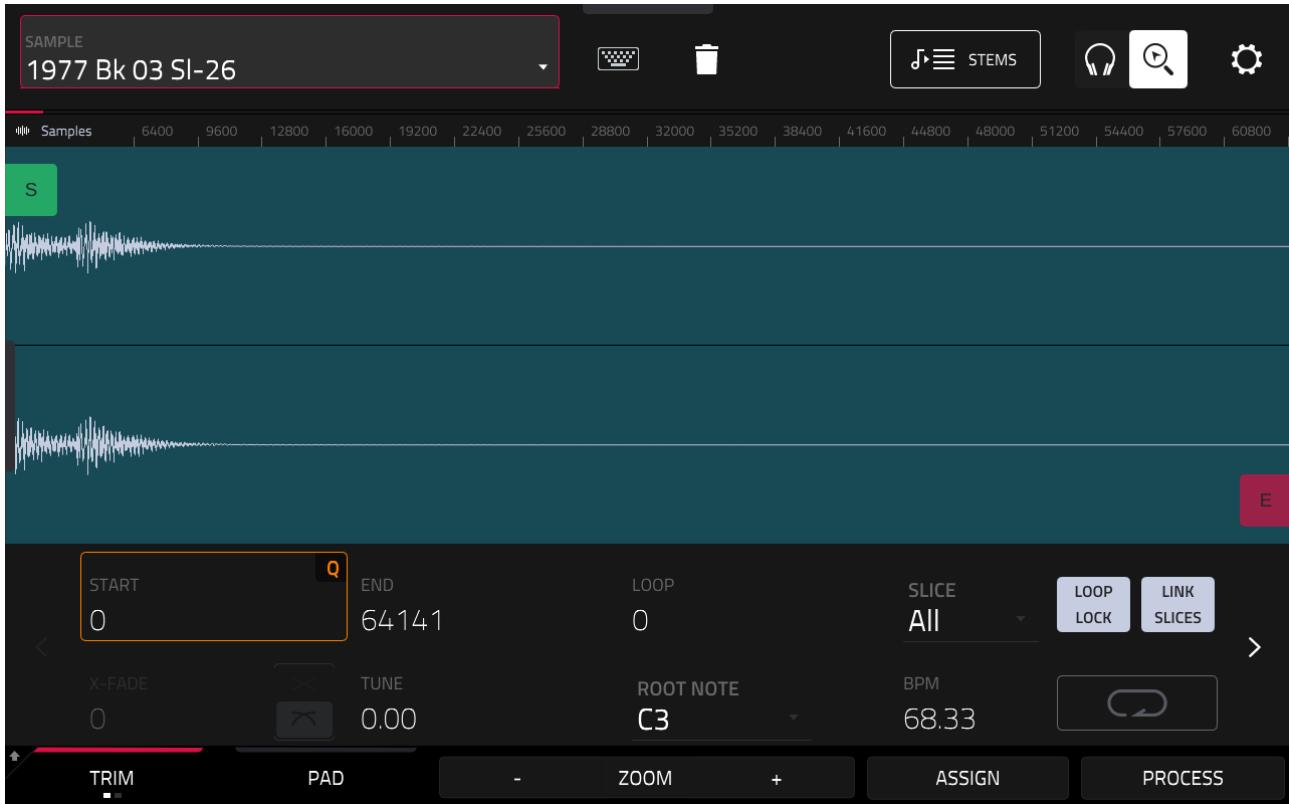


1977 Bk 03 SI-20 is a nice 'soft' snare which we can use as a dedicated ghost snare; so put that on **LAYER 1** on pad **[A09]**.

We can also make a ghost snare out of the 'snare drag'. There's a few ways to do this, but probably the easiest way is to just make a copy of the drag and edit the copy.

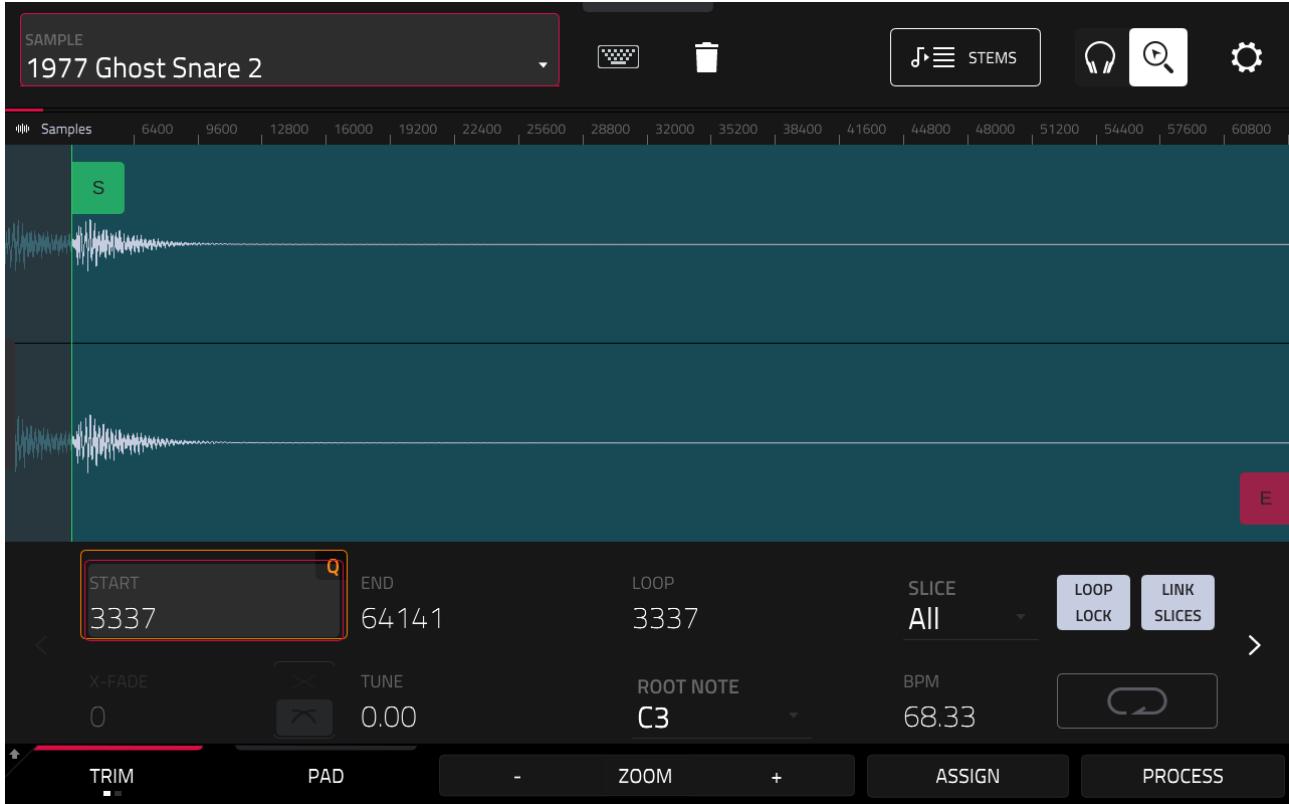
Tap on the snare drag pad **[A10]** and go to **SAMPLE EDIT** > **TRIM**.

C07: BUILDING DRUM KITS FROM CHOPS



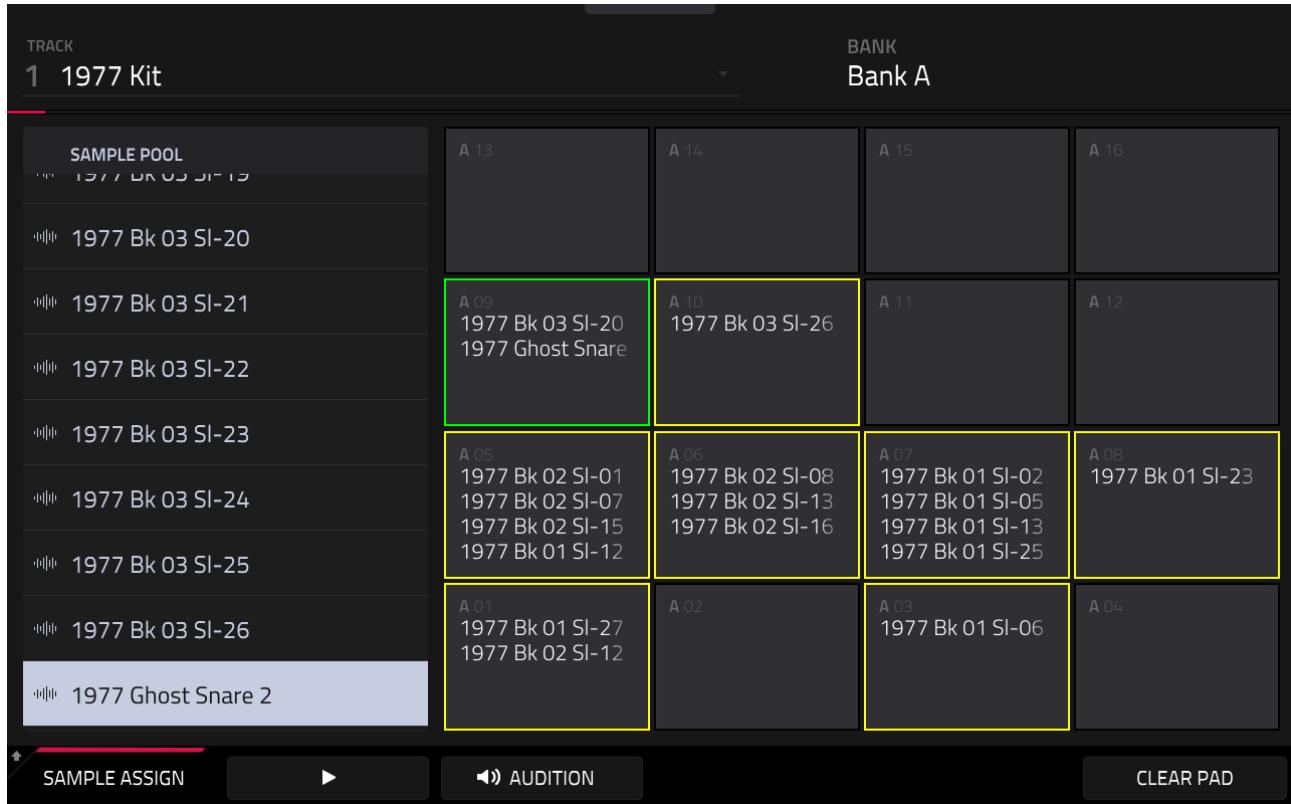
PROCESS > Copy and give it the name **1977 Ghost Snare 2** and edit the START point to begin at the start of the second hit within the drag:

C07: BUILDING DRUM KITS FROM CHOPS



PROCESS > DISCARD. Now back in **BROWSER > SAMPLE ASSIGN**, drag your newly create sample to **LAYER 2** of pad [A09].

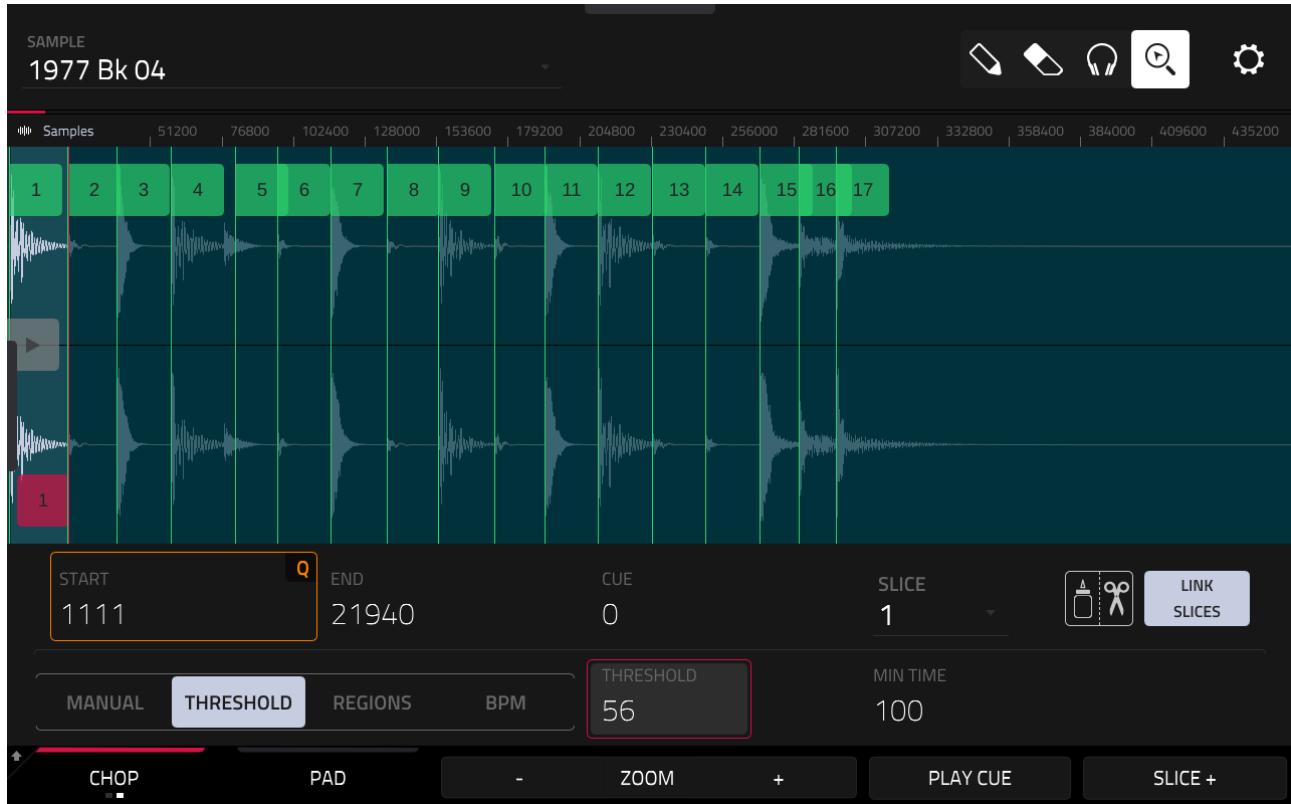
C07: BUILDING DRUM KITS FROM CHOPS



Finally, there's another snare drag on **1977 Bk 03 SI-13**, it's a but short but we'll try to deal with that later, so for the moment, drag that to **LAYER 2** on pad **[A10]**.

Load the break **1977 Bk 04** to the sample pool and threshold chop with a **THRESHOLD of 56**:

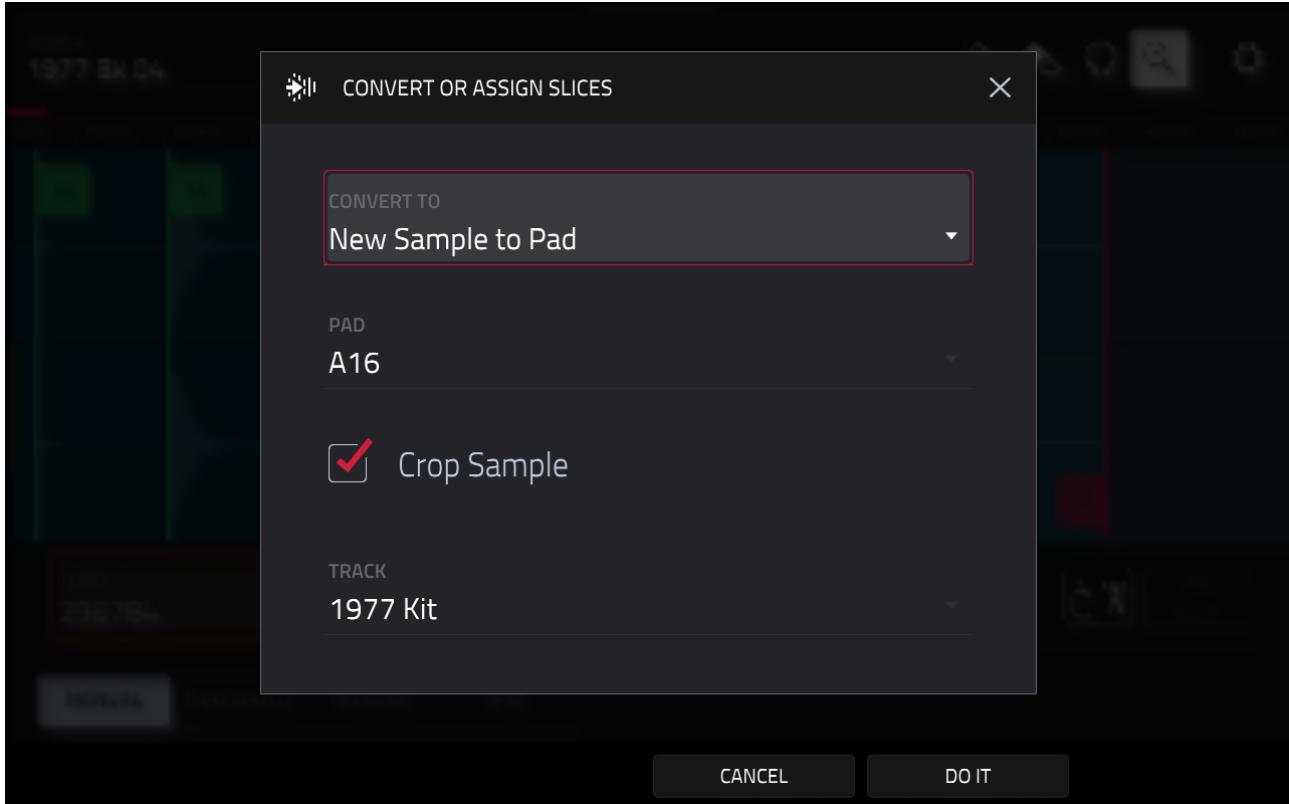
C07: BUILDING DRUM KITS FROM CHOPS



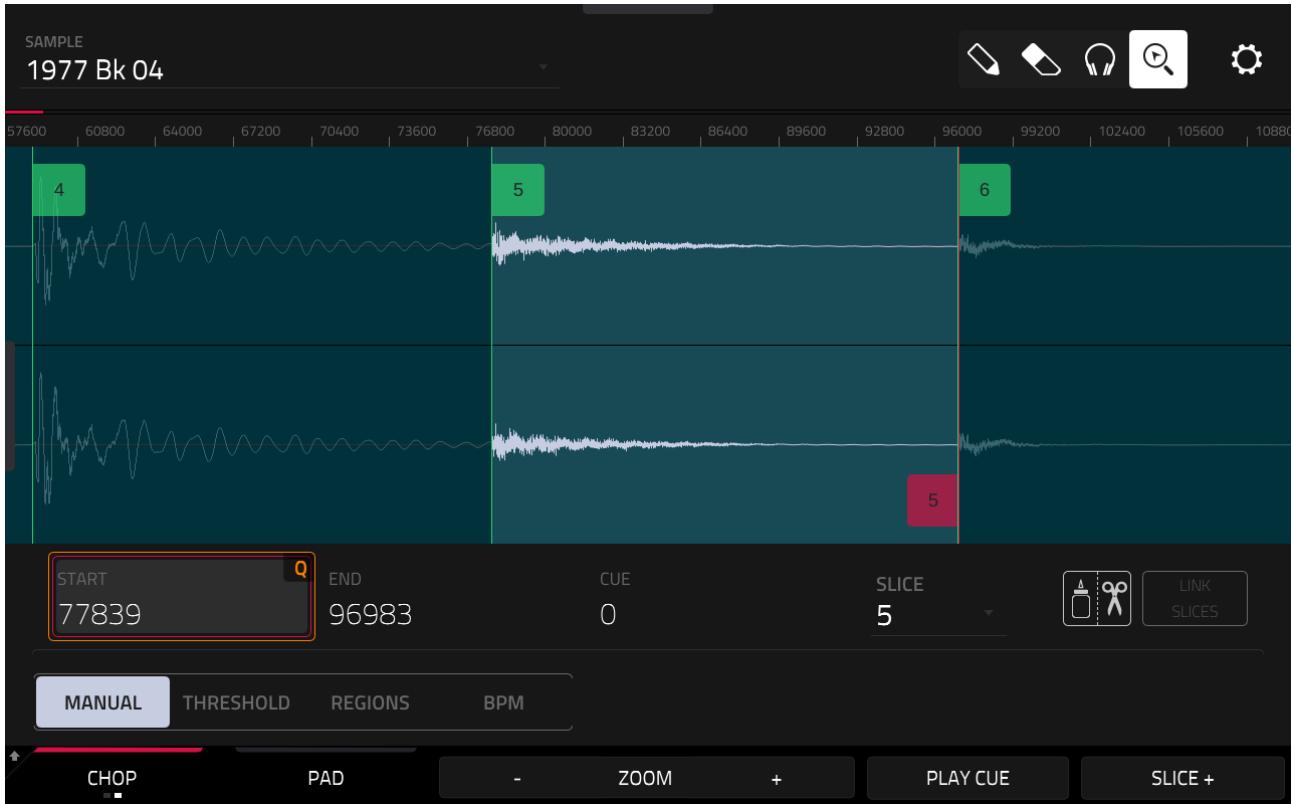
There's only two slices I want in this break, so rather than convert the whole break I'm just going to extract individual slices. The obvious one is that lovely tom on **SLICE 17**.

Adjust the END and go to **[SHIFT] > CONVERT > New Sample to Pad:**

C07: BUILDING DRUM KITS FROM CHOPS



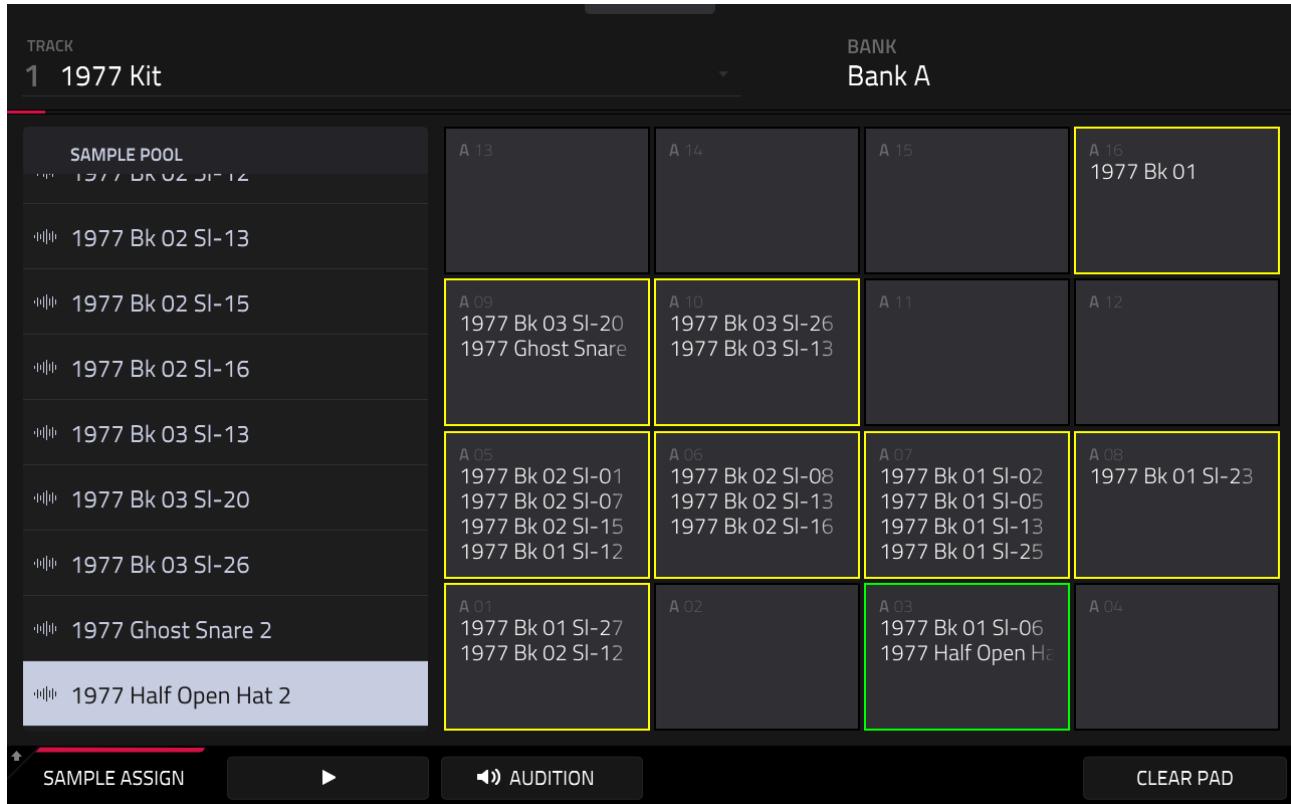
Hit pad **[A16]** to set this as the destination pad and hit **DO IT**. Back in **CHOP**, fix the **START** of **SLICE 5**:



This makes a nice 'half open hat', so let's 'convert and extract' just this slice to pad [A03]. Unfortunately a limitation of the 'New Sample to Pad' conversion is that it assigns the extracted sample to LAYER 1 on the target pad, which will overwrite the existing half-open sample already there.

We could still do this and just re-assign the original half-open hat to LAYER 2, but another option is to use **PROCESS > Extract**. Change the name to something a little less confusing (**1977 Half Open Hat 2**) and hit **DO IT**.

Now go back to **BROWSER > SAMPLE ASSIGN** and drag this new extracted hat to **LAYER 2** of pad [A03]:

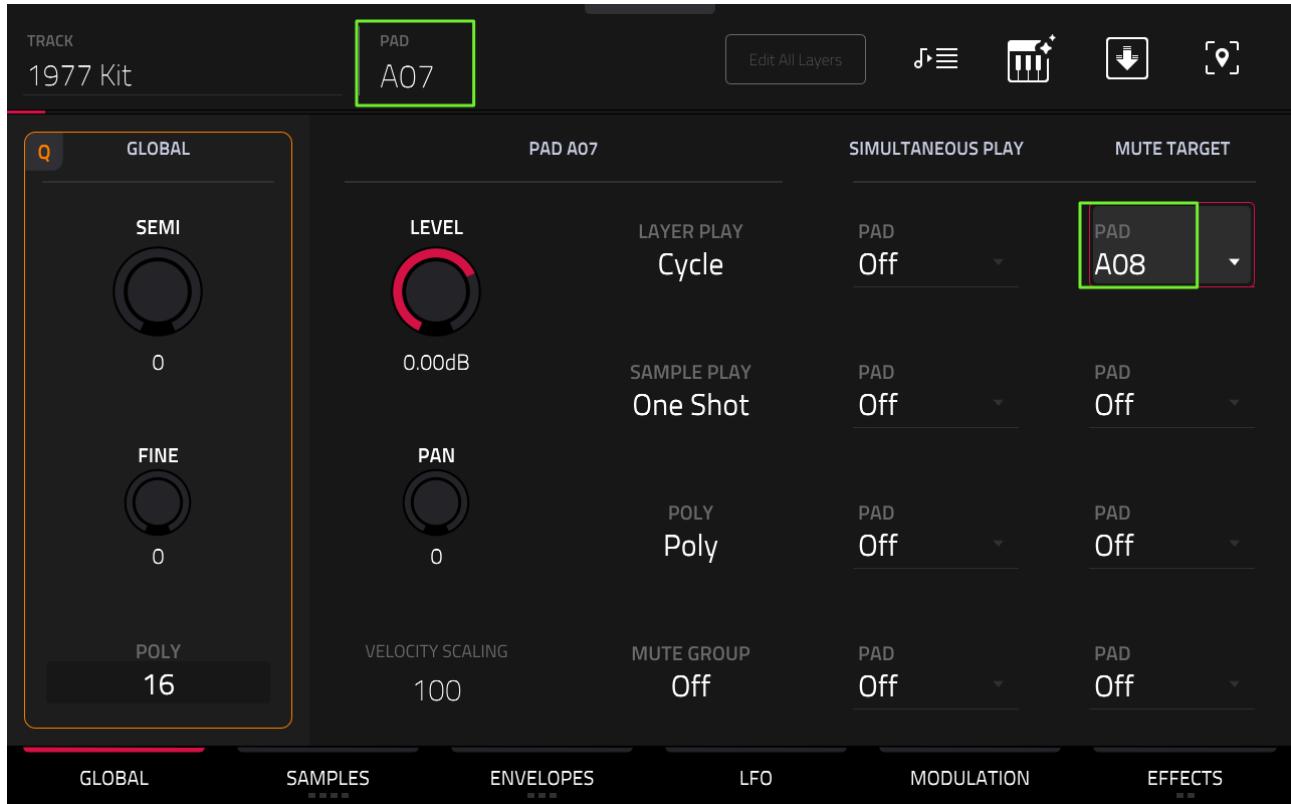


We're done with the chopping! Purge the sample pool and let's just finish off with some tweaks to get the kit sounding amazing. You can load up my version so far, **C7 Chops Completed.xpj**.

MUTE GROUPS VS MUTE TARGETS

Just a little bit of admin next. We want the hats to mute the open hat; go to **TRACK EDIT > GLOBAL**.

There's two ways to set up hi hat mutes. For a 'one way' mute we can use the MUTE TARGET feature we met in chapter **B02**; select pad **[A07]** and set **[A08]** as the first **MUTE TARGET**:



This literally means that whenever pad [A07] plays it should 'mute' the playback of pad [A08]. You can do the same with pad [A03].

Alternatively you can just set all three hat pads to the same mute group (e.g. mute group 1). This is a 'two way' mute, which is arguably more accurate, but does mean that each hat 'mutes' itself when played repeatedly, which sometimes can sound unnatural. How you set mutes up is really down to your personal preference, and mute groups are certainly a bit more flexible, especially if you have many pads that need to 'mute' each other.

Set **MUTE GROUP:1** for pads **[A03]**, **[A07]** and **[A08]**.

RANDOMISATION

For the pads with no round robins we can add a little randomisation to mimic natural timbre changes. Select pad [A08] and hit the **SAMPLES** button four times to enter the **RANDOM** screen:



Adding some PITCH randomisation is always a winner, you just have to ensure it's not too excessive. I've set **PITCH: 25** and this works well for this open hat.

OFFSET changes the 'start' position of the sample(s) on this pad. This is a tricky one because it can sound really good but it can produce a horrible initial click, so if using this I would suggest shaving a little **ATTACK** in the

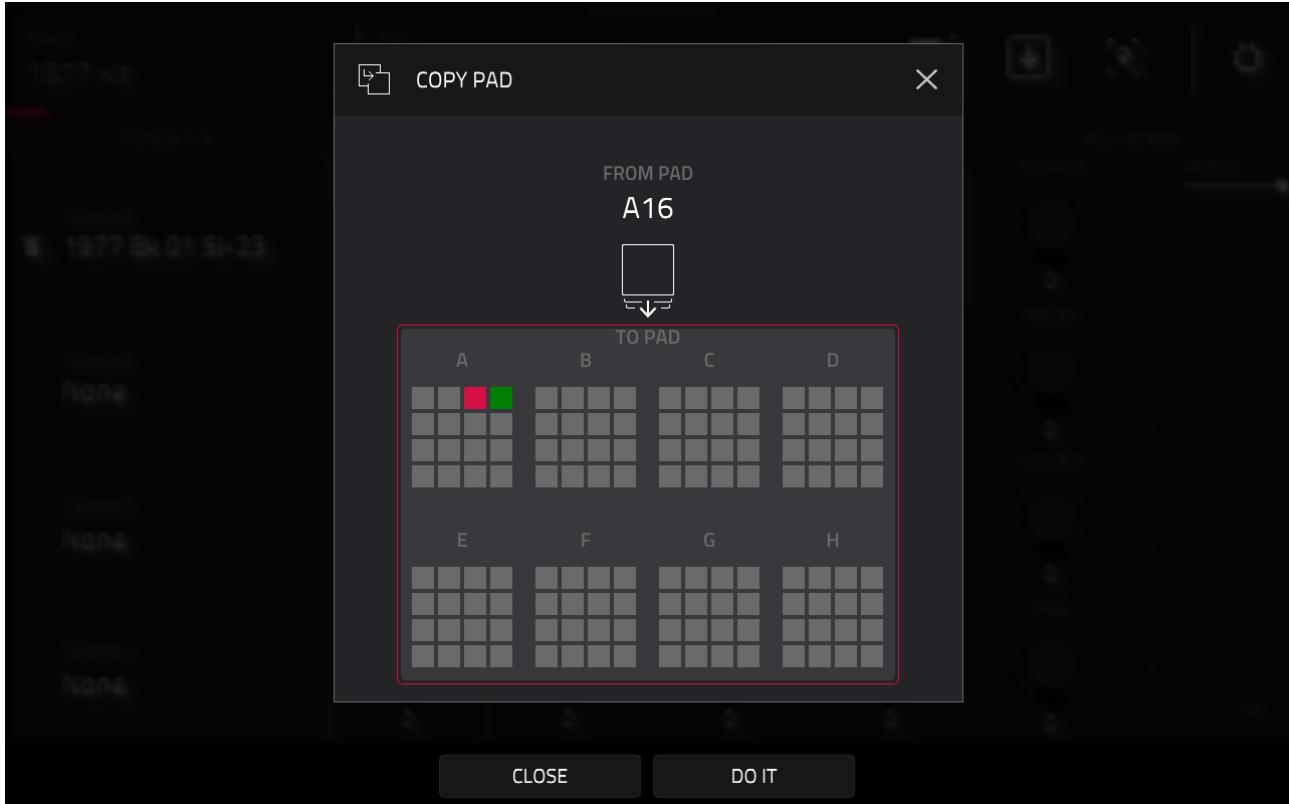
ENV:AMP screen to counter this (**ATTACK:12** worked for this sample, but this will vary, but keep it to a minimum if you want to retain some of that initial transient).

Do something similar for the tom on pad [**A16**]:

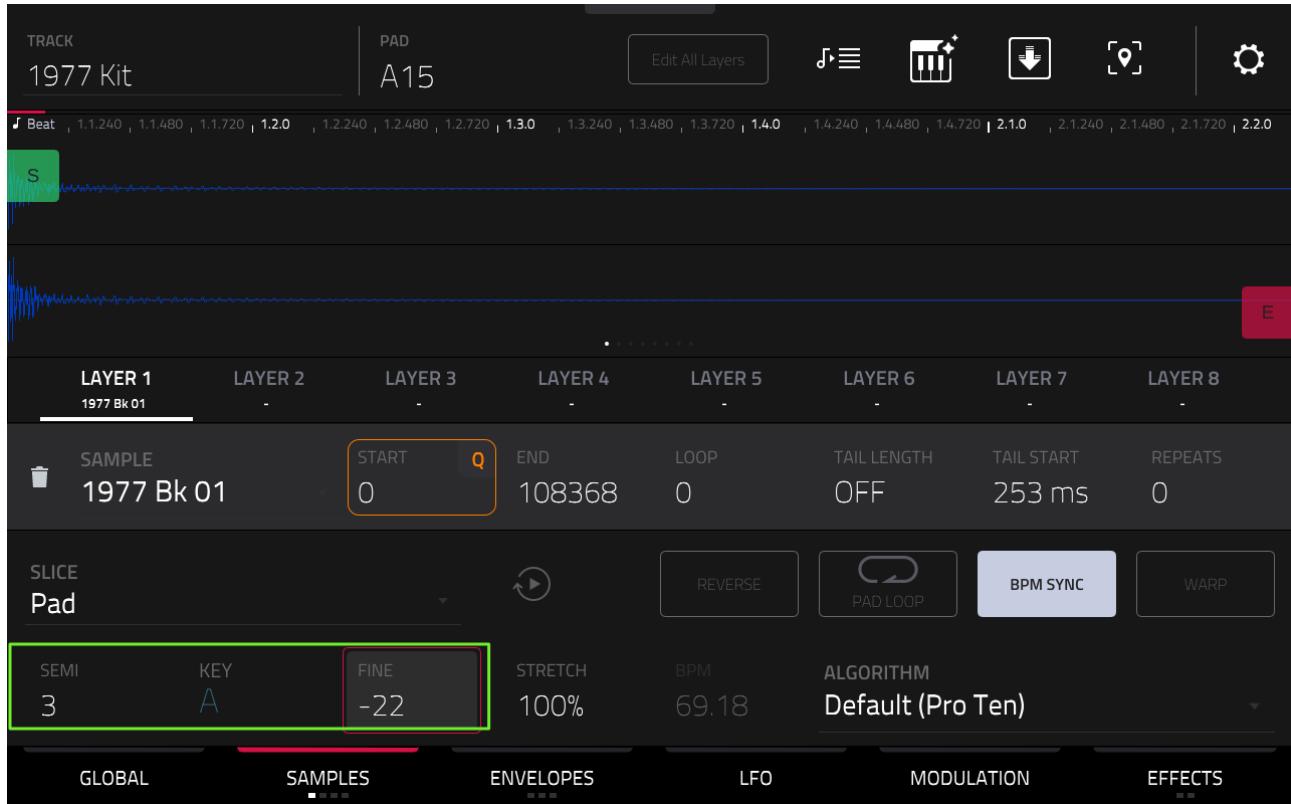


Talking of the tom, this is a low tom, but we can also try emulating a mid-tom. First make a copy; hold down [**COPY**] and tap [**A16**] to set it as the source, and then [**A15**] to set as the destination:

C07: BUILDING DRUM KITS FROM CHOPS



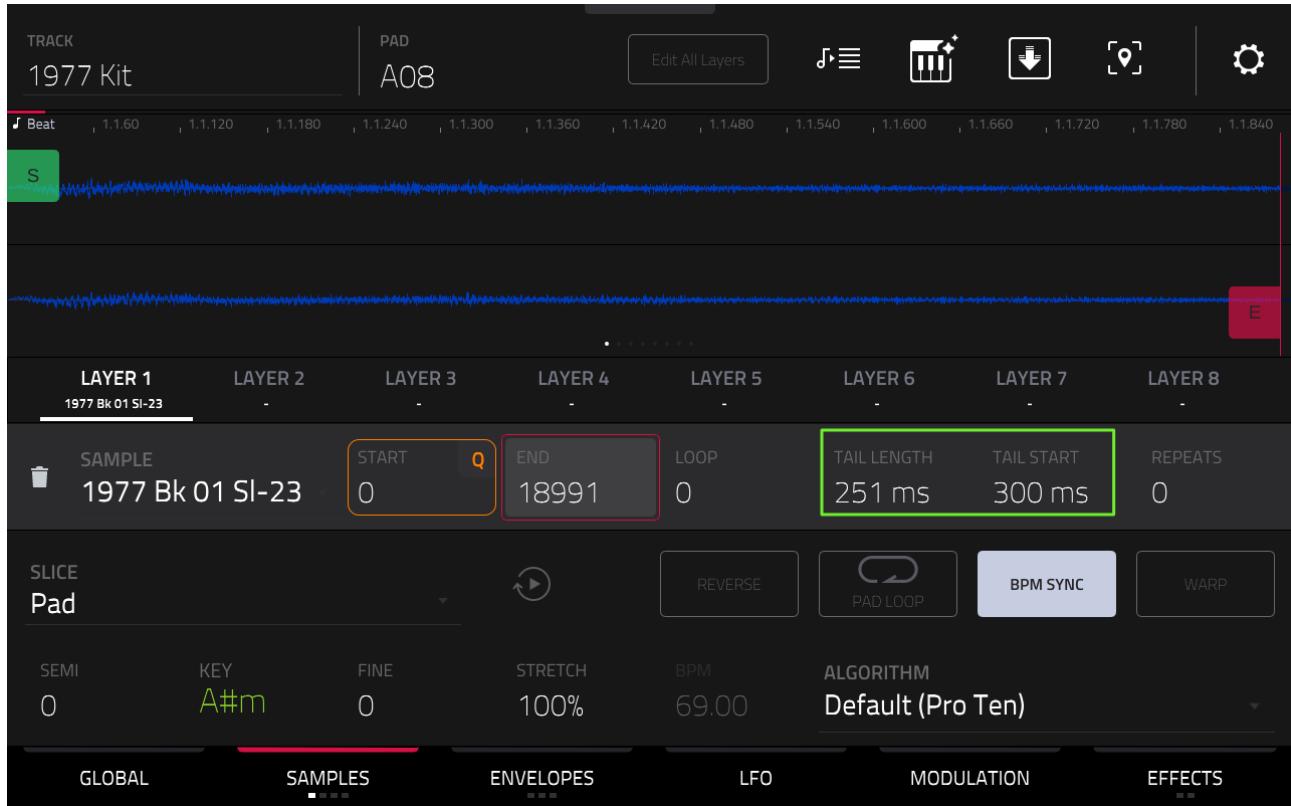
Now in **TRACK EDIT > SAMPLES**, increase the **SEMI** to **3** and tweak the **FINE** until you get the nice 'mid' pitch:



ADDING TAIL

You've no doubt noticed that some of the sounds end a little abruptly, so let's see if we can deal with this. One way is to use the 'tail' option. Let's try this on the open hat in pad [A08]:

C07: BUILDING DRUM KITS FROM CHOPS



Notice how I've taken the END point back a touch, as the very end of the sample (which is used to create the tail) was a bit too 'clicky', so this just makes the generated tail much smoother. Remember you can ensure a zero crossing point on this edit via the **'GEAR icon > ZERO SNAP: ON'**.

One of the snare drags on pad **[A10]** is very short so we can try TAIL on this as well. Now one of the problems with 'multi-layer' cycle pads is a) working out which layer is the one that needs editing, and b) how best to effectively 'focus' on that layer.

There is unfortunately no clever option here, hopefully one day Akai will add a 'layer solo' option, but for the moment the one option is to go to the next SAMPLES screen (**TUNE/MIX**) and temporarily set **LEVEL: 0** on one

layer and see if the remaining layer is the one you wish to edit. If not, set LEVEL back to 127 and set LEVEL: 0 for the other layer.

Another option is to stay in the **SAMPLES** screen and temporarily set **SEMI: 36** on one layer, as, while the layer is still audible, this will clearly differentiate the two layers allowing you to concentrate on editing the 'problem' layer.

Not ideal, but it is a workaround! Anyway, the 'problem' layer is **LAYER 2** so experiment with the most natural sounding **TAIL** settings:



Not bad, I couldn't really get it any longer than this (not without sounding terrible), but it's probably fine for most usages. Remember to set **LAYER 1**

back to **SEMI:0** after you've finished editing. Do the same for the 'ghost' kick layers on pad **[A01]**.

'Tail' is okay, but it's not 'great', it always sounds unnatural no matter what settings you use. If you really want to give your short chopped sounds a more natural sounding decay you'll need to get more creative. In the next chapter I'll look at more advanced sample editing technique that utilises audio tracks.

To finish off this stage of the kit building, I've added some pad colours – load up my version so far in the project **C07 Basic Kit Setup.xpj**.

C08: ADVANCED DRUM KIT SOUND DESIGN

We've built a nice drum kit from break chops but with some more advanced sound design tricks we can really elevate the song and flexibility of this kit.

SPLICING SAMPLES TOGETHER WITH AUDIO TRACKS

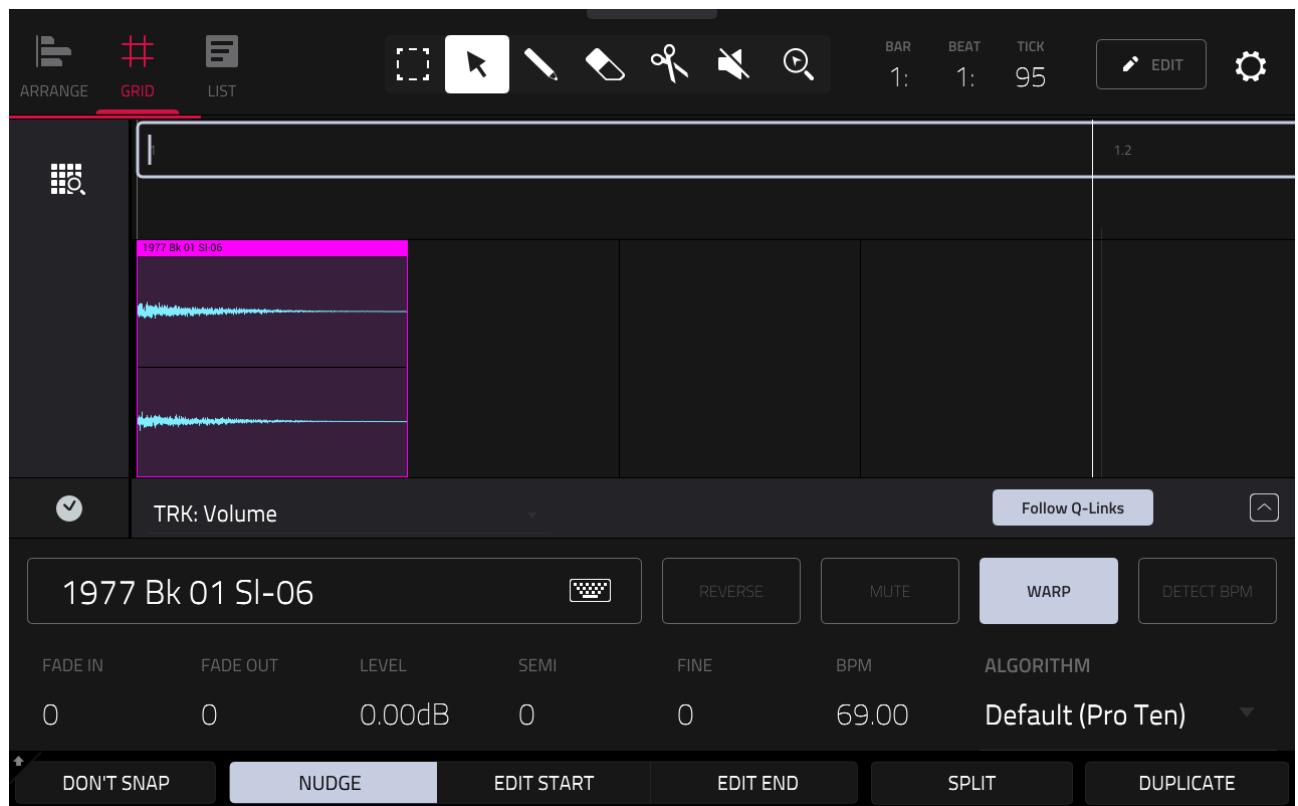
Load up the project **C08 Basic Kit Setup.xpj** from the **C08** folder – this is just a copy of the project we built in the previous chapter.

One of the editing tasks you can't achieve SAMPLE EDIT is to 'splice' together two different audio samples, but there is a way to accomplish this using audio tracks.

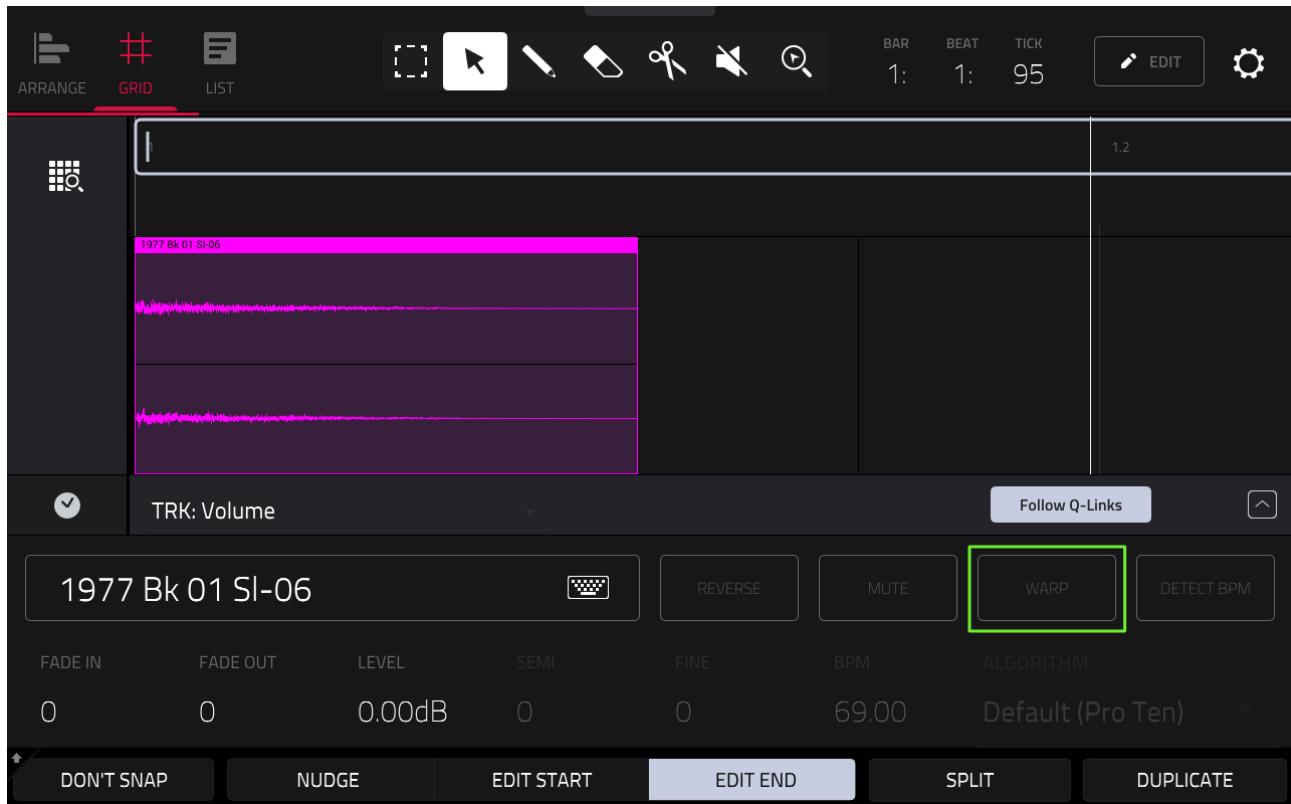
On pad **[A03]** we have two 'half open' hat samples. The sample on LAYER 1, **1977 Bk SI-06**, ends a little abruptly, so let's work some audio track magic to give it an extended ending.

In **[MAIN]**, create a new **AUDIO** track and call it **1977 Half Open Hat**. Double tap the track tab (or hit the **EDIT AUDIO** button).

Press **BROWSE SAMPLES** and from the **ADD SAMPLE** screen, insert the **1977 Bk 01 Sl-6** sample at the start of the audio track.



This is important – first, turn off **WARP**. After doing this the audio region does NOT re-adjust its length automatically, so hit **EDIT END** and use the (DATA WHEEL) to extend the region as far as possible:

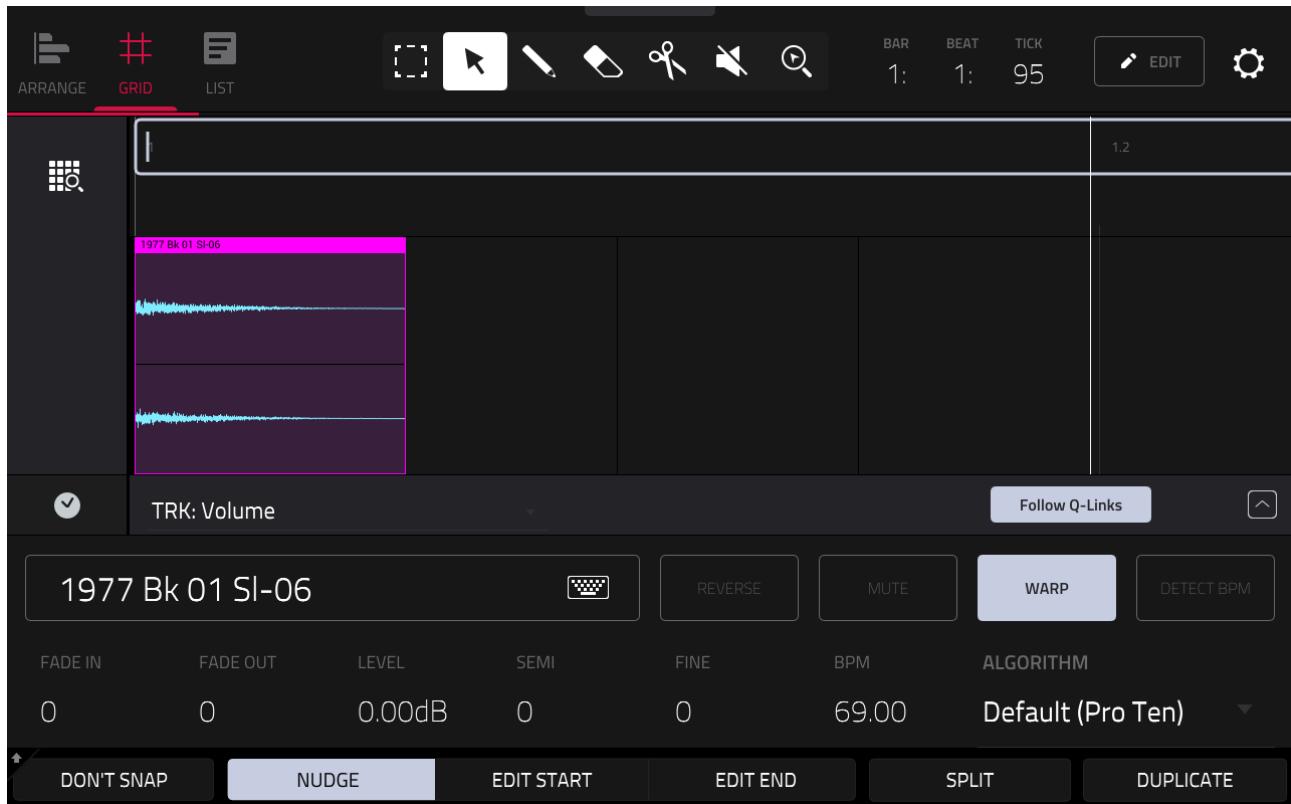


Or tap at the bottom right of the region and drag it to the right.



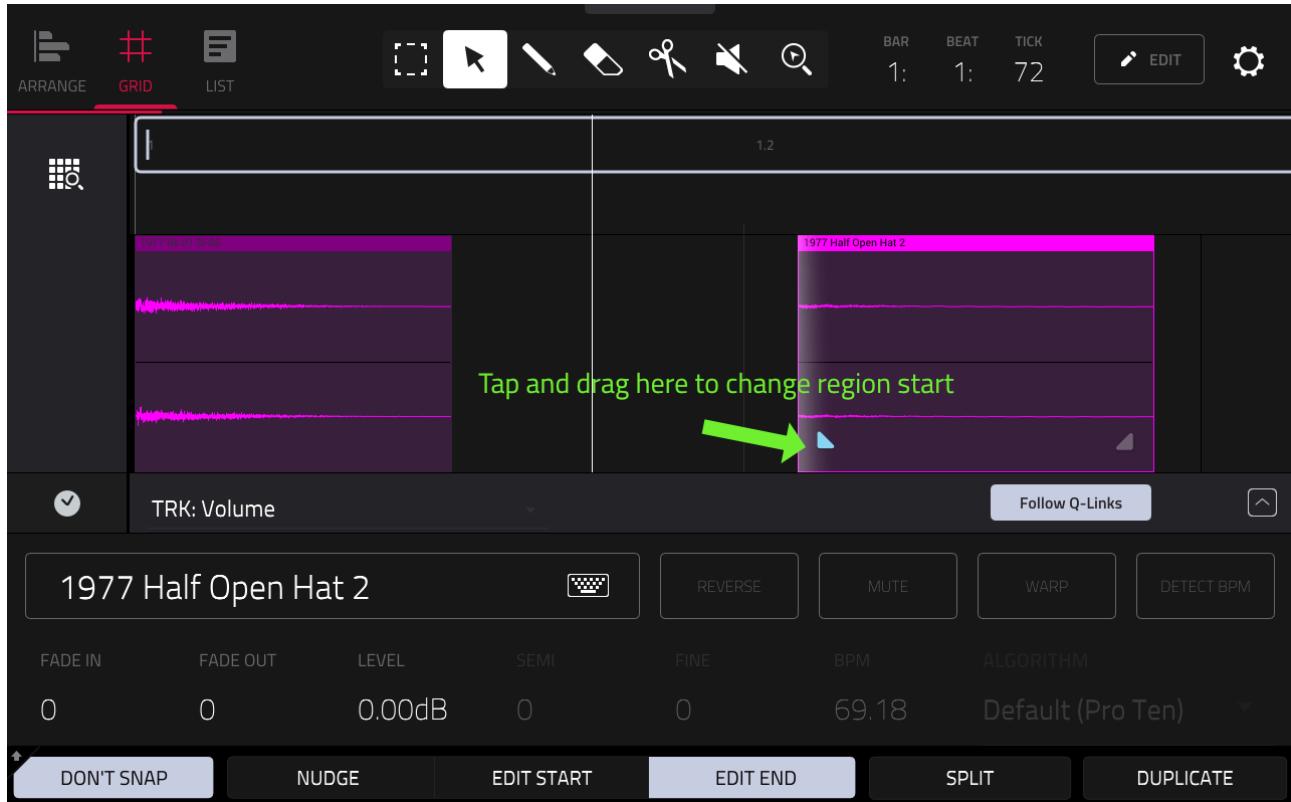
*If you prefer that audio is not automatically warped in your audio tracks, you can turn this off in **PREFERENCES > AUDIO / EXPORT AUDIO TRACK AUTO WARP***

Now tap on the timeline to place the playhead just after this audio region. With the select tool, tap within an empty space in the audio track and hit the **BROWSE SAMPLES** button again and this time add the sample **1977 Half Open Hat 2** – uncheck 'place at start'.



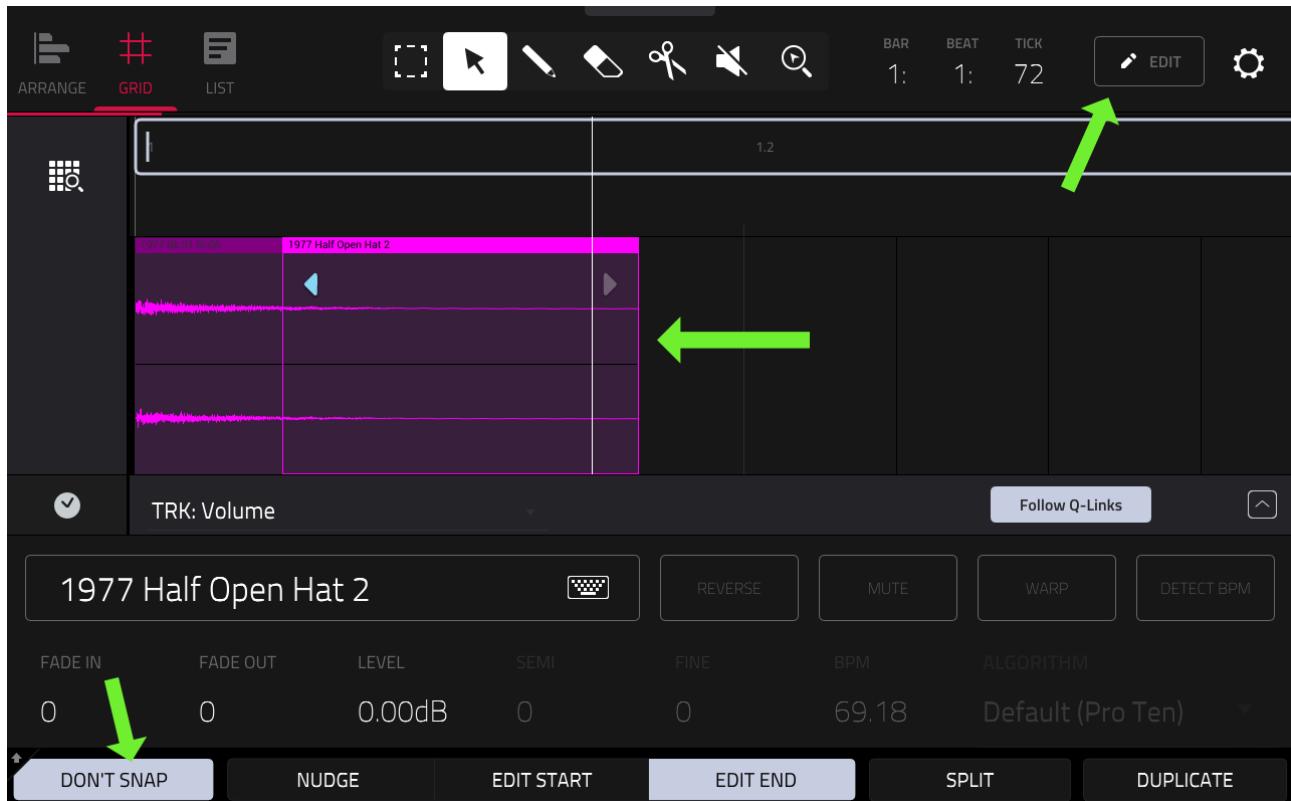
This is our half-open hat with the nice long tail. Again, remember to turn off **WARP** with this region and extend the region length fully.

Magnify so both waveforms can still be seen. Press **DON'T SNAP** in the bottom menu bar With the '**select tool**' enabled, tap in the bottom left of the second region so the white faded block appears at the beginning.

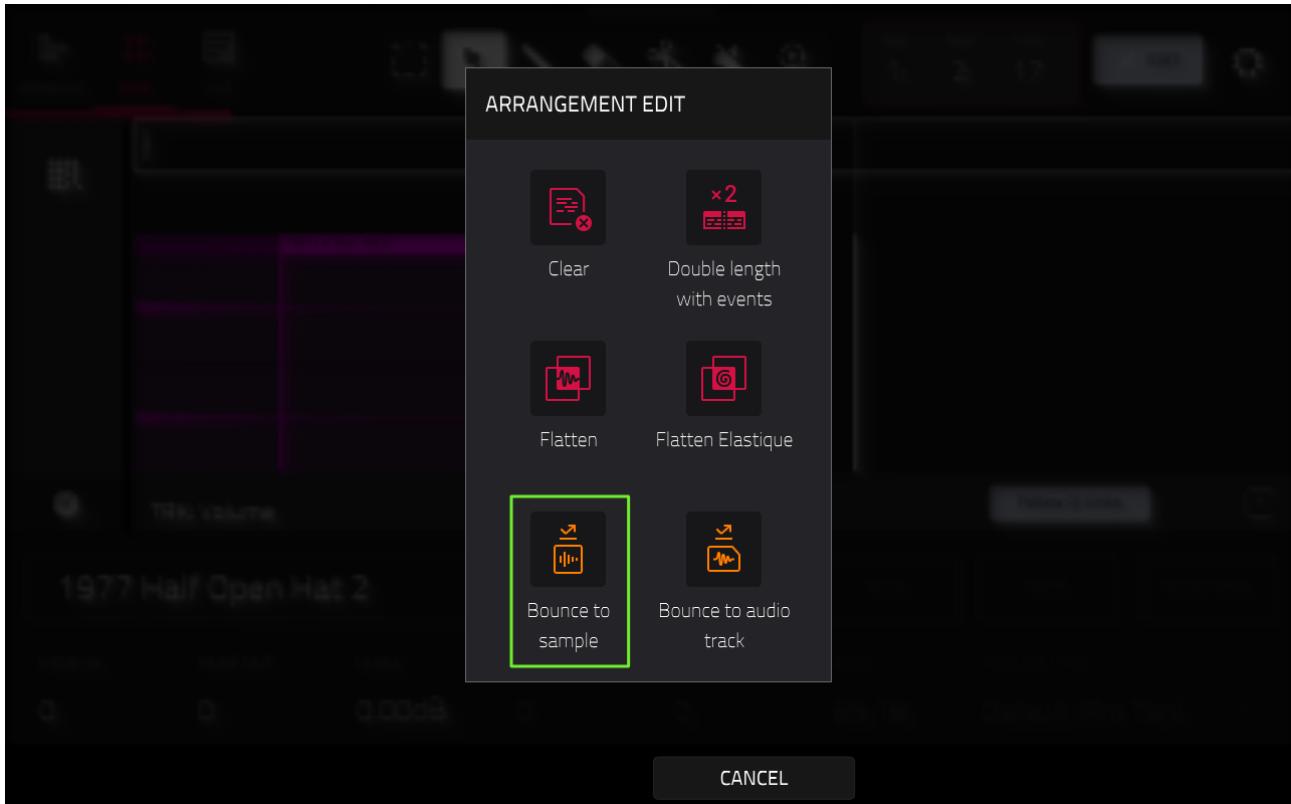


This indicates that you are about to edit the start of the region. Now drag your finger to the right until only the tail of the open hat remains.

Now tap in the top left of the region so the 'move' arrows appear and drag your finger to the left to move the region so it begins to touch the first region. Keep going until you can see the waveform amplitudes match:

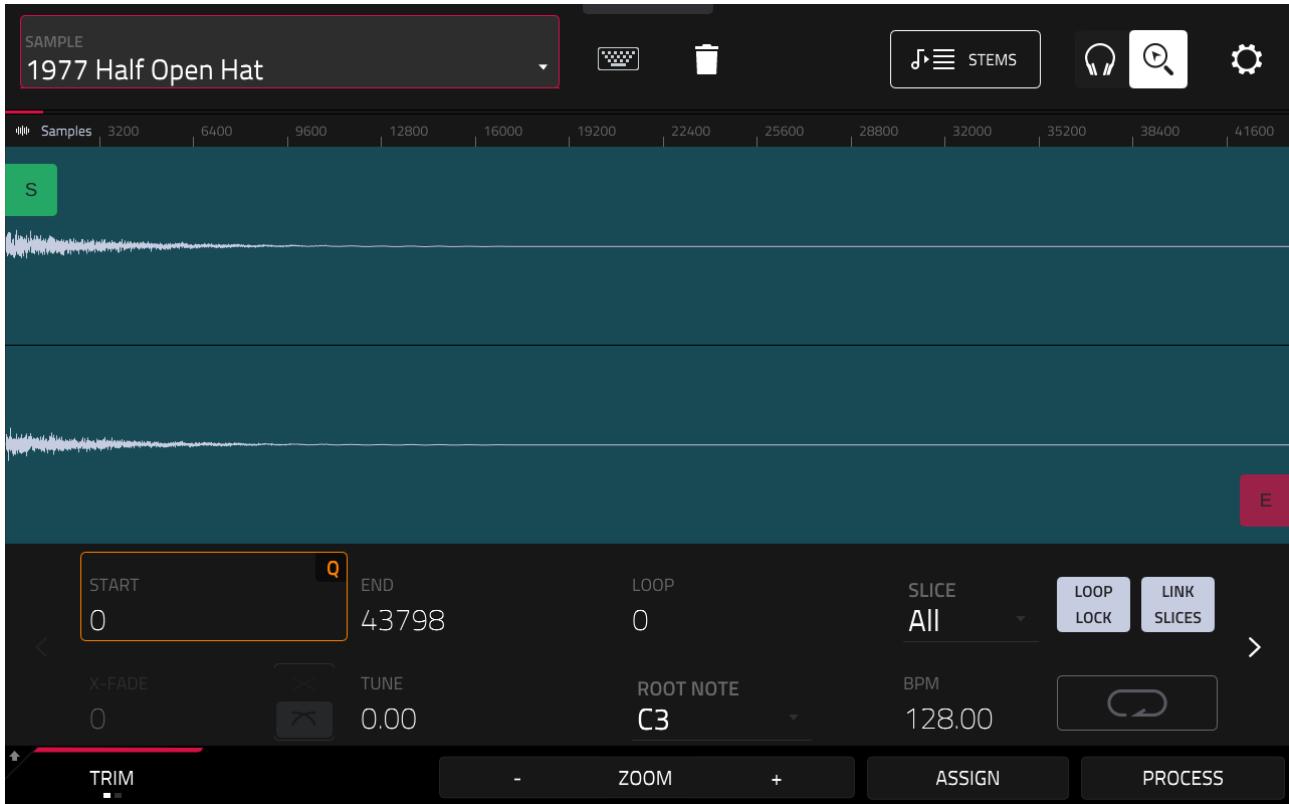


Press [**PLAY START**] – splice successful! To turn this into a 'standalone' sample that we can add to our kit, tap on the **EDIT** button in the top tool bar:



Select **Bounce to Sample**. You can leave the AUDIO TAIL at 0 as there's no reverb or delay to worry about. Hit **BOUNCE** and the MPC will 'bounce' (effectively, re-sample) this audio track to a new sample called '**Bounce - 1977 Half Open Hat**'.

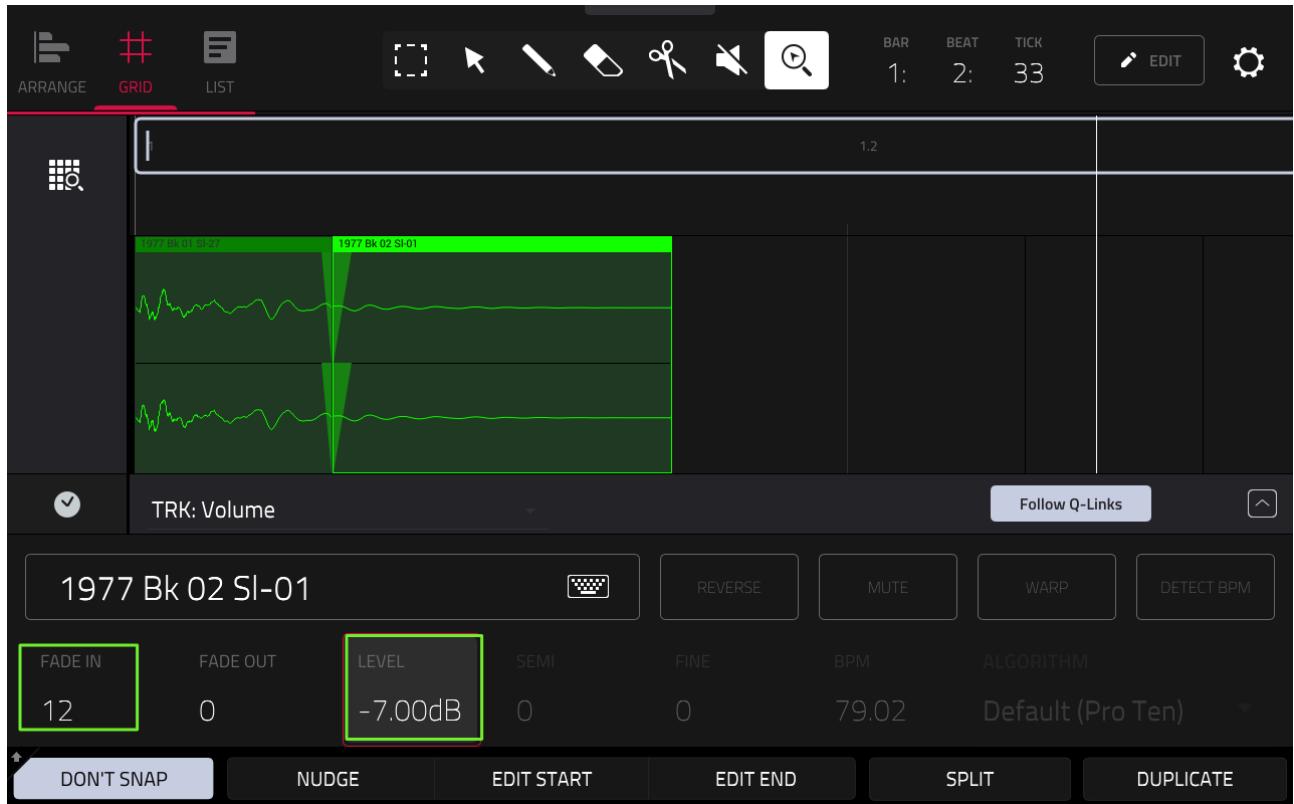
Go to [**SAMPLE EDIT**] to view; rename to '**1977 Half Open 2**' and take off the excess sample data from the end by changing the **END** point to around **43000** and then **PROCESS > Discard**.



In [MAIN], select the **1977 Kit** drum track and hit pad [**A03**]. Go to **TRACK EDIT > SAMPLES** and assign our new half-open hat to **LAYER 2**. Hit pad [**A03**] a few times to hear the new round robin in action – this sounds much better.

If you wish you can repeat this splicing process for the ghost snares (and any other sample where you prefer this to the 'tail' we added). Ultimately this option is always going to give you a better result than 'tail' as it's more natural sounding.

Sometimes you'll need to experiment, to avoid 'clicks' at the end point, you can try using **FADE IN** (on the right region) and **FADE OUT** (on the left region). Load up the project '**C08 Chops Spliced.xpj**' and take a look at **track 5** in the **EDIT AUDIO** screen:



Here you can see how I created a ghost kick with an extended tail, using fade in, fade out and some LEVEL adjustment to create the best balance. Remember to use [UNDO] if any region edits or moves don't work out.

ADDING MULTI VELOCITY ARTICULATIONS

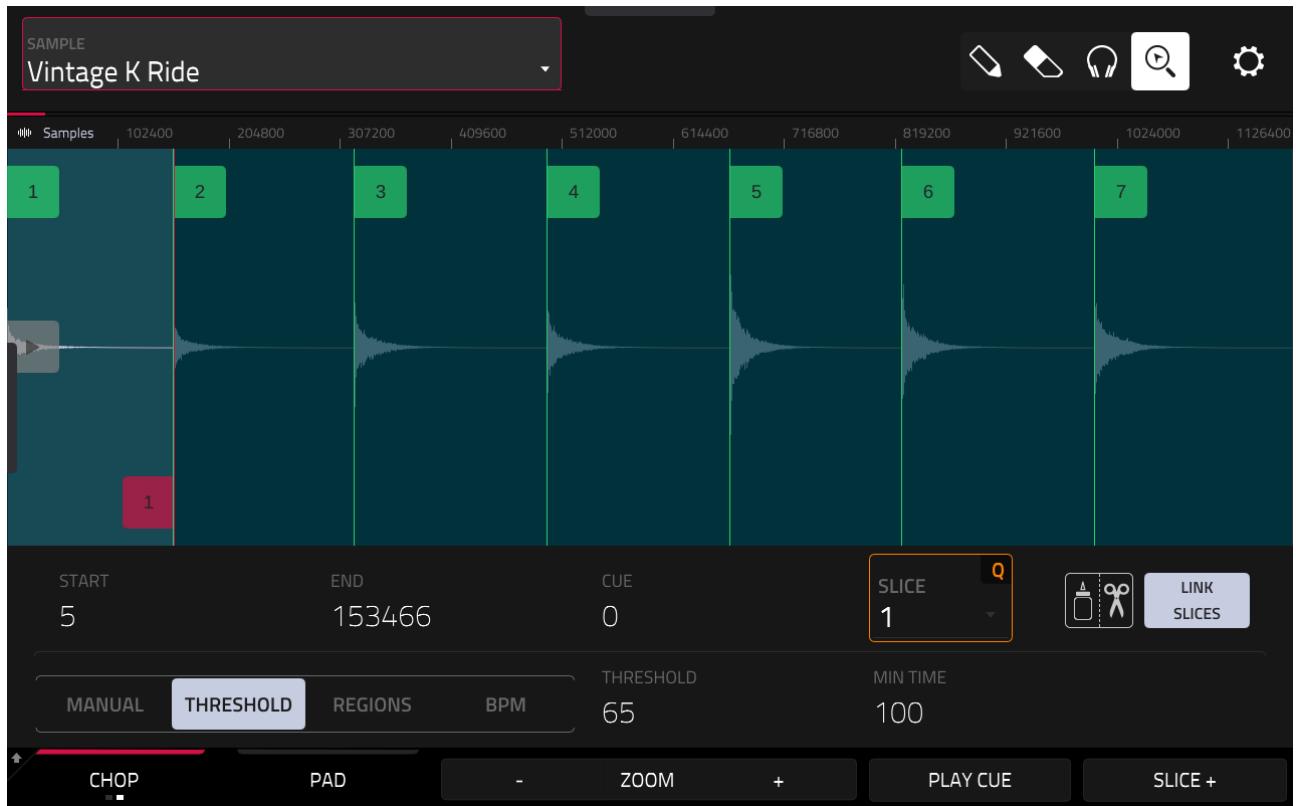
In addition to the realism of round robins, DRUM pads also support adding multi-velocity hits which trigger a different sample depending on which velocity you hit the pad.

From the **C08** folder, locate the sample **Vintage K Ride.wav** and **LOAD TO POOL**. Open it in **[SAMPLE EDIT] > TRIM:**



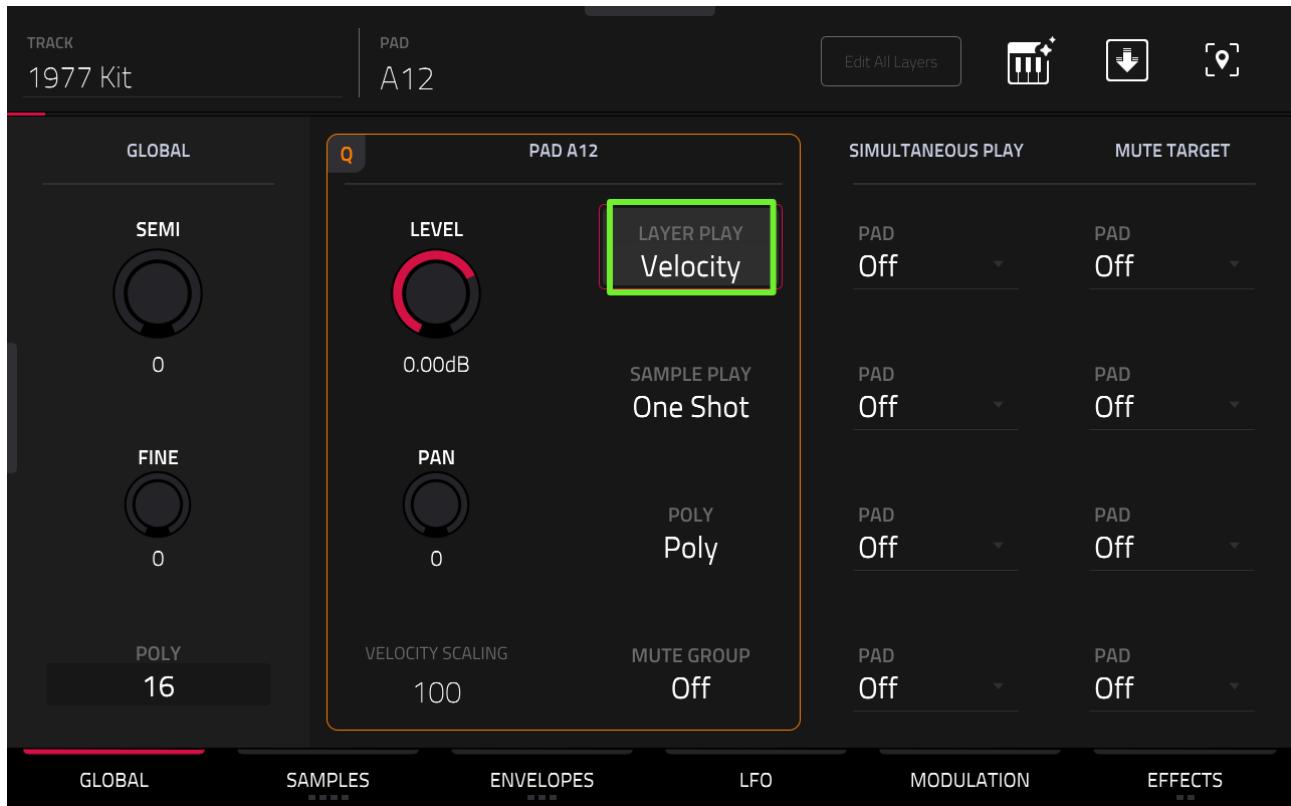
Hit [A01] to preview. As you can hear, this sample actually contains several rides – in fact, it's a 'multisample' recording of the same ride played multiple times (similar to the electric bass multisample recordings we were using chapter C05).

Go to **CHOP** and **THRESHOLD** chop it:



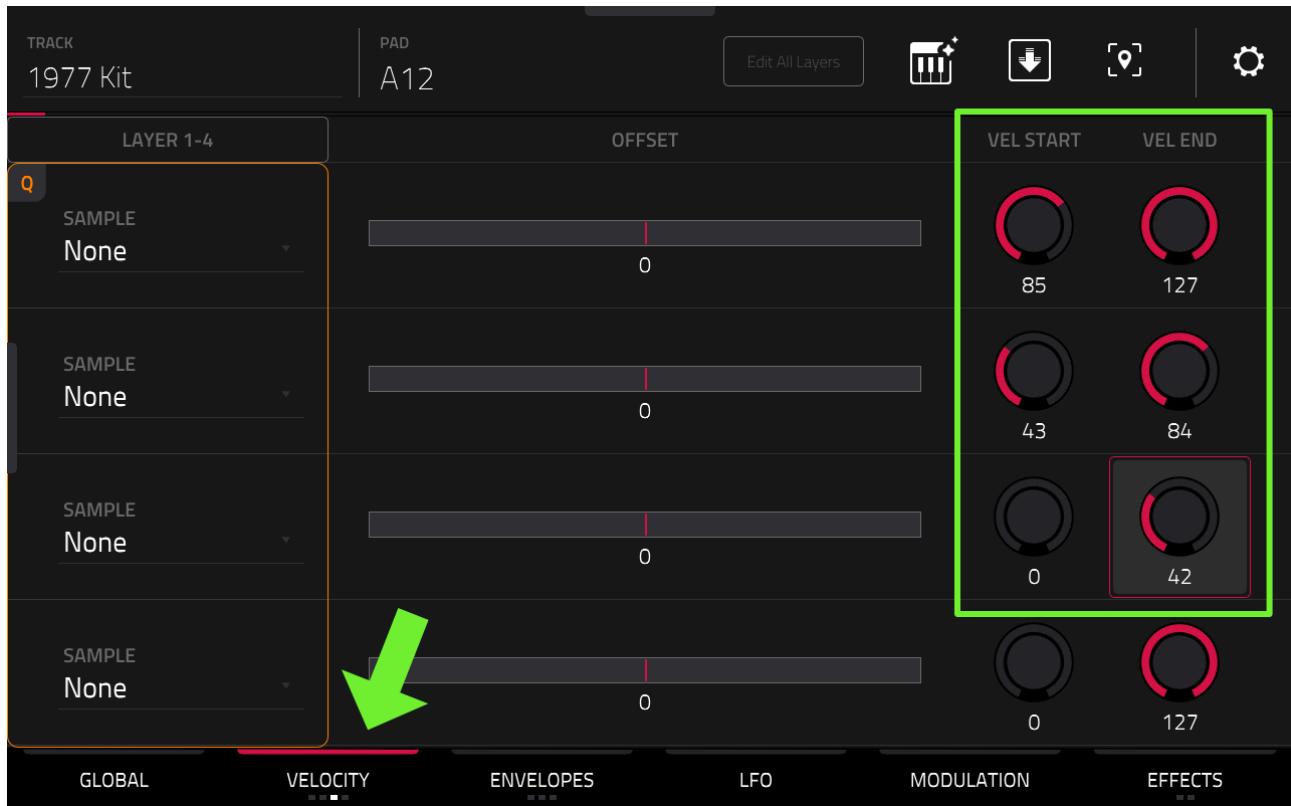
Preview the 7 slices; you can hear that the ride has been recorded at different velocities. The first two slices are played softly, the next two are played with a medium velocity, and the last three played with a slightly harder velocity. Let's use this sliced sample to create a very realistic sounding ride pad.

Go to [**MAIN**] and select **track 1, 1977 Kit**. Now go to [**TRACK EDIT**] > **GLOBAL**, select pad **[A12]**



The first thing we want to do is set this pad to **LAYER PLAY** to '**Velocity**'. This will allow us to set up 'velocity switching' where the pad will play a different sample layer depending on how hard you hit the pad.

Now go to the **VELOCITY** screen:



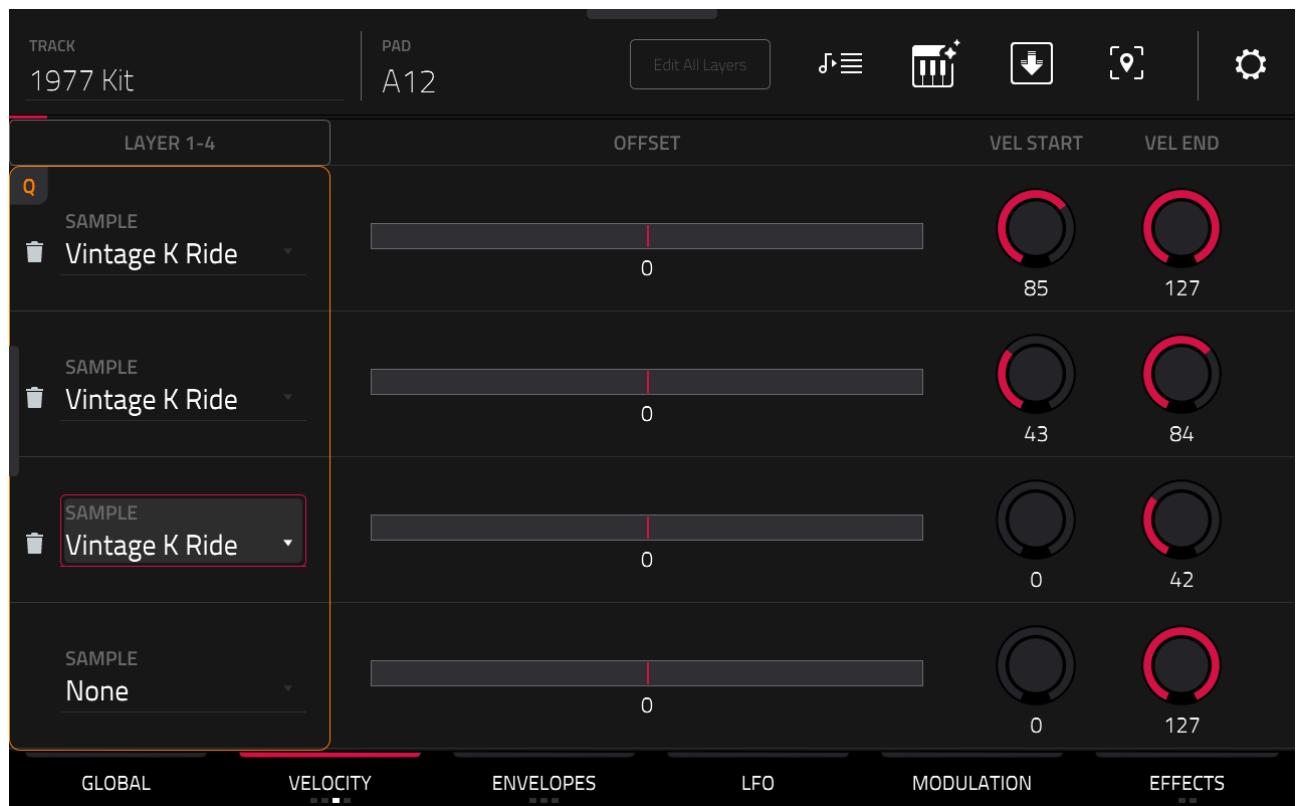
Here we configure the 'velocity range' for each pad layer. We have three different velocity levels (soft, medium, hard), so let's just split the layers equally – 127 divided by 3 is approximately 42 per layer. Configure the three layers as per the image above.

So we have the **'soft'** layer (**LAYER 3**) covering pad hits with velocities **0 to 42**. **LAYER 2** handling '**medium**' pad hits (**velocities of 42 to 84**) and **LAYER 1** for the **hardest** pad hits (**velocities 85 to 127**).

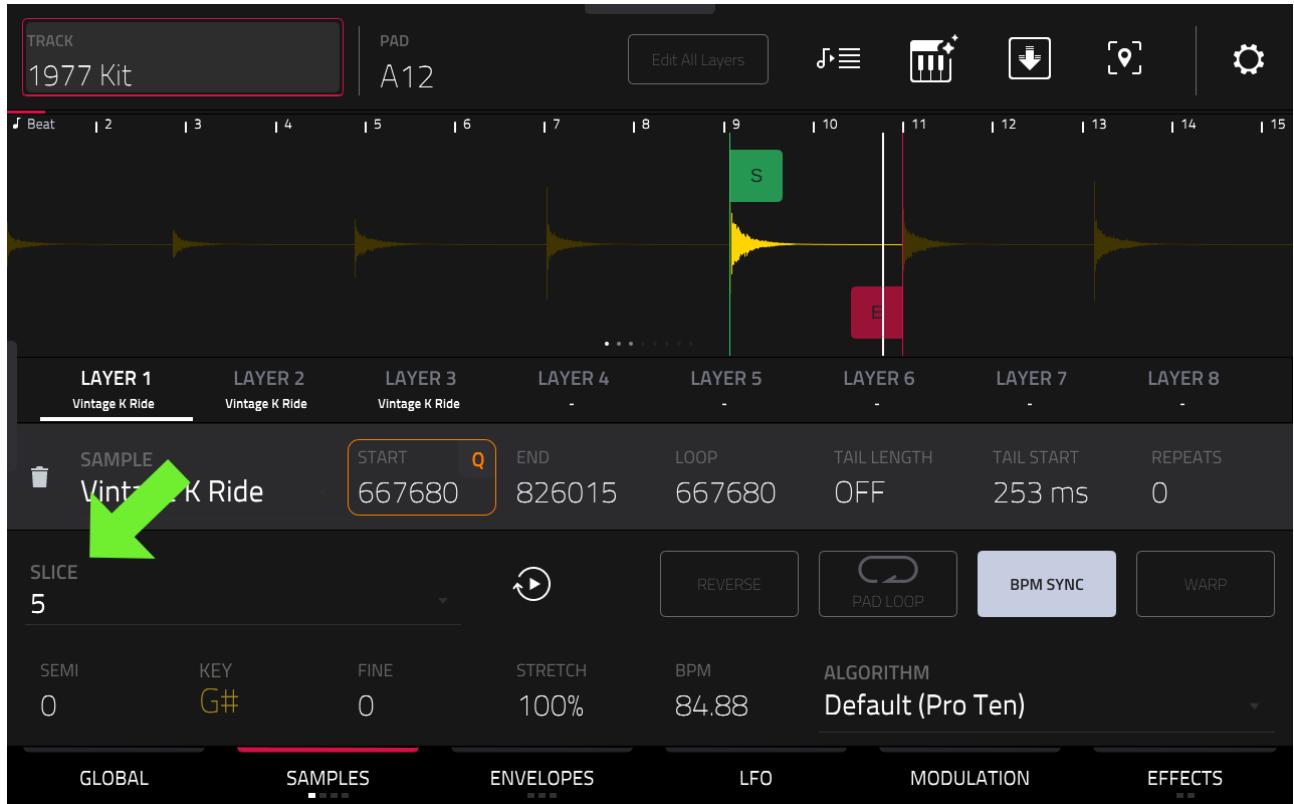


*If we have the available samples, we can configure up to 8 velocity layers per pad. You will see layers 1-4 by default, but hit the **LAYER 1-4** button and you'll be able to configure layers 5-8.*

Assign the **Vintage K Ride** sample to all three layers:



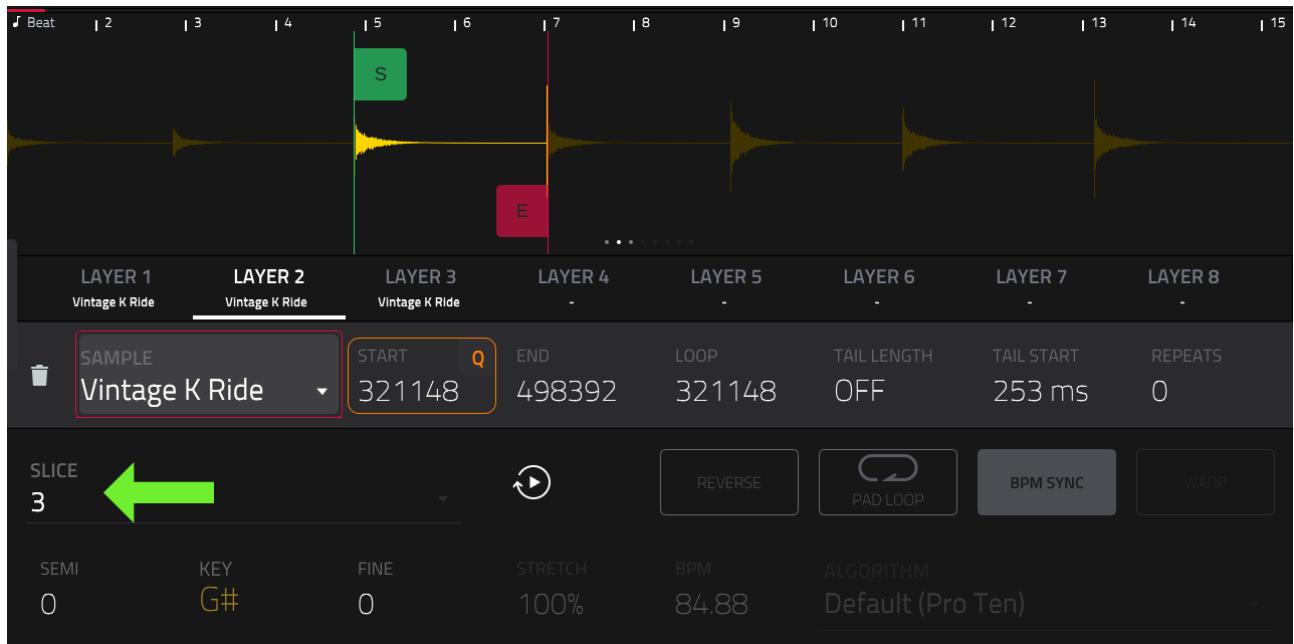
Now go to **SAMPLES** and select **LAYER 1**; set this to use **SLICE: 5**, which is the first 'hard' sample in our recording:



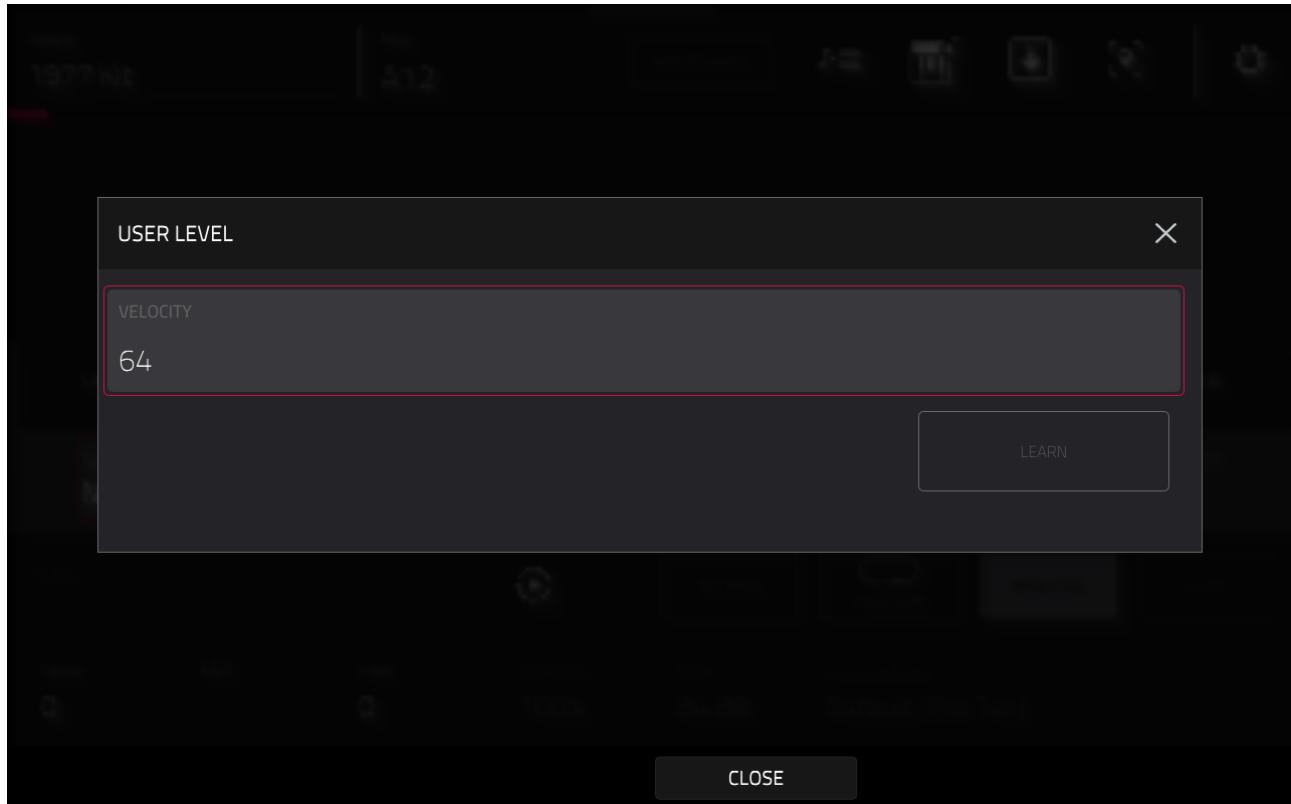
There's a little click at the end, take the **END** point back a little, **END: 826015** does the trick – alternatively, go to **AMP ENVELOPE** and slightly increase the **DECAY** for the whole pad.

Now select **LAYER 2** and set **SLICE: 3** which is the first 'medium' hit:

C08 ADVANCED DRUM KIT SOUND DESIGN

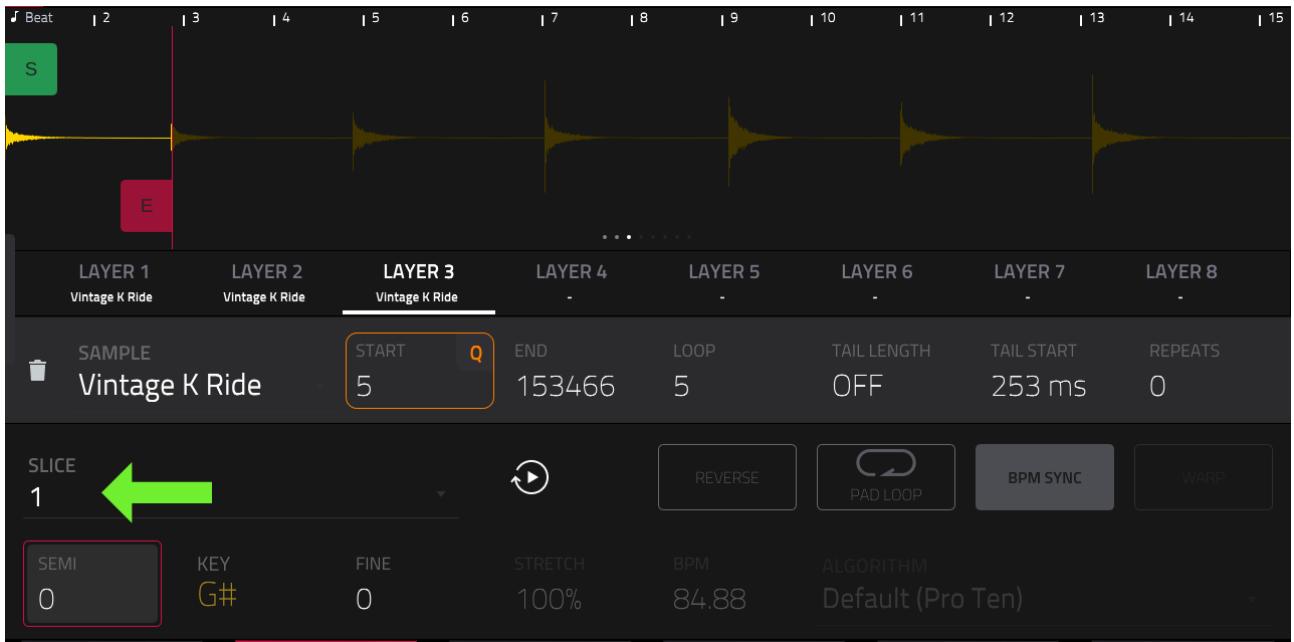


Want to preview just this layer? Hold down [**FULL LEVEL**] and set the **USER LEVEL** to a velocity within the range of **LAYER 2** (43 to 84) - say **64**.



Now **[SHIFT]** + **[FULL LEVEL]** to set the pad velocity to the fixed **USER LEVEL**. Now when you hit the pad you'll hear the **LAYER 2**, the medium hit ride.

Now set **LAYER 3** to **SLICE:1**, the first 'soft' hit. If you want to preview it, try a **USER LEVEL** of around **30**.



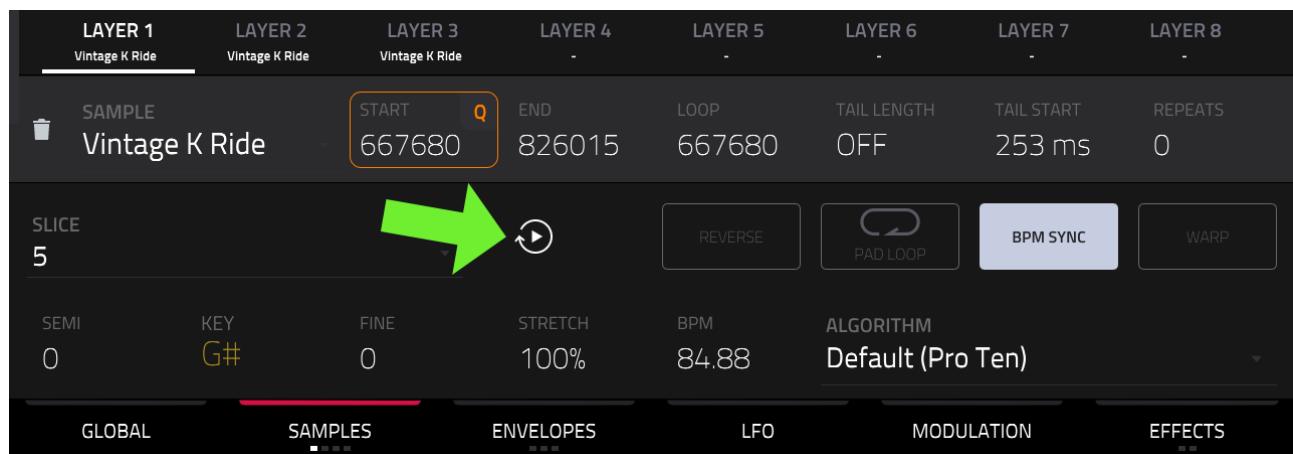
Turn off **USER LEVEL** and try out your 'multi-velocity' ride, hitting the pad at varying velocities.

To create an even smoother transition between velocity layers, use more layers (assuming you have the samples available). Remember we have up to 8 layers per pad.

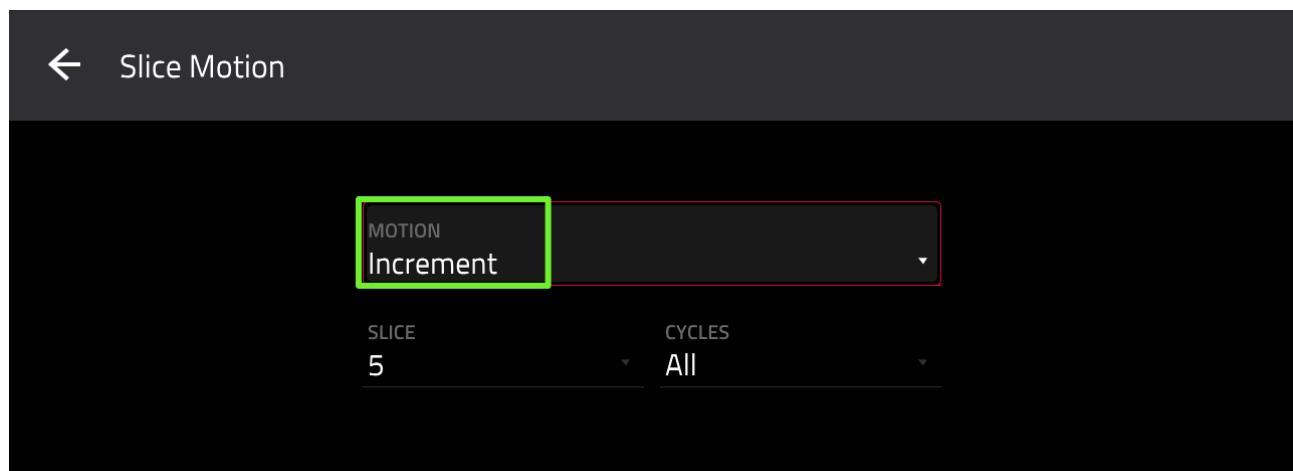
COMBINING VELOCITY LAYERS & ROUND ROBINS WITH SLICE MOTION

Velocity switching sounds pretty realistic, but if you hit the pad at roughly the same velocity multiple times you're going to get the exact same sample played every time - what we really need is for each velocity layer to also play some round robins as well. Unfortunately the 'layer play' setting only allows one option for the whole pad; it's either 'cycle', random' or 'velocity'.

However the MPC has another feature that does make it possible to add round robins to each layer; **Slice Motion**. In **TRACK EDIT > SAMPLES** select **LAYER 1**, which uses **SLICE:5** as the 'hard' velocity sample:



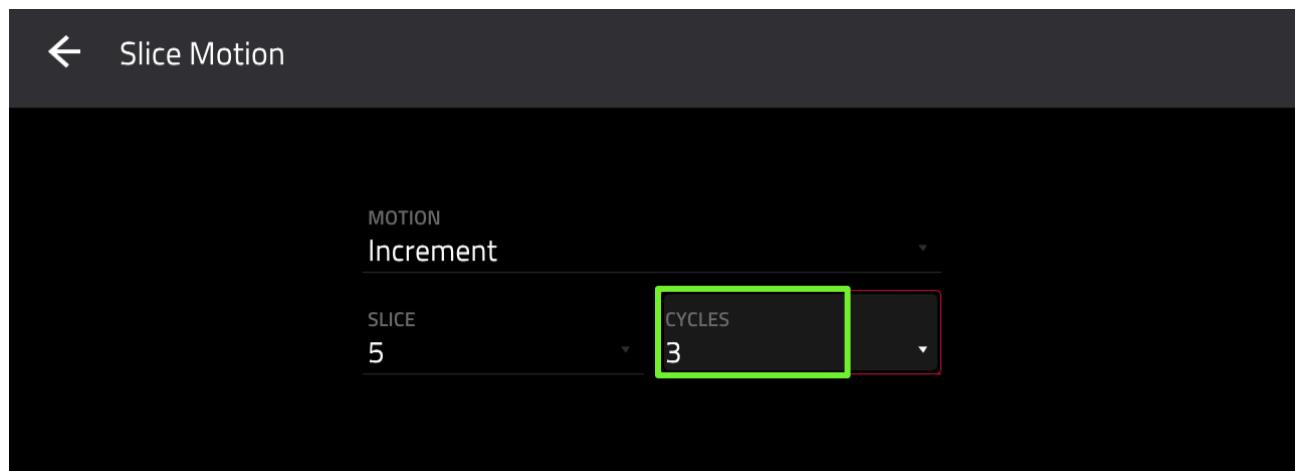
Tap on the **circular arrow icon** to the right of the SLICE parameter. This opens the **SLICE MOTION** settings – set **MOTION: Increment**.



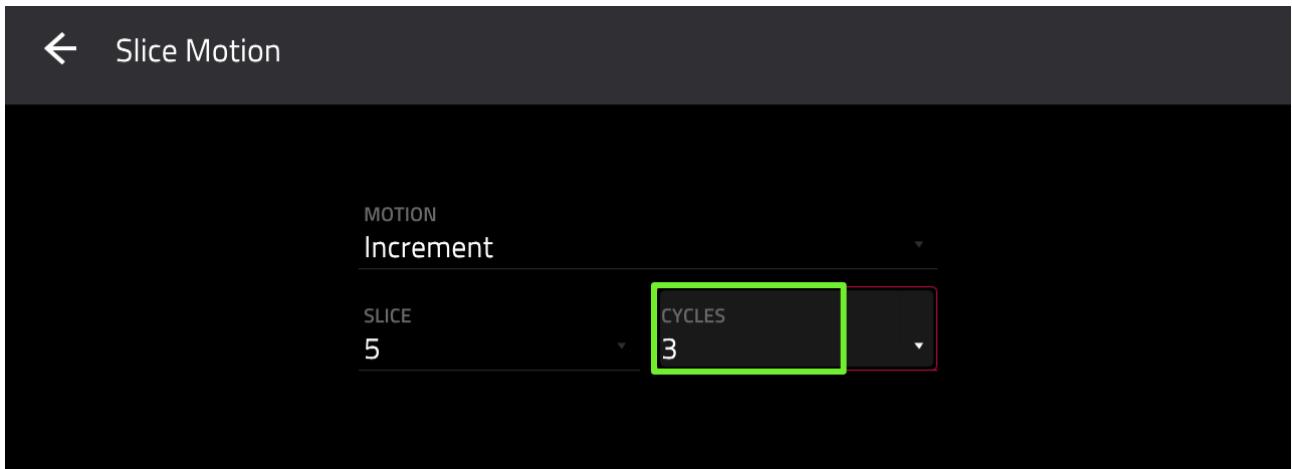
Now when you trigger this layer it will first play SLICE 5 (as normal). But as we've activated Slice Motion and it's set to '**Increment**', the next time you

trigger LAYER 1, it's going 'increment' the slice number and play the *next* slice in the sample, i.e. **SLICE:6**. And then the next time it will play **SLICE:7**.

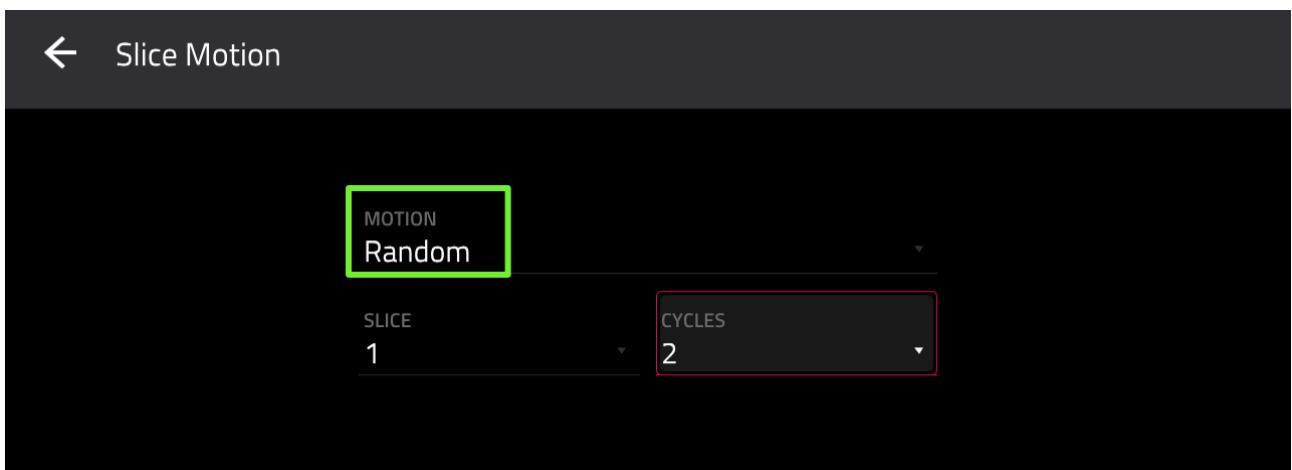
With **CYCLES** set to **ALL** it will continue triggering the next slice each time LAYER 1 is triggered – if it runs out of slices, it starts at the beginning of the sample with SLICE 1 and increments from there. To limit how many increments it can play from the 'base' slice, change the **CYCLE** parameter. As we have 3 hard slices, we want Slice Motion on LAYER 1 to only ever play slices 5, 6 and 7; hence set **CYCLES: 3**



Hit the arrow at the top left of the screen to return to SAMPLES and select **LAYER 2**. As we only have two medium slices, set **CYCLES: 2**, so the LAYER will only play **SLICE 3** and **SLICE 4**.



Finally configure **LAYER 3** with the same **CYCLES:2**. As an alternative to 'Increment' you can instead set **MOTION: Random** – in this case it will randomly play either **SLICE 1** or **SLICE 2**.



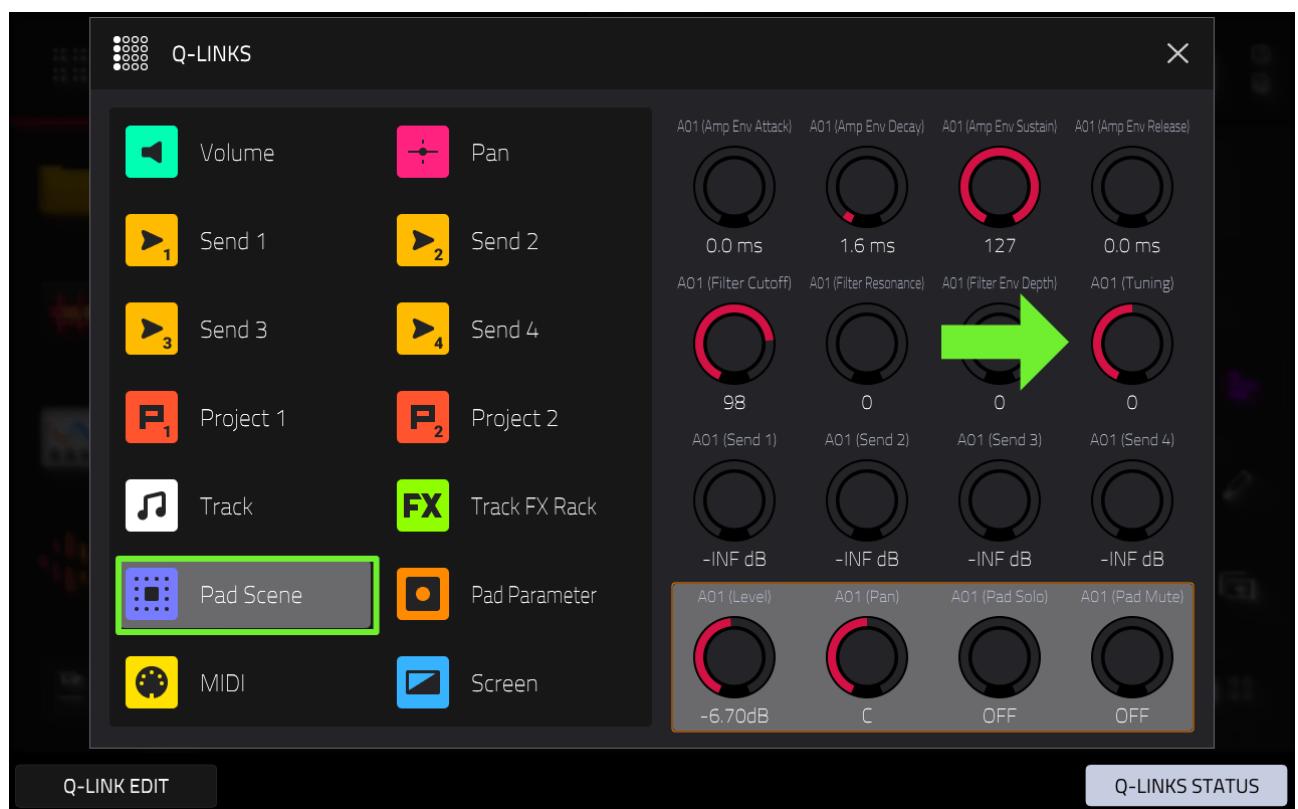
'Random works best when there's a lot of slices to choose randomly from – I'll be looking at 'random' slice motion in more detail in the next chapter when I use it to randomise slices in a heavily chopped vocal sample.'

Test out your realistic ride pad by turning off [**FULL LEVEL**] and hitting pad [**A12**] at varying velocity levels. Even with only two round robins on some layers, the results are very natural sounding.

TUNING PADS USING PAD SCENE Q-LINKS

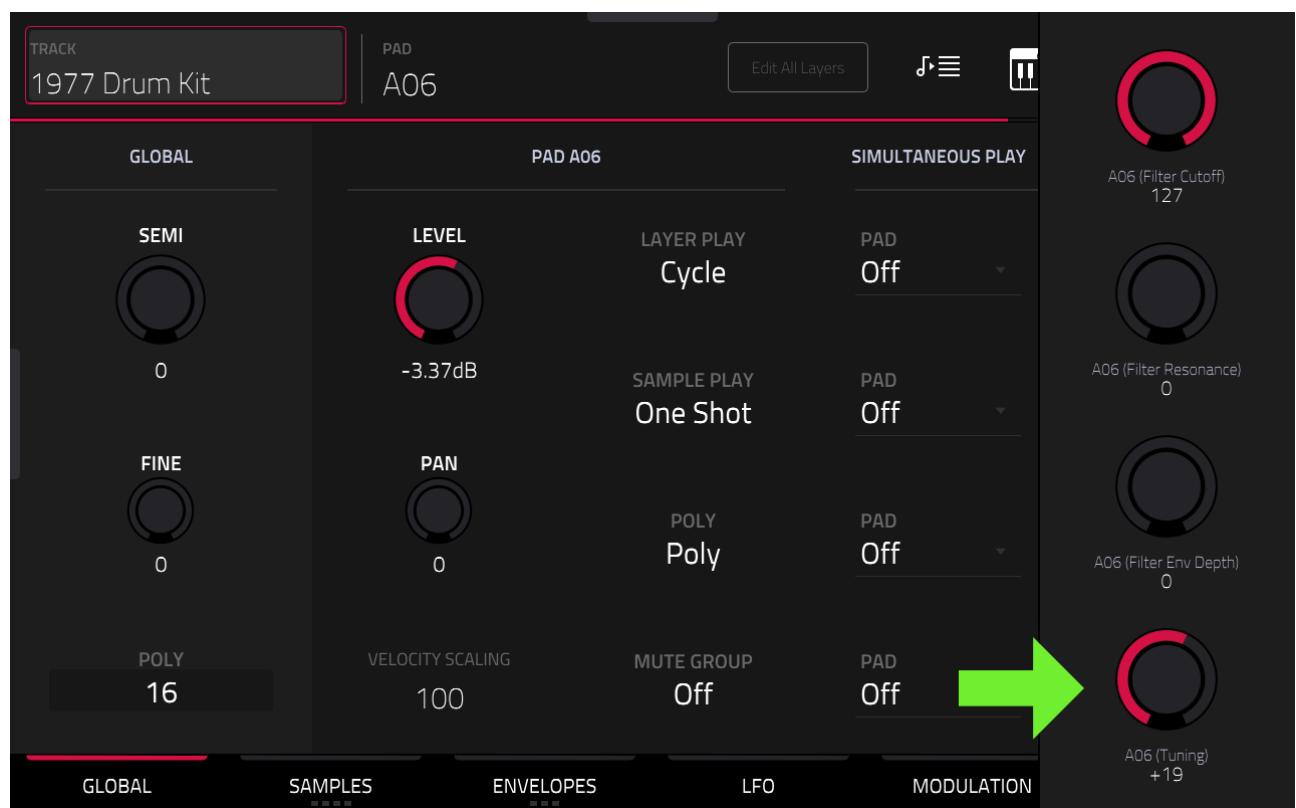
Let's customise the sound of the kit to give it a more dynamic and unique vibe. We've previously seen how we can use the SEMI and FINE parameters each individual layer in pad, but it's also possible to tune the entire pad.

Hold down [**Q-LINK**] and select **PAD SCENE**:



When Q-LINKS are set to **PAD SCENE** mode, each Q-LINK is assigned to a specific pad parameter within the DRUM track. The parameter I want to use here is in [**Q-LINK BANK 3**], on (Q-LINK 12); **TUNING**.

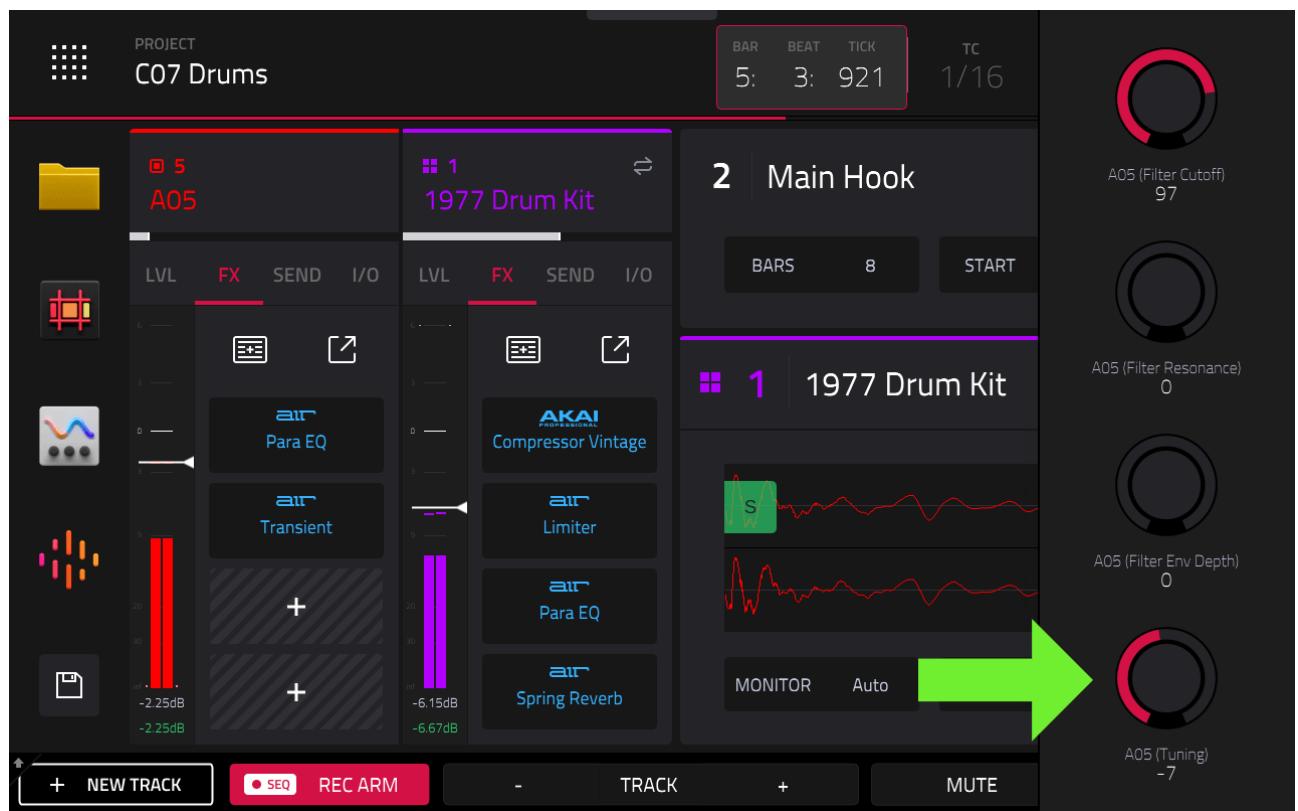
This Q-LINK accesses a hidden 'pad tune' feature. Continually tap on pad **[A06]** and while you do, turn (**Q-LINK 12**) clockwise and you'll hear the entire snare pad begin to increase in pitch:



Set the **TUNING** to **+19** to give our snare a higher pitched sound. As we have two other snares in this kit, repeat this action for pads **[A09]** and **[A10]**.

In PAD SCENE mode, the Q-LINK assignments are identical no matter which pad you select, so (Q-LINK 12) will always adjust tuning for the *currently selected* pad.

Now try re-tuning the kicks on [A06] and [A01] to **-7**. Also note that in **PAD SCENE** mode, the Q-LINK assignments are retained no matter what screen you are currently working in.



With pad [A05] still selected, go to **ENV: FILTER** and configure a **Low 2** with **CUTOFF: 97** for some added thump.



The PAD SCENE Q-LINKS are initially configured with sixteen parameters pre-mapped, but they can be edited in **Q-LINK EDIT** to control any sixteen parameters you prefer, including more complex macros.

ADDING PAD FX

Head over to **DRUM FX** to add some grit and character to the kicks with **BitCrush**, **TubeDrive** and a little **SoftClipper**:

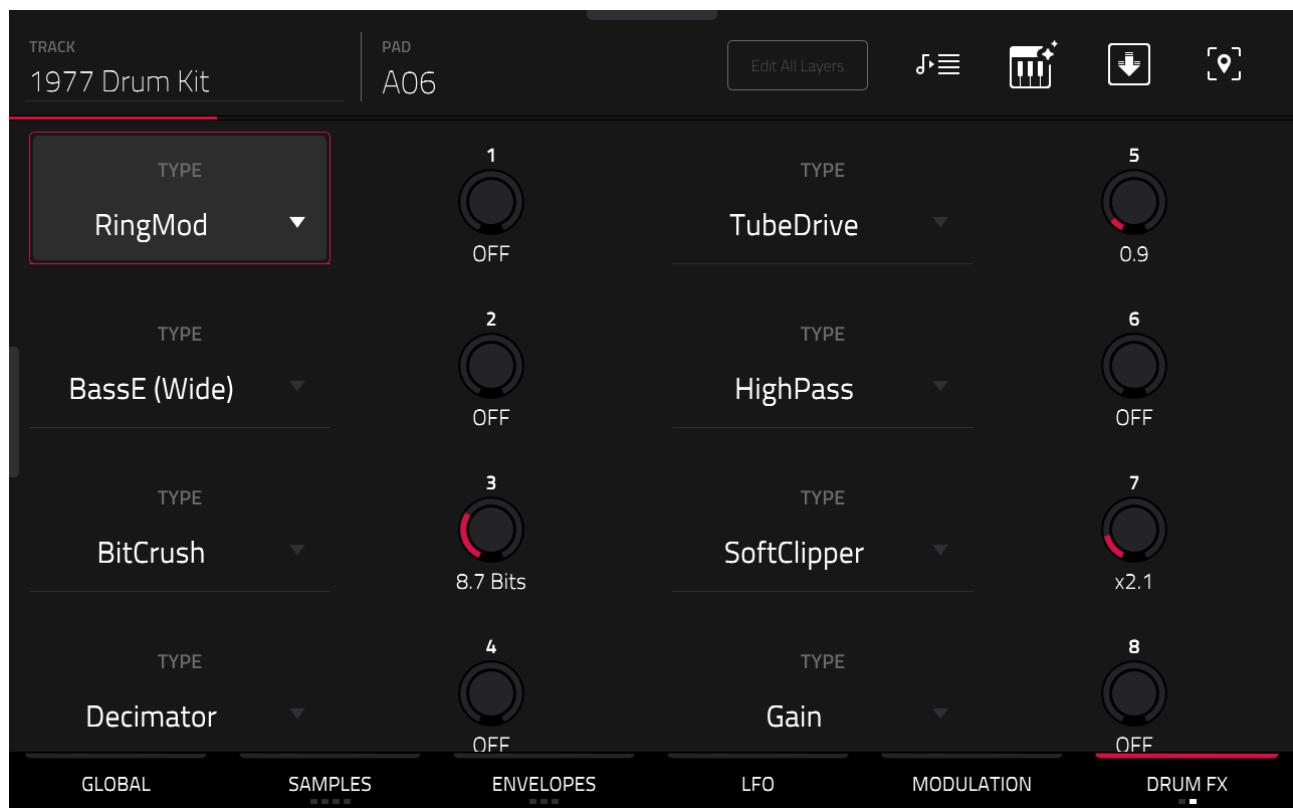


I also configured **FX slot 2** to be a **BassE(Wide)** to give the low end of the kick some extra boost. Repeat for the 'ghost' kick on **[A01]**.

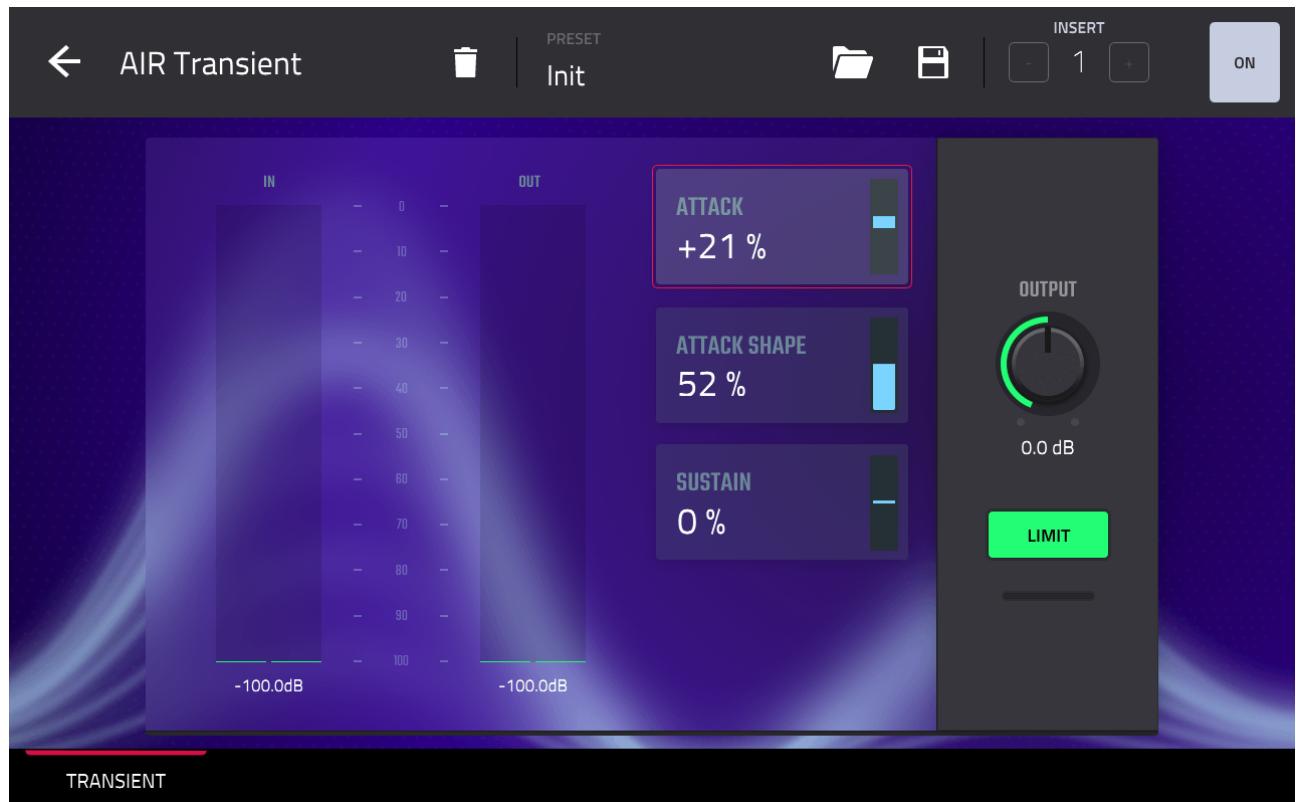


If you hold down **[SHIFT]** and hit pad **[A01]** and **[A05]** this will 'select' both pads together, mimicking **EDIT ZONES > MULTIPLE** so this can save time editing the same parameters on related pads – unfortunately **DRUM FX** and pad tuning are some of the parameters ignored by 'multiple' and 'all' pad editing!

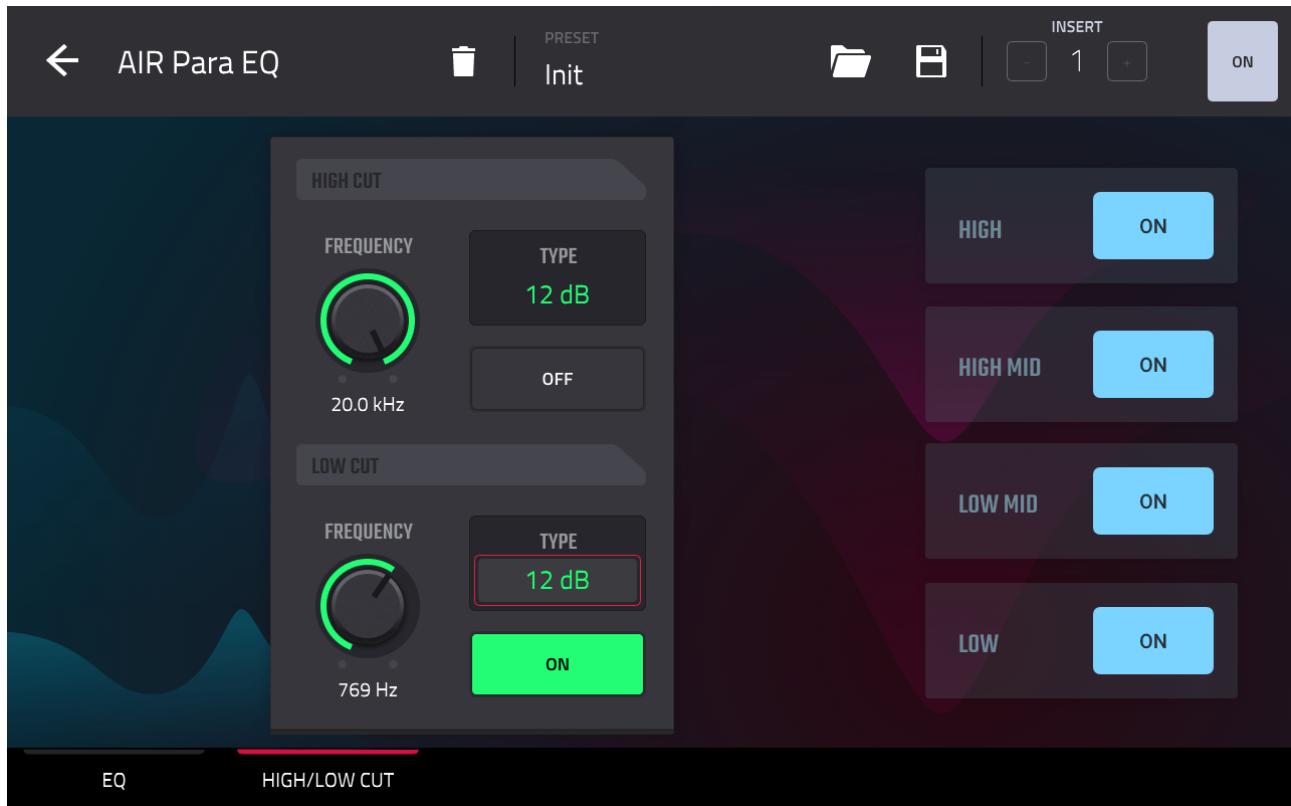
While you are in the **DRUM FX** screen, apply some SoftClipper, BitCrush and TubeDrive to dirty up the snares on pads **[A06]**, **[A09]** and **[A10]**.



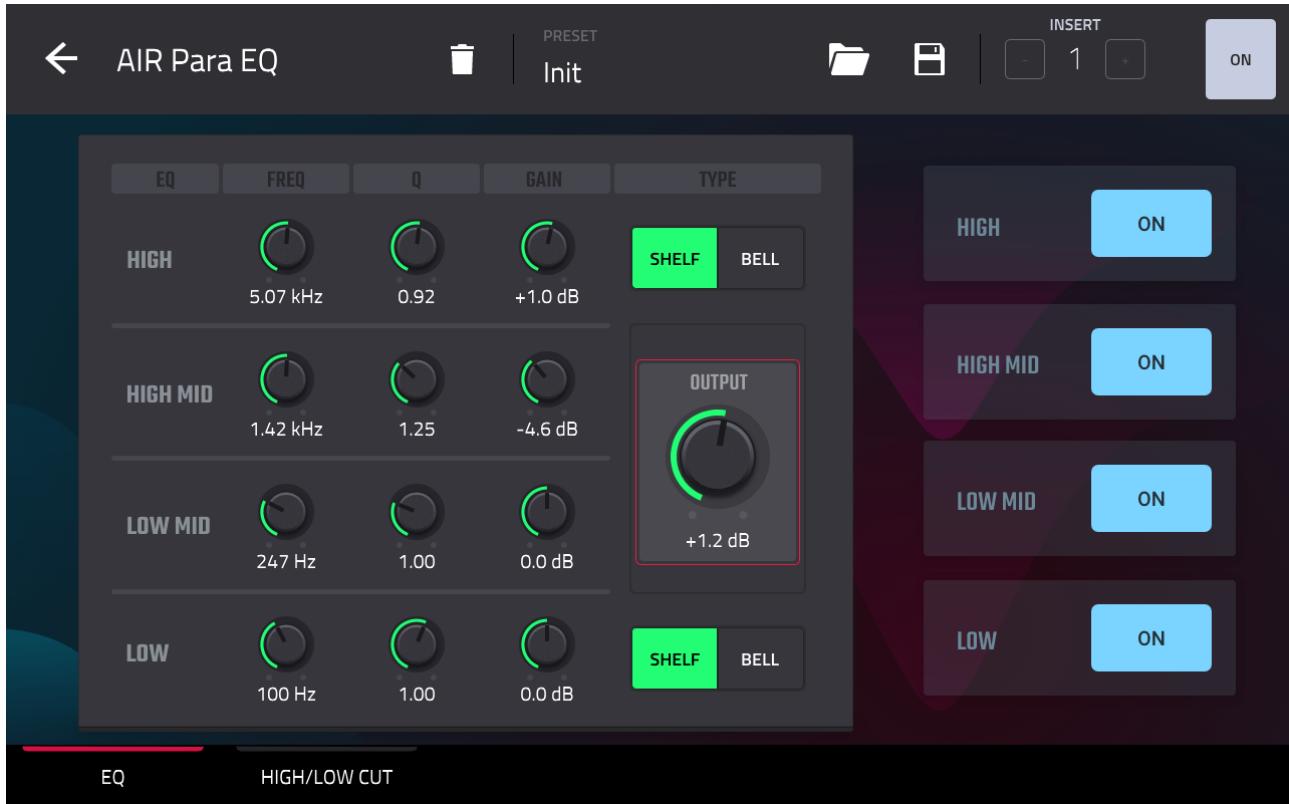
Select pad [A06] and go to the **EFFECTS** screen. Insert an instance of **AIR Transient** to add some additional attack to the main kick:



Select the ride on pad [A12] and use **AIR Para EQ** to take out the muddy frequencies below **769kHz**



Try a slight boost around **5kHz**, and a cut around **1.4kHz** to tame the slightly piercing sound of the ride in the upper mids. Boost the OUTPUT a little to compensate for the drop in level.

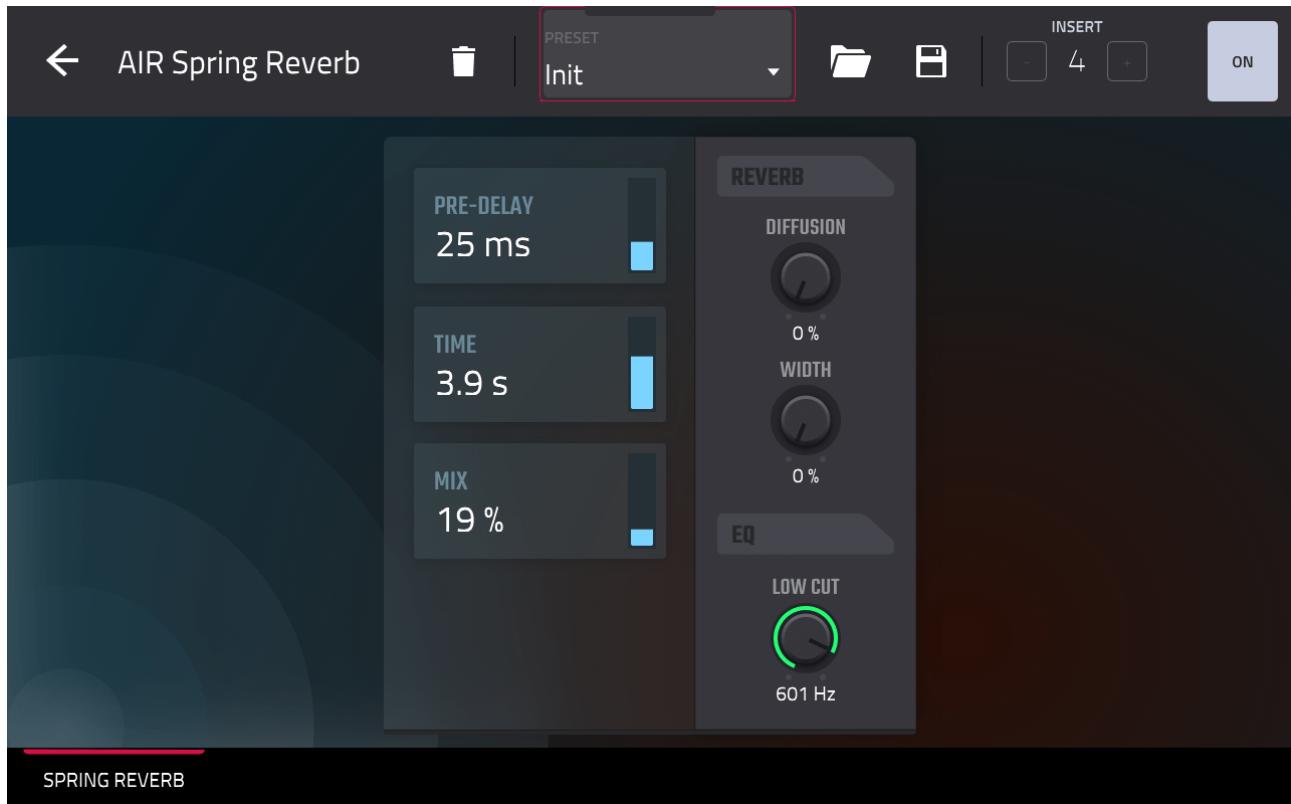


This ride sounds very 'mono'! Let's use the Air Stereo Width to give it more stereo spread:

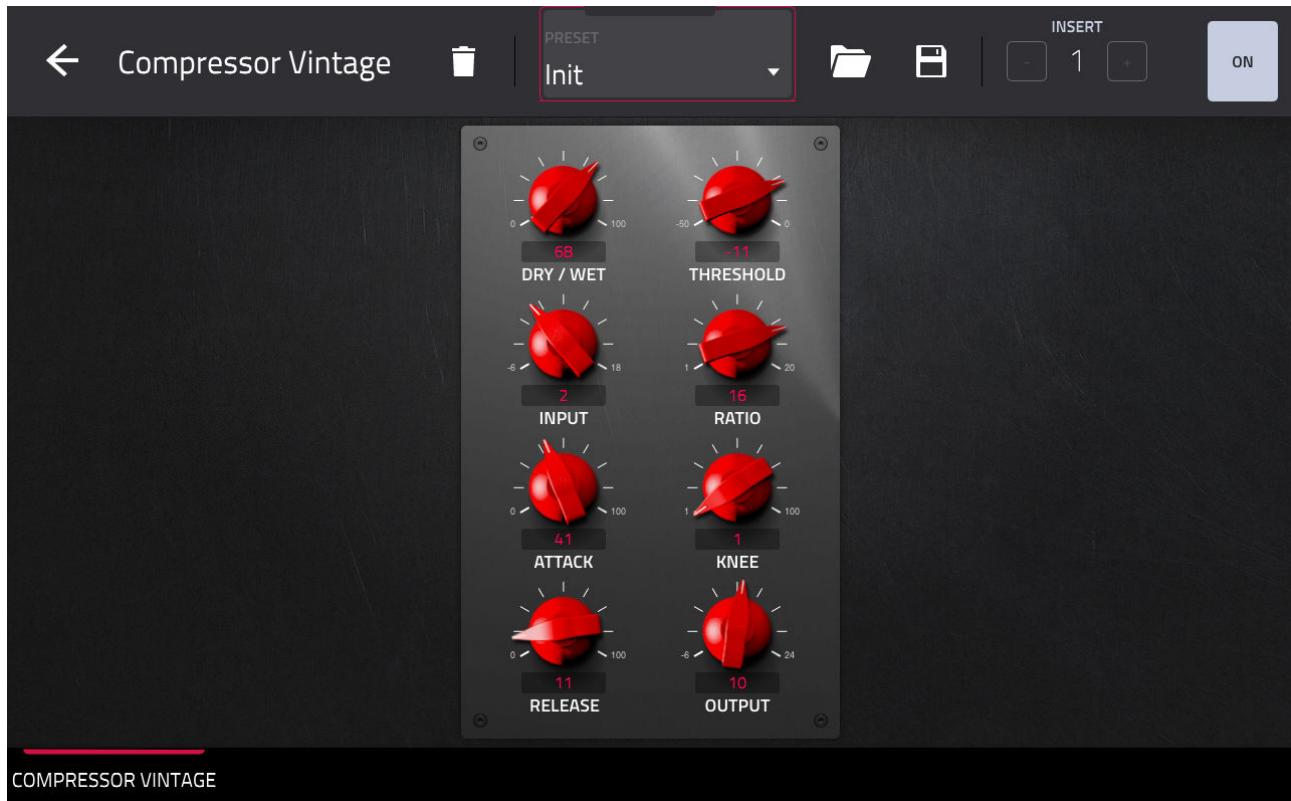


ADJUSTING TRACK FX

In [MAIN], make sure the track channel is selected so we can insert some FX to the track. I want to give this kit a vintage vibe – for a start let's add some **AIR Spring Reverb** to **INSERT 4** (the final insert in the chain):

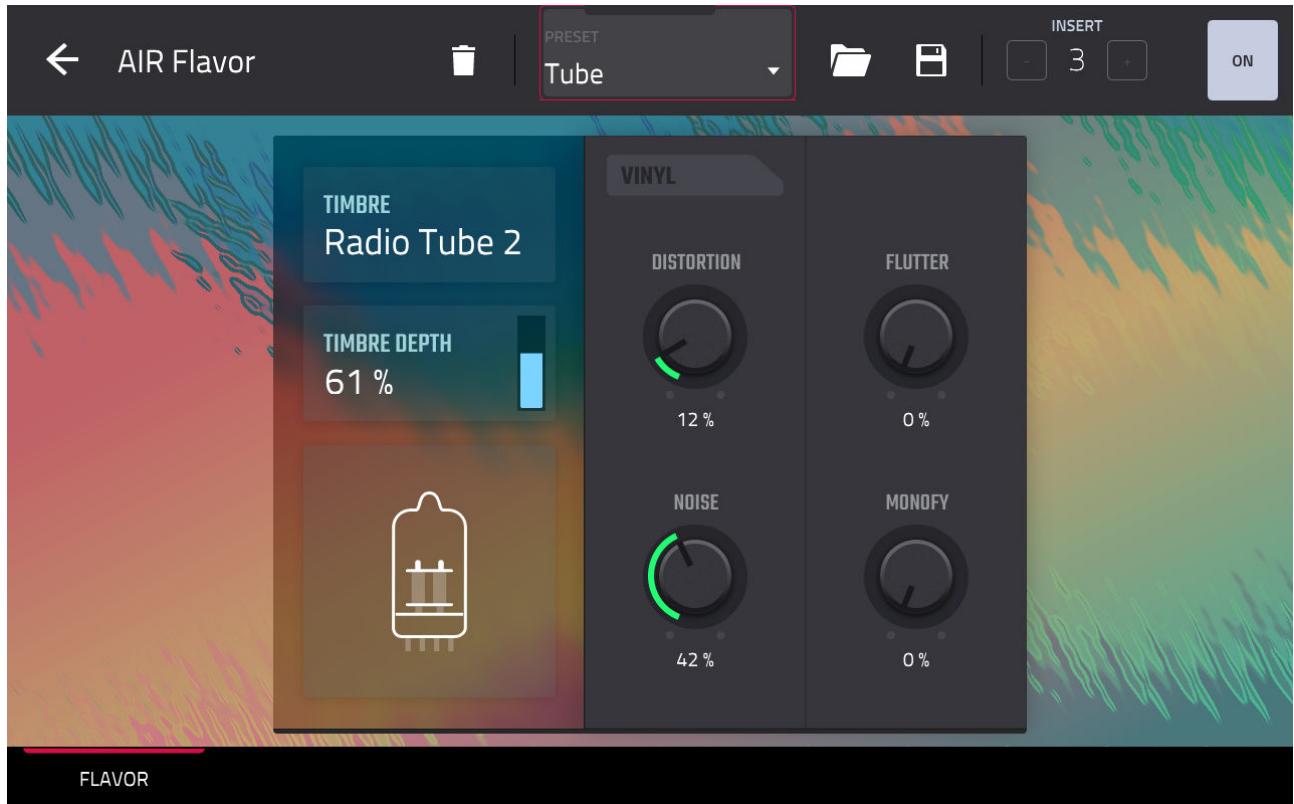


On **INSERT 1**, add **Compressor Vintage**:



Compressor Vintage is bursting with character and I have applied a quite extreme amount of compression, but I've used the **DRY/WET** control to dial back some of the dry, uncompressed signal which in combination with the medium attack should help bring back any missing transients (a technique called '**parallel compression**'). It still gives a very compressed, punchy and pumping sound to the kit, but keep the overall effect somewhat in check. We'll of course adjust the settings here when we are further along in the song building process.

On **INSERT 2**, add **Vintage > MPC3000** for an old school sampler vibe. On **INSERT 3** I added a slightly modified '**Tube**' preset from **AIR Flavor** to add some extra vintage sounding character:



LAYING DOWN SOME DRUMS

Load up the project **C08 Drums.xpj** from the chapter **C08** folder. This contains the theme we've been working on throughout Section C, including my version of the kit we've been working on which I've renamed **1977 Drum Kit** and placed on **track 1**.

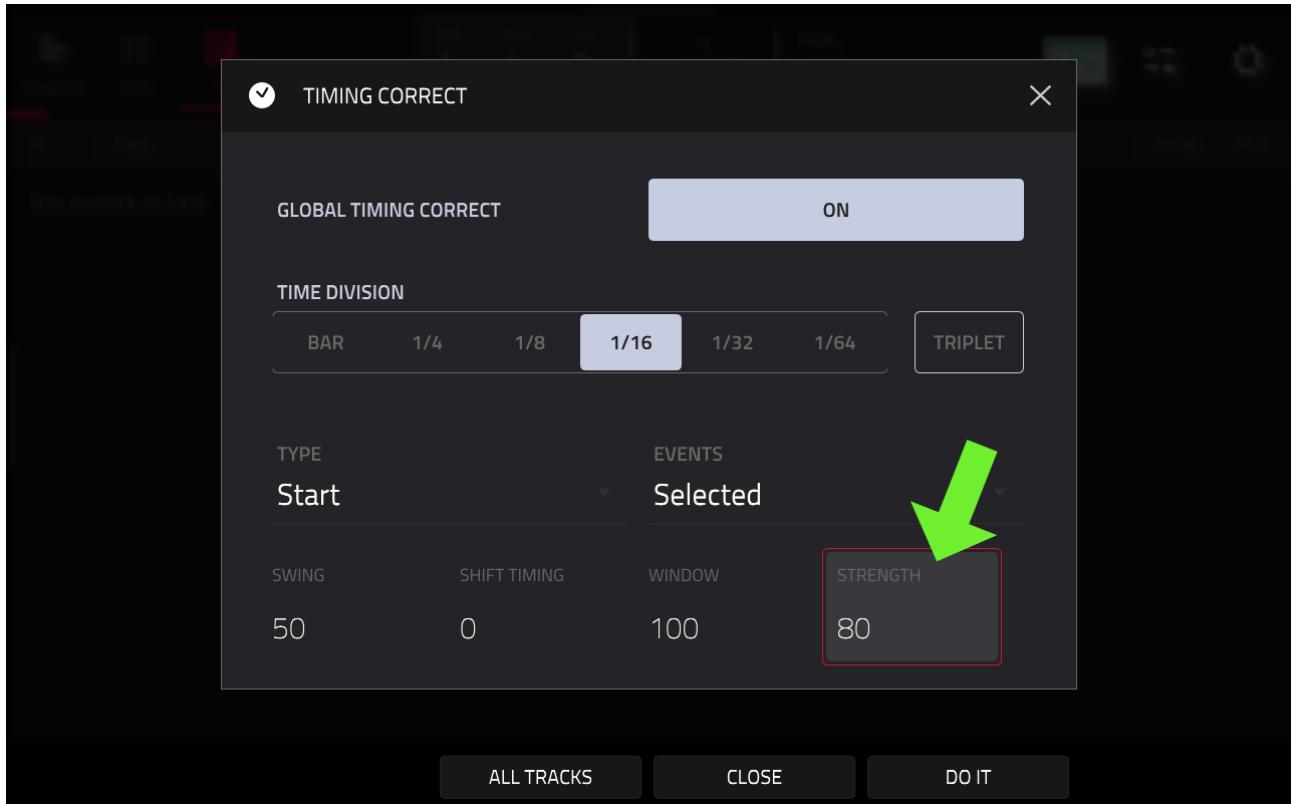
I also added a crash cymbal on pad **[A04]** built from two round robins set to 'cycle'; these were just some cymbals from my sample library that I felt matched the rest of the kit.

Let's get some drums down to track 1. At this point I'm actually really loving the whole 'drum-less' vibe of this track, but I can also see how dropping in a vintage-sounding live drum break is going to sound pretty nice.

For these drums we're actually going to skip the hi hats completely and instead use the ride cymbal for the 'top' aspects of the groove. Like I did in Section A, I'm going to lay those down first and then use that pattern like a metronome click to guide me when overdubbing the kick and snare.

Previously in the course we've used the **Humanzie** function to create a more human feel for our drums after recording. It's also possible to configure the sequencer to actually quantize your notes in a more 'human' way in 'real time'.

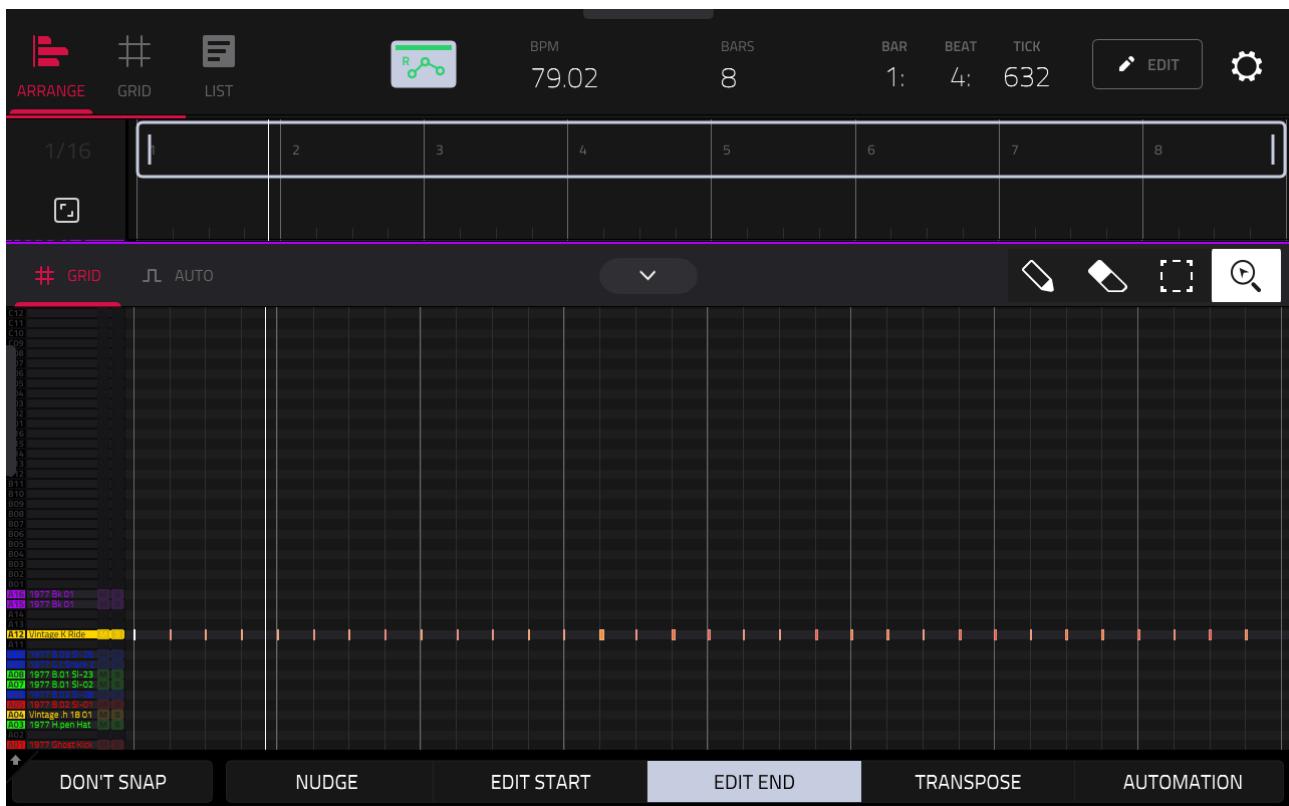
In **ARRANGE**, tap on the **TC** button and turn on **GLOBAL TIMING CORRECT**, with **TIME DIVISION** of **1/16**:



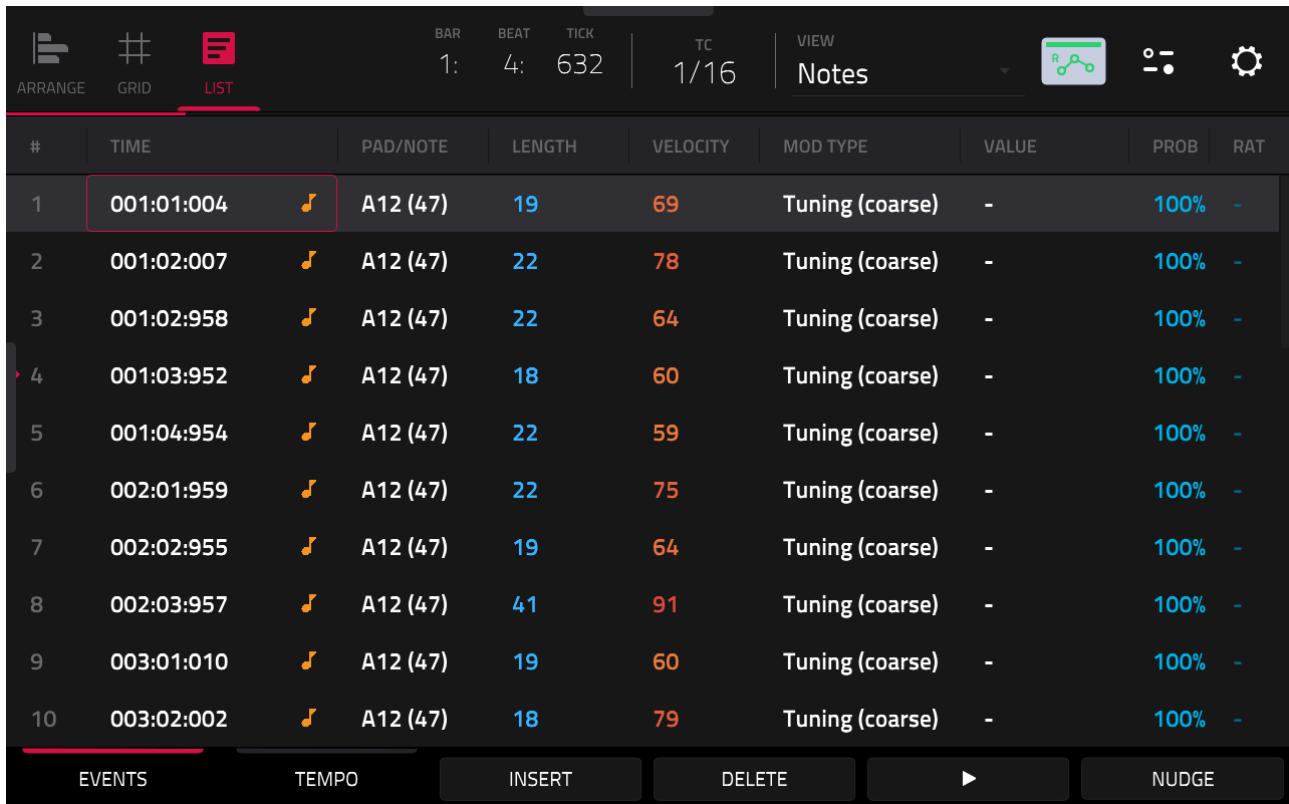
The **STRENGTH** setting determines how 'strongly' any quantising is applied to your performance. The default value is **100** which means that all events you play are moved *exactly* to the nearest quantize point – so for a time division of 1/16, the only possible event times in each bar are at 0, 240, 480, 720.

The lower you set the **STRENGTH**, the less strict the quantising will be, hence events will be moved to areas 'near' the 1/16th quantize points, but not necessarily exactly on them. This will result in a more 'humanised' feel to the final recorded events, while still ensuring that the overall performance is still basically adhering to 1/16th timing . Try a **STRENGTH** of **80**.

Now lay down a real time 1/16th ride pattern, with [**FULL LEVEL**] turned off to help give a natural variance to the velocity.



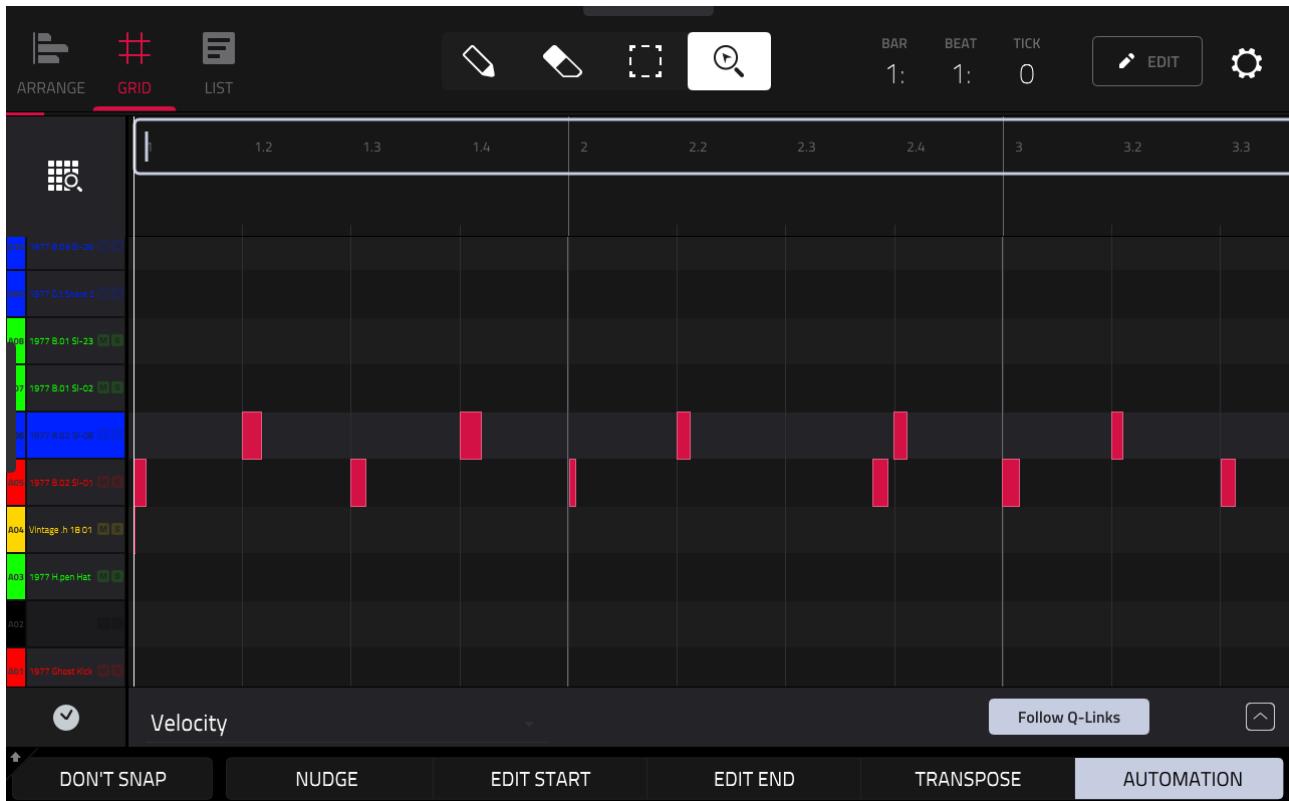
Take a look at the events in **LIST EDIT** and you'll see that the entered events are closely 'around' the 1/16th quantize points, but not 'bang on':



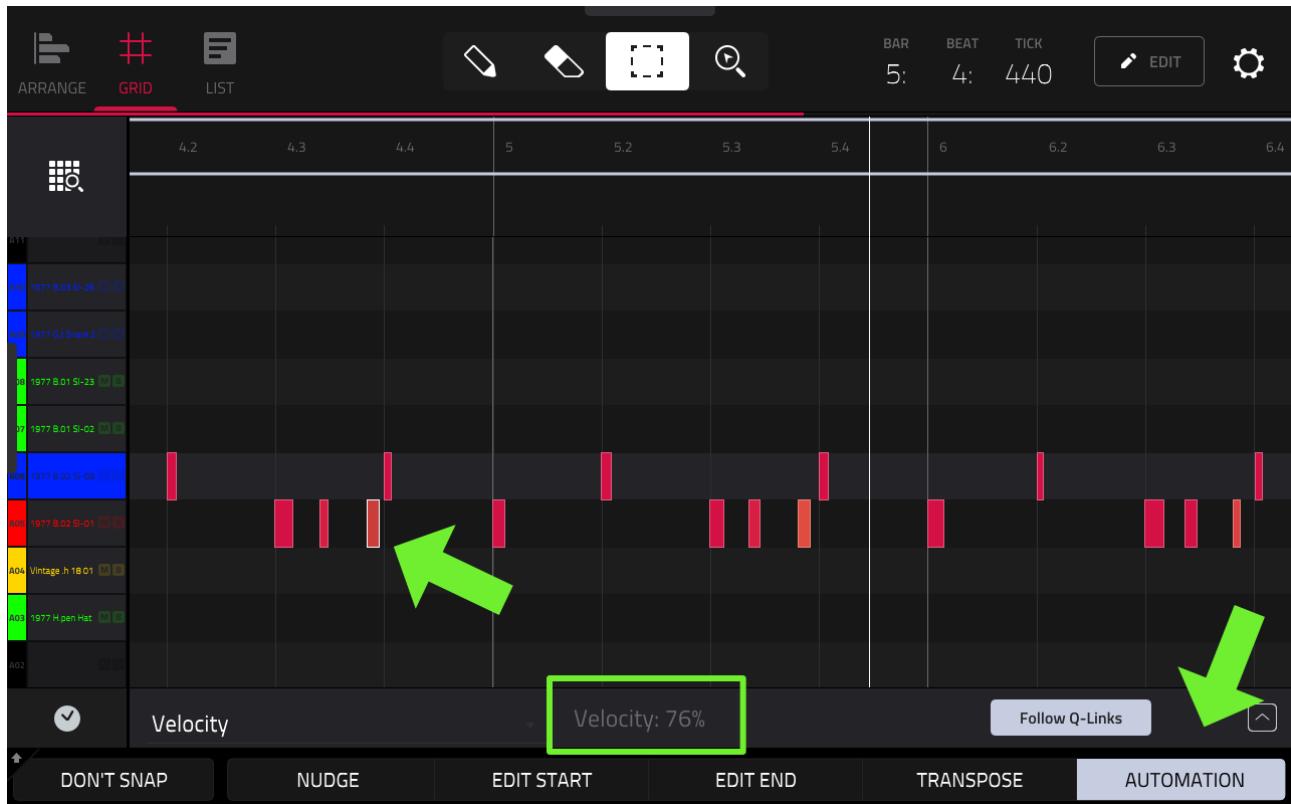
#	TIME	PAD/NOTE	LENGTH	VELOCITY	MOD TYPE	VALUE	PROB	RAT
1	001:01:004	♪ A12 (47)	19	69	Tuning (coarse)	-	100%	-
2	001:02:007	♪ A12 (47)	22	78	Tuning (coarse)	-	100%	-
3	001:02:958	♪ A12 (47)	22	64	Tuning (coarse)	-	100%	-
4	001:03:952	♪ A12 (47)	18	60	Tuning (coarse)	-	100%	-
5	001:04:954	♪ A12 (47)	22	59	Tuning (coarse)	-	100%	-
6	002:01:959	♪ A12 (47)	22	75	Tuning (coarse)	-	100%	-
7	002:02:955	♪ A12 (47)	19	64	Tuning (coarse)	-	100%	-
8	002:03:957	♪ A12 (47)	41	91	Tuning (coarse)	-	100%	-
9	003:01:010	♪ A12 (47)	19	60	Tuning (coarse)	-	100%	-
10	003:02:002	♪ A12 (47)	18	79	Tuning (coarse)	-	100%	-

EVENTS TEMPO INSERT DELETE ► NUDGE

With our ride 'click track' in place, [**OVERDUB**] your kick-snare pattern. I like to record the main 'back beat' using a **1/16th** quantize, just to get it fairly tight (still with a STRENGTH of 80 though) - the 'backbeat' is represented by the kicks on the 1st and 3rd beat of the bar, along with the snares on the 2nd and 4th bar:

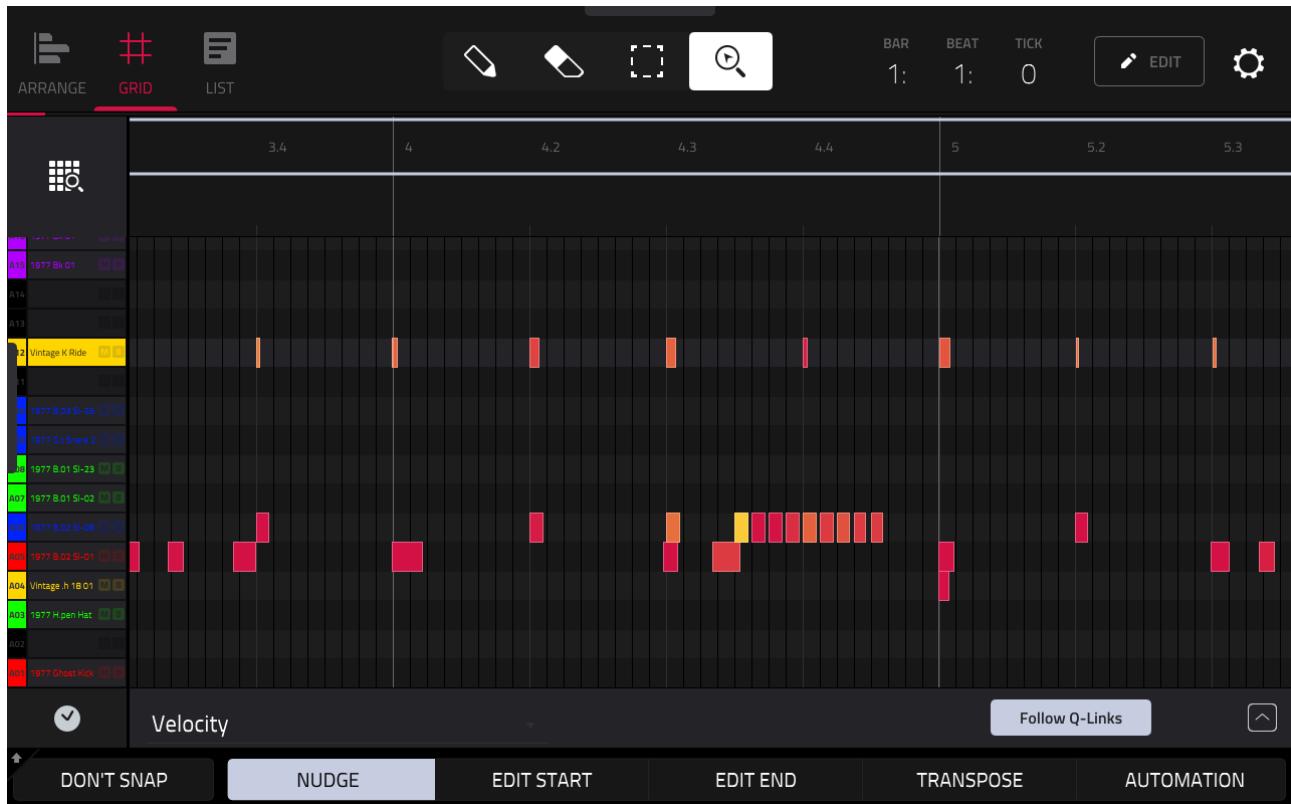


Then turn off **GLOBAL TIMING CORRECT** and record the additional kicks. Here I've played these kicks with quite a 'dragged' feel. The kick just before the snare sounds better played at a little lighter velocity, so if I needed to I jumped into **GRID VIEW**, selected the event, hit **AUTOMATION** and turn the (DATA WHEEL) to reduce the velocity:



Finally, I added a crash at the start of bar 1 and bar 5. You can check out my version by selecting sequence 2, **Basic Break**.

Now select sequence 3, **Break With Fills**. This is the same break but I added some **1/32nd NOTE REPEAT** snare rolls at the end of bars 4 and bar 8.



With our drum track in place, it's time to start building out complete song using the classic MPC 'song mode' workflow.



*Just like you did with your custom built keygroup instruments, consider exporting your custom made drum kits to a favourites folder so they can be easily re-used in any project. Again, the best format for re-using kits within your own MPC3 projects is always a 'track' file, so go to '**SAVE > Track**' and save to a location on your disk alongside your existing '**Instruments**'; folder; call it '**Drum Kits**' or similar.*

C09: SONG MODE WORKFLOW

It's time to start build a complete song from the hook we've been working on in Section C, and this time we're going to build up the structure using the classic MPC 'song mode' workflow.

SONG MODE VS LINEAR SONG BUILDING

In Section B we learnt about the 'linear' method for building songs which is based around the concept of working entirely within a single sequence, gradually extending the length by duplicating and inserting additional bars of content, before 'subtracting' elements to form a distinct song structure.

A popular alternative to linear song building is to use the '**song mode**' method which initially involves building lots of individual, smaller sequences, each one representing a different part of your song. These sequences are then 'chained' together in the 'song mode' screen to form a complete composition.

Song mode is considered to be very much an 'MPC way' of building songs and remains popular with many producers for a number of reasons:

1. the bulk of the compositional process is centred around working with small, manageable sequences so you may find it easier to organise and navigate compared to working within one very long sequence

2. It's easy to experiment with overall song structure by launching entire sequences (via 'next sequence' mode) providing a more immediate way of approaching arrangement which will almost certainly lead to different creative results compared to the linear method.
3. Song mode still allows the option to eventually convert the 'multi-sequence' song into a single sequence which can then be further edited, automated and mixed in a more 'linear' style, effectively creating a 'hybrid' workflow.

I think it's important to underline that this is not an 'either-or' battle; no one method is best and the reality is that many producers will freely use both linear and song mode methods (or take bits and pieces from both).

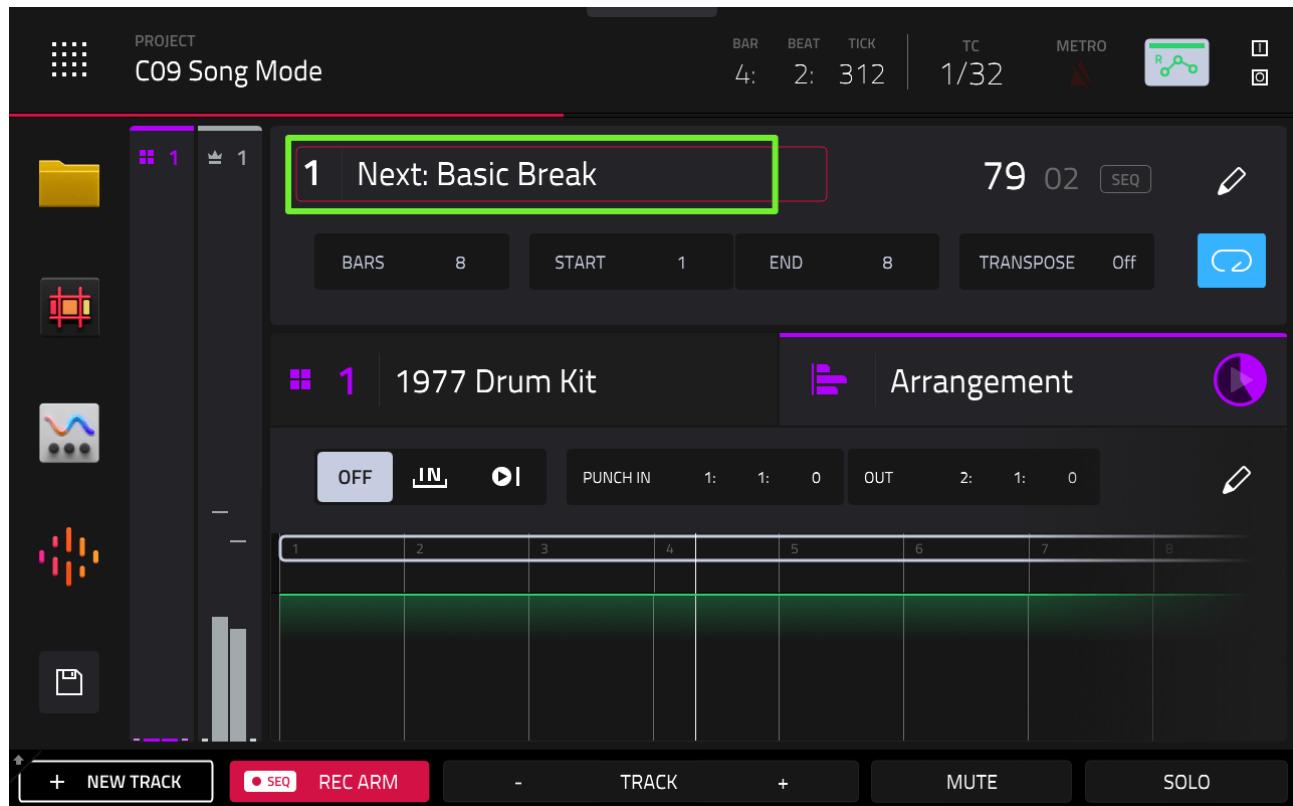
So in the first instance, let's look at how the song mode method varies during the initial compositional and arrangement stages.

BUILDING INDIVIDUAL SEQUENCES

Load up the project **C09 Song Mode.xpj** from the chapter **C09** folder. This contains the multi-track theme we've been working on throughout Section C.

The essence of the song mode workflow is to build our different song sections as unique sequences, and we've actually already started this process as our project already contains three unique 8 bar sequences; the main 'hook' with no drums (sequence 1), the hook 'with drums' (sequence 2) and a variation containing the snare rolls (sequence 3).

A simple way to hear how these sequences might sound together is to select **sequence 1** in [MAIN], hit [**PLAY START**] and while it is playing, tap on the sequence name and turn your (DATA WHEEL) one click clockwise (or hit the [**+**] button). You'll see the following:



The MPC is 'queuing up' the next sequence and when sequence 1 reaches the end of bar 8 the MPC seamlessly switches to playback of sequence 2. You can line up sequence 3 in the same way and continue switching between sequences to create a continual playback. As long as the current sequence is playing, the MPC will always line up and automatically launch sequences this way.

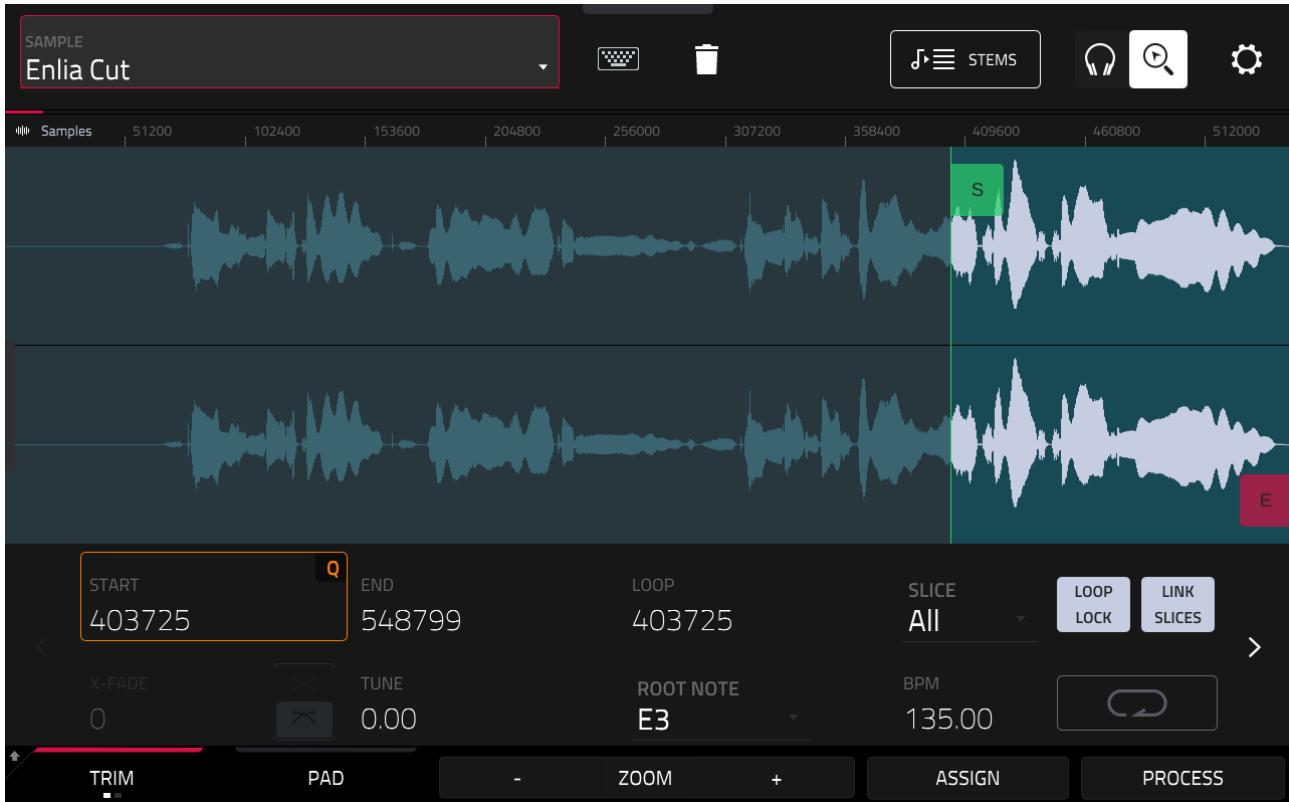
If you don't line up the next sequence, the MPC simply loops the current sequence as normal (as long as that sequence is set to **LOOP: ON**).

Normally at this point I'd think about heading over to TRACK MUTE to experiment with some 'subtractive' arrangement experimentation, but I'd first like to think of a way to add some variety to that vocal, we can't just keep repeating that same 8 bar vocal sample for several minutes!

USING SLICE MOTION ON VOCAL CHOPS

We used slice motion in a 'percussive' way in chapter C08 where we created 'round robins' on our velocity switched ride cymbal layers. Another interesting use of slice motion is to generate randomised patterns from *melodic chops*.

In [**SAMPLE EDIT**] select the **Enila Agony E 135bpm** sample. Let's finely chop a short phrase from this vocal. First use **PROCESS > Copy** to create a copy, call it **Enila Cut** and select it. Now adjust the **START** point to isolate the phrase at the end of the sample '*I chose to live*' - this one isn't an exact science as the '*I*' is merged with the previous word, but **403725** is fine:



If your Q-LINKS are not showing your 'start' point adjustments, remember that you need to be in '**SCREEN**' mode to see these and you might still be in '**PAD SCENE**' or '**TRACK**' mode from previous tutorials. To fix, hold down [**Q-LINK EDIT**] and select **SCREEN!**

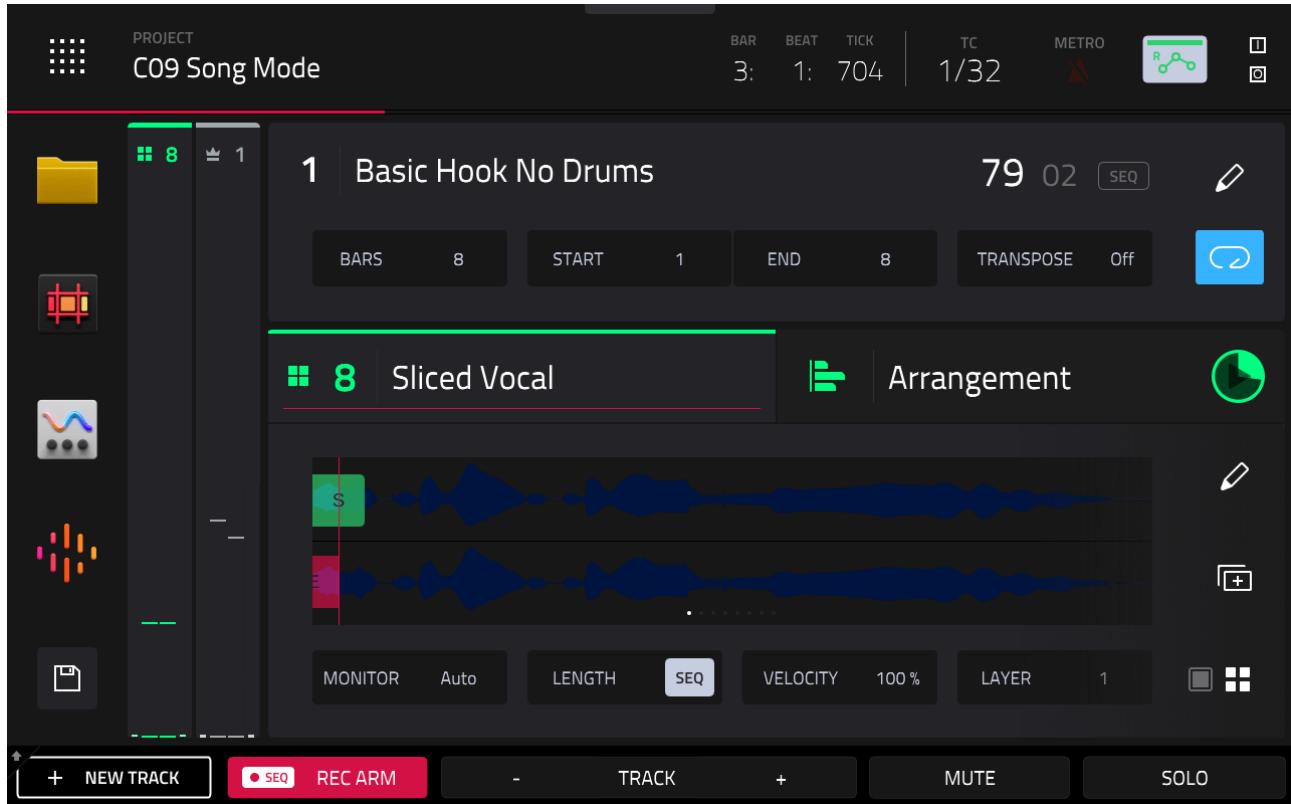
Go ahead and **PROCESS** > **Discard** to remove the unneeded sample data and head over to **CHOP**. Select **REGIONS: 32**

C09 SONG MODE WORKFLOW



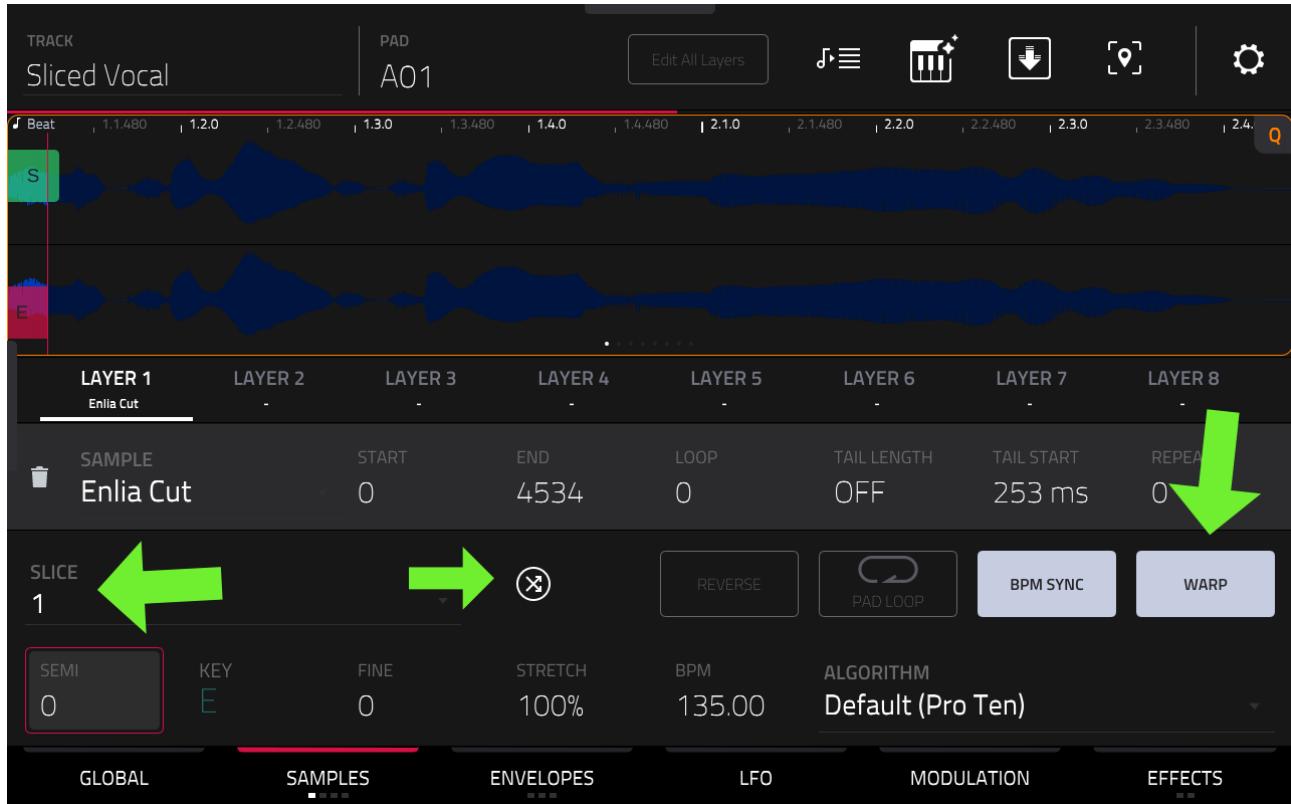
No need to edit anything here, we're good to go. Head back to [**MAIN**], create a new **DRUM** track and call it **Sliced Vocal** – position it just under the main '**Vocal**' track in **track position 8**.

C09 SONG MODE WORKFLOW

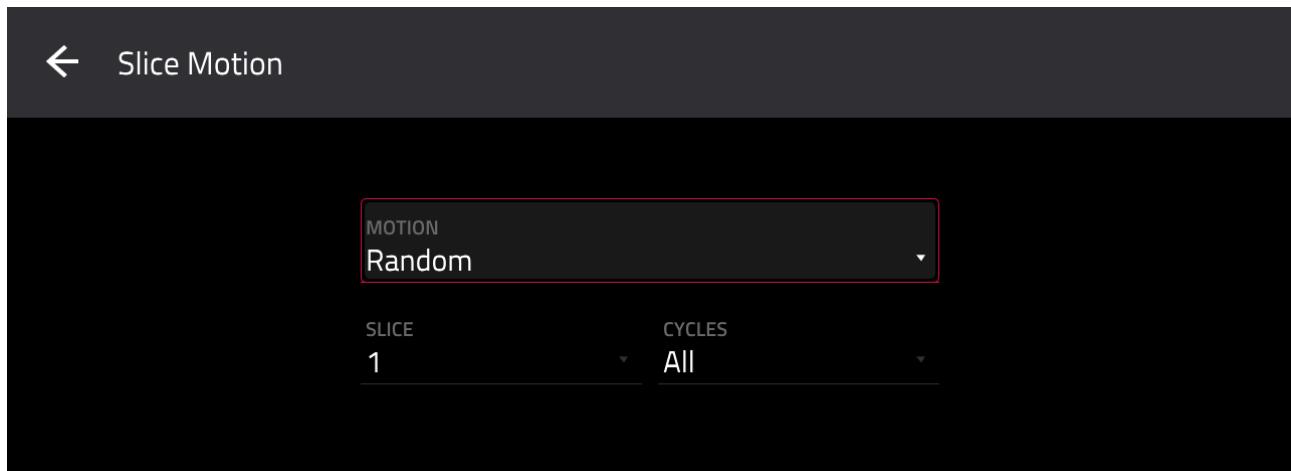


Go to **TRACK EDIT > SAMPLES** and select pad [A01]. Assign the **Enila Cut** sample to **LAYER 1** and enable **WARP** on this pad to automatically stretch this entire sample phrase to 79.02 BPM. Set **SLICE:1**

C09 SONG MODE WORKFLOW



Now hit the **SLICE MOTION** icon and set **MOTION: Random**, with **CYCLES: All**.



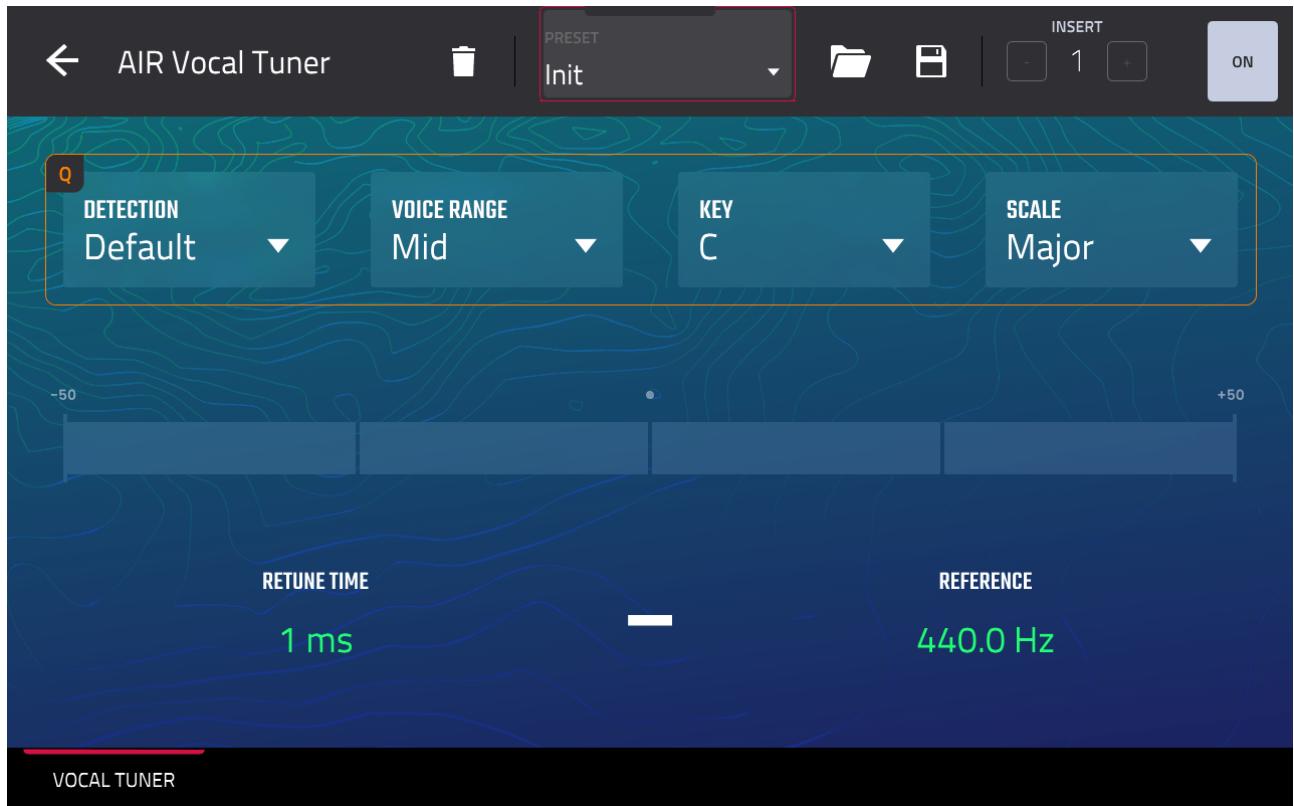
Now each time you hit pad [A01] it will play a different slice from our Enila Cut chopped sample. Hold down [NOTE REPEAT] with a T.C. of **1/16** and with it still held down, hold down pad [A01] to hear a continual 'random' triggering of slices.

It's very 'raw' at the moment, but we can easily smooth this out. First head to **TRACK EDIT > ENVELOPES** and in the **ENV:AMP** screen adjust the **ATTACK** and **DECAY** to help reduce the clicks that occur:

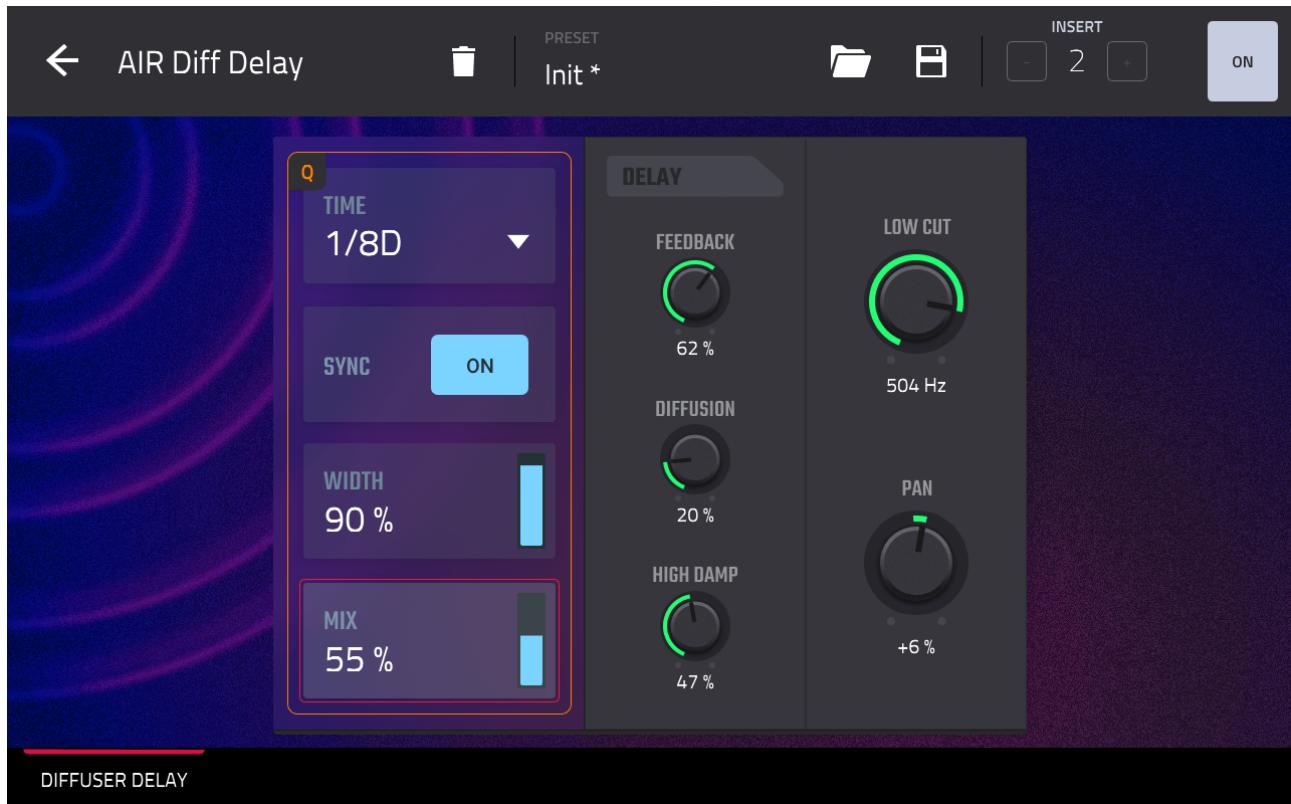


Now in **[MAIN] > XL Channel Strip**, insert the **AIR Vocal Tuner** to **INSERT slot 1** and mimic the settings used on the main vocal track:

C09 SONG MODE WORKFLOW



Then some **AIR Diff Delay** to add some nice ambience:

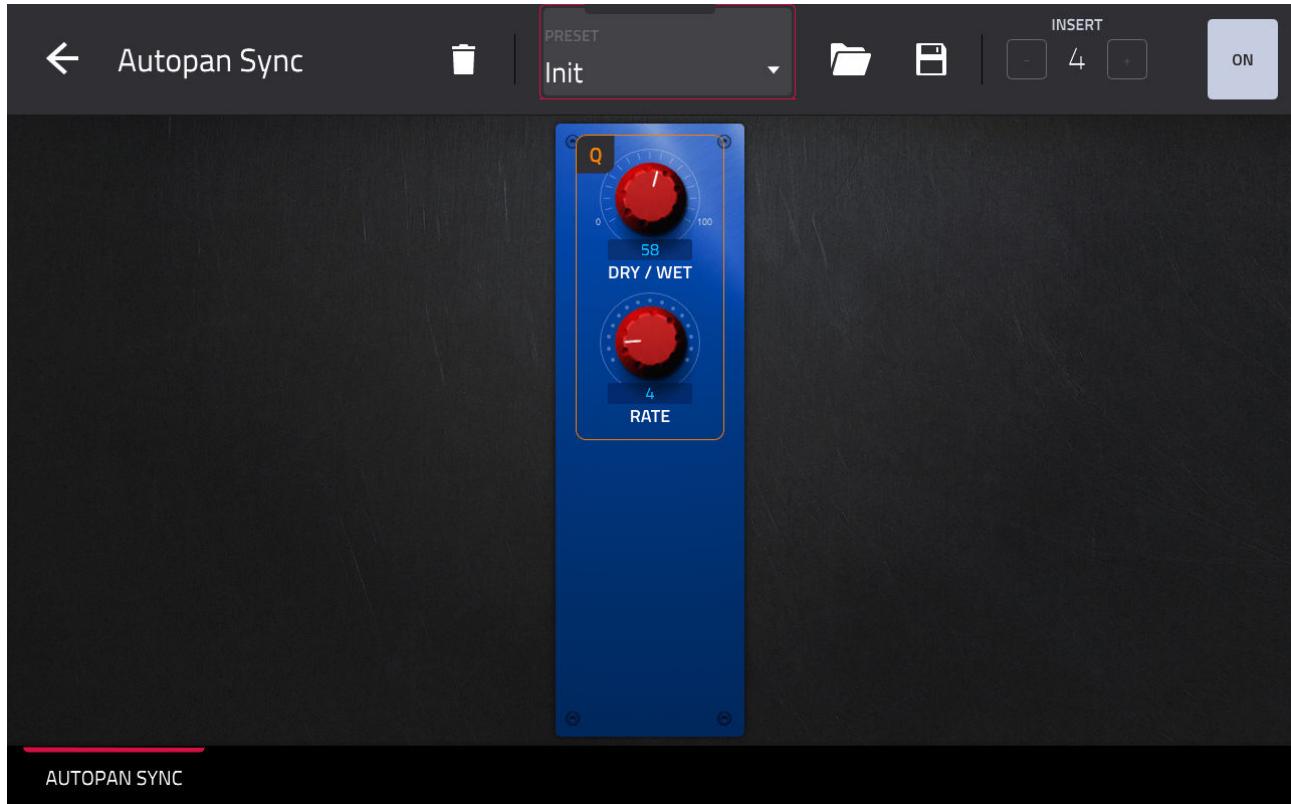


Then use **EQ/Filter > LP Filter Sweep** to add a subtle moving filter sweep to the chops:



Finally some **Modulation > Autopan Sync** to add a slow back and forth pan of the chops:

C09 SONG MODE WORKFLOW



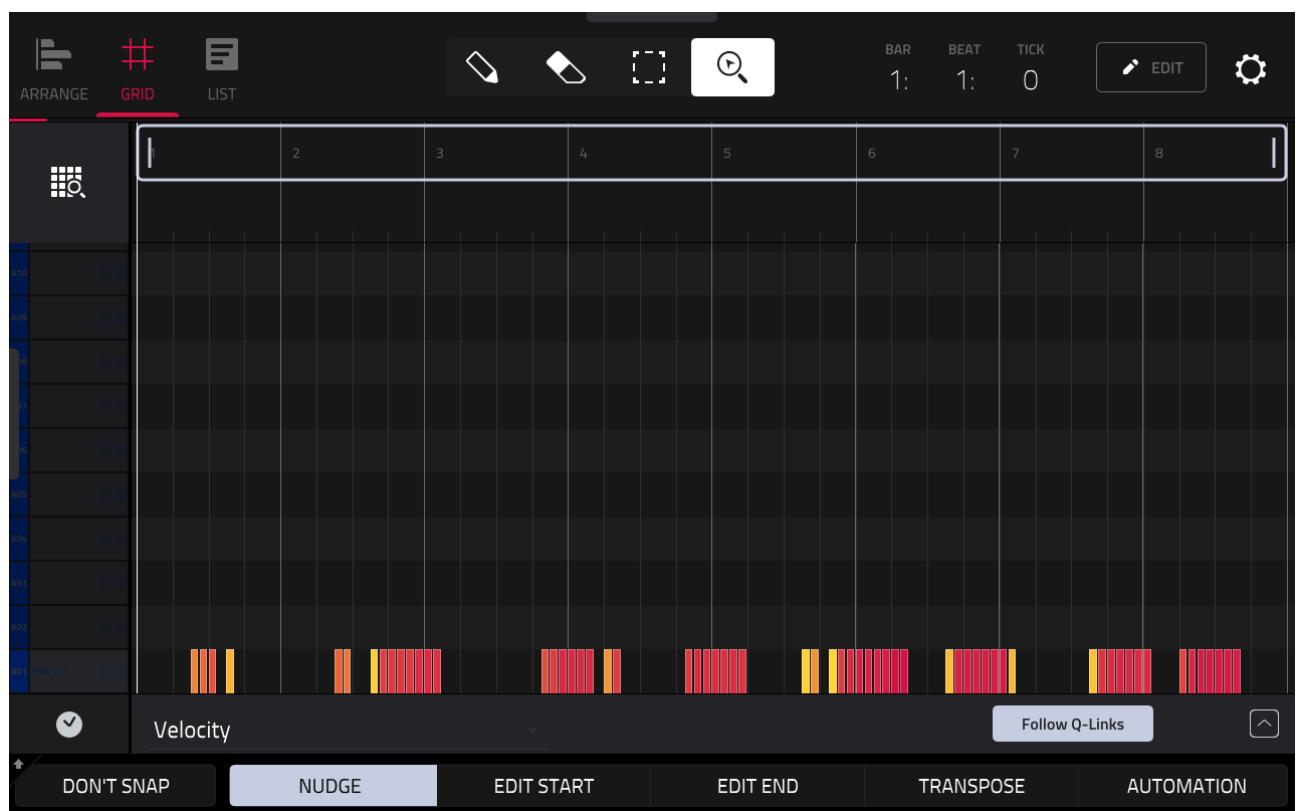
Select the **SEND** tab and add a little **SEND 1 reverb** to taste.

The screenshot shows the MPC software's song mode interface. The project name is 'C09 Song Mode'. The top bar shows time signature (8:4), tempo (607 BPM), and time code (1/16). The main area shows a track list with 'Sliced Vocal' selected. A green arrow points to the 'SEND 1' knob in the track editor, which is currently set to -8.89dB. The interface includes LVL, FX, SEND, and I/O controls for each track.

Select **sequence 3 (Break With Fills)**. Hit the main sequence **EDIT** button and use '**Copy Sequence**' to make a copy to **sequence 4** – select this copied sequence and call it '**All Tracks**'. We're going to use this sequence to hold a backup of all the key elements of the theme – it will also be a good sequence to use for track mute experimentation.

In **MAIN**, select the original '**Vocal**' track and hit the **MUTE** button to disable the main vocal in this sequence.

Now select track 8, '**Sliced Vocal**' and use [**NOTE REPEAT**] to record a sliced vocal performance. I turned off [**FULL LEVEL**] so I could vary pad pressure, bringing the pad back in short bursts to create an almost 'call and response' type of feel:

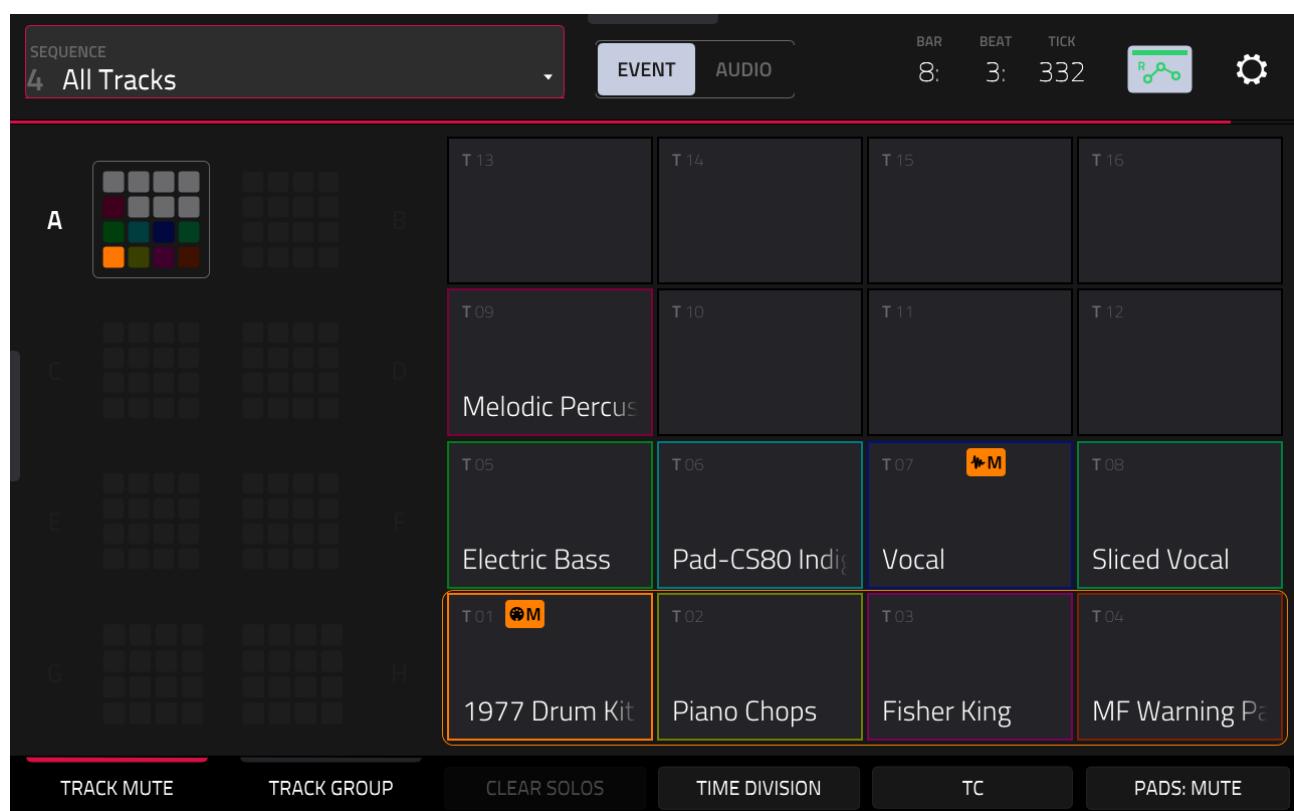


Load up the project **C09 Subtractive Arrangement.xpj** and check out my version on sequence 4, '**All Tracks**'. At this point I'm happy that the nine tracks we have are enough to start building an arrangement for a complete song.

PLANNING A SUBTRACTIVE ARRANGEMENT

Our current sequence 4 (**All Tracks**) contains all the components for our song - we have all our many instrumental keygroup and plugin layers, the electric bass line, the basic drum break, a main vocal riff and sliced vocal texture.

Head over to [**MENU**] > **TRACK MUTE**:



We met the track mute screen in section B and we can again use it to provide an intuitive interface for experimenting with basic 'subtractive' arrangement. Hit [**PLAY START**] and try muting different track to get a feel of what works well and what doesn't.

Remember, there are two distinct types of track mute; an 'audio mute' will immediately halt all audio from a particular track, while the 'event' mute will allow existing 'triggered' events to play out as it only disables the underlying midi events. Generally speaking the '**event**' type mute is the way to go.

And for the **1977 Drum Kit** on track 1, you can also try using the **PAD MUTE** screen – for example, taking out the kick and snare leaving only the ride and crash, or leaving some of the kicks as well.

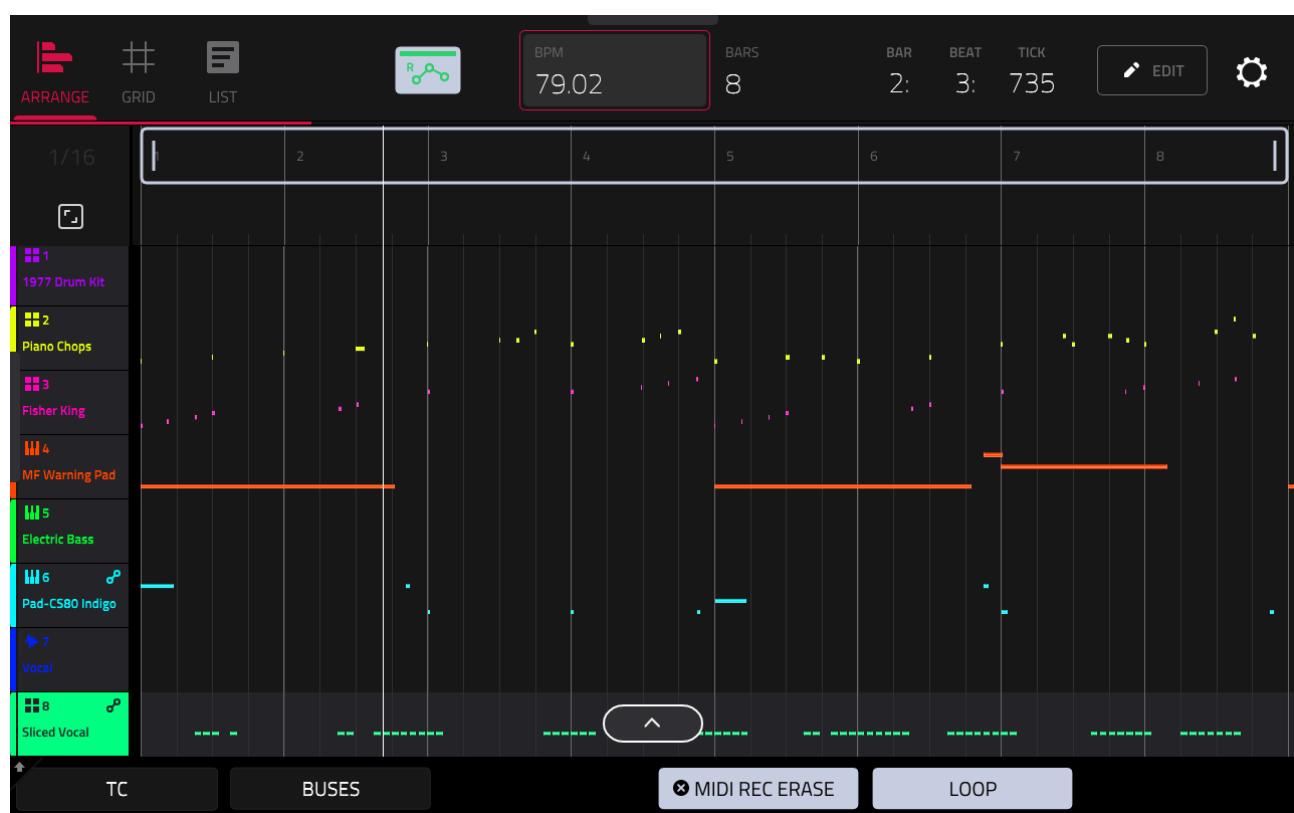


Remember pad mutes are 'audio' mutes and any pad muted remains muted even after leaving the pad mute screen. So do remember to 'unmute' pads after you've finished your muting experiments.

Once you have some ideas for the different possible sections, you can start to build an individual sequence for each part. To do this, simply make a copy of the most approbate 'template' sequence , typically either the '**All Tracks**' sequence (4), or if you just need the more basic drums, make a copy of the '**Break No Fills**' sequence (2).

Rename the copied sequence then begin to 'subtract' elements from that sequence to create a unique 8 bar section for your song.

I've already created a whole bunch of sequences this way in the currently loaded project. For example, select **sequence 5** where I have created a sequence called '**Intro Stutter**' – here I have erased the drums, lead vocals and bass, leaving the 'Sliced Vocal' track to take on the main melodic focus. Take a look at it in the **ARRANGER**:



ERASE OR MUTE?

As we've seen previously in the course, 'subtracting' elements from a sequence can be achieved in a number of ways but are fundamentally either achieved by applying a 'mute' or an 'deletion'.

As I discussed in the workshop at the end of chapter B11, I'm still very much on the fence about the current implementation of mutes in MPC3; with the two different mute types (events and audio) it can quickly become confusing as to which mute has been applied to a particular track (or portion of track). There also seems to be a number of bugs or at least 'irregularities' that I keep coming across, especially when working in song mode.

I also dislike the fact that once a track is muted you cannot play live pads 'over' the muted region, which makes it tricky to quickly freestyle some new ideas over that muted track (before MPC2.8, there was no such restriction).

Erasing on the other hand experiences none of these issues; erasing is easy to perform with no confusion, and after taking out a track (or a section of a track) you can immediately overdub new ideas over that track.

For example, you erase all the drums on a track, then upon hearing the result decide it needs a little drum fill at the end, so just immediately

overdub the fill. If you went for the muting option it wouldn't be possible to then overdub the drum fill, not without trying to edit mute automation events or creating a duplicate track just for the fills.

That said, your mileage may vary and you should go for the solution that suits you best, even a combination of the two. If you do go for erasing, remember you can achieve this in a number of ways, all of which I have covered earlier in the course:

- hold down [**ERASE**] and a pad while a sequence plays, this will erase only the events relating to that pad and only when the sequencer actually encounters one in real time
- Tap [**ERASE**] and use the 'erase events' dialog to erase specified events over a given time period
- In **ARRANGER**, tap and hold on the track header and select '**Clear track**' to remove all the events within that track
- For audio tracks in the **ARRANGER**, hold down on a region and select '**Delete**'.
- In the **Arranger tab** in **MAIN**, tap the **pencil** for the same '**Clear**' function.
- In **GRID** use the **eraser tool** to erase individual events or audio regions, or the **select tool** combined with '**DELETE**' to delete multiple events.



Remember that the 'Clear' function found in the 'Sequence Edit' screen will clear 'all' tracks, not just the current track.

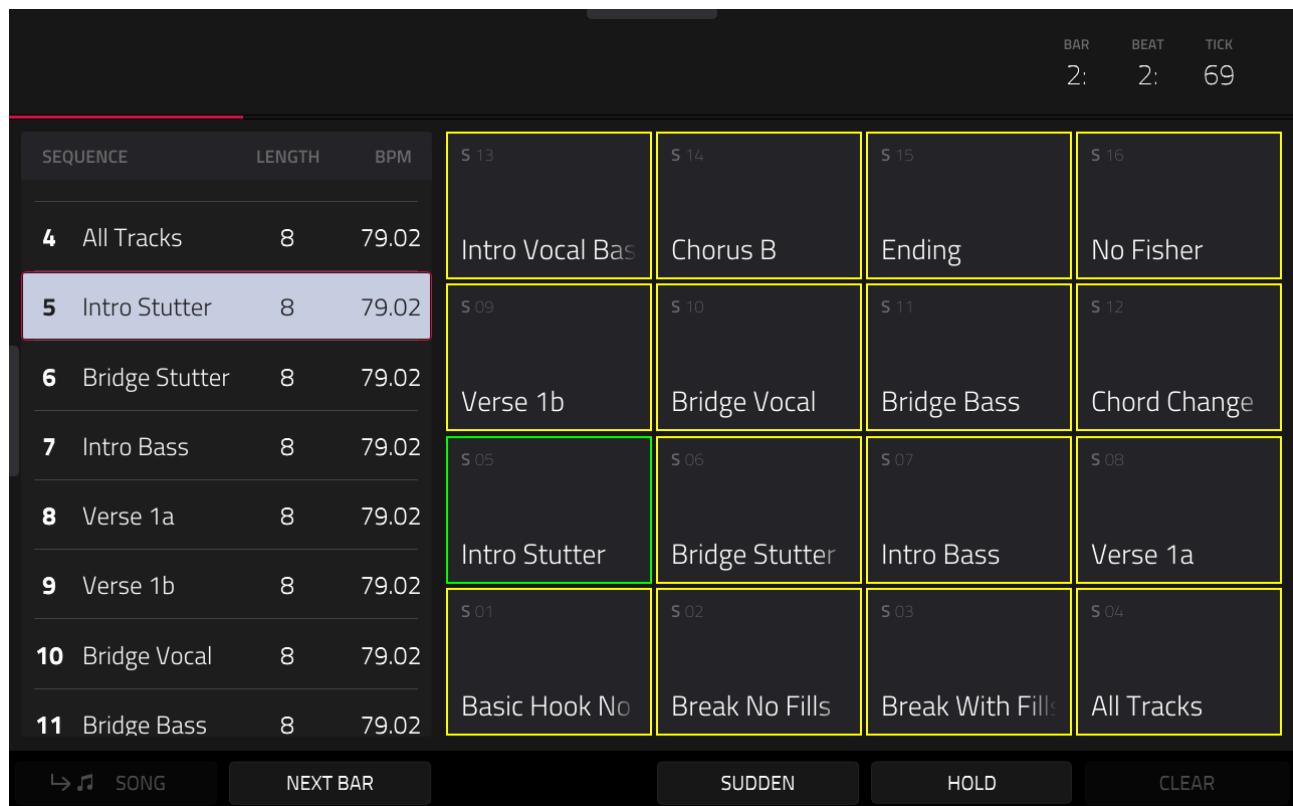
Of course erasing is all about permanently removing events from a track, so if later decide you want to put those events back then you'll need to

use **SEQUENCE EDIT > COPY EVENTS** to copy the events back from one of your 'template' sequences.

If you tap on the current sequence name and turn your (DATA WHEEL) clockwise to view the additional thirteen sequences I created, each covering another potential section of the song arrangement.

USING NEXT SEQUENCE FOR ARRANGEMENT IDEAS

I previously showed you how you can 'line up' the 'next' sequence in MAIN to create on-the-fly arrangements, but there's an even better way of experimenting with sequence structure; go to [**MENU**] > **NEXT SEQUENCE**:

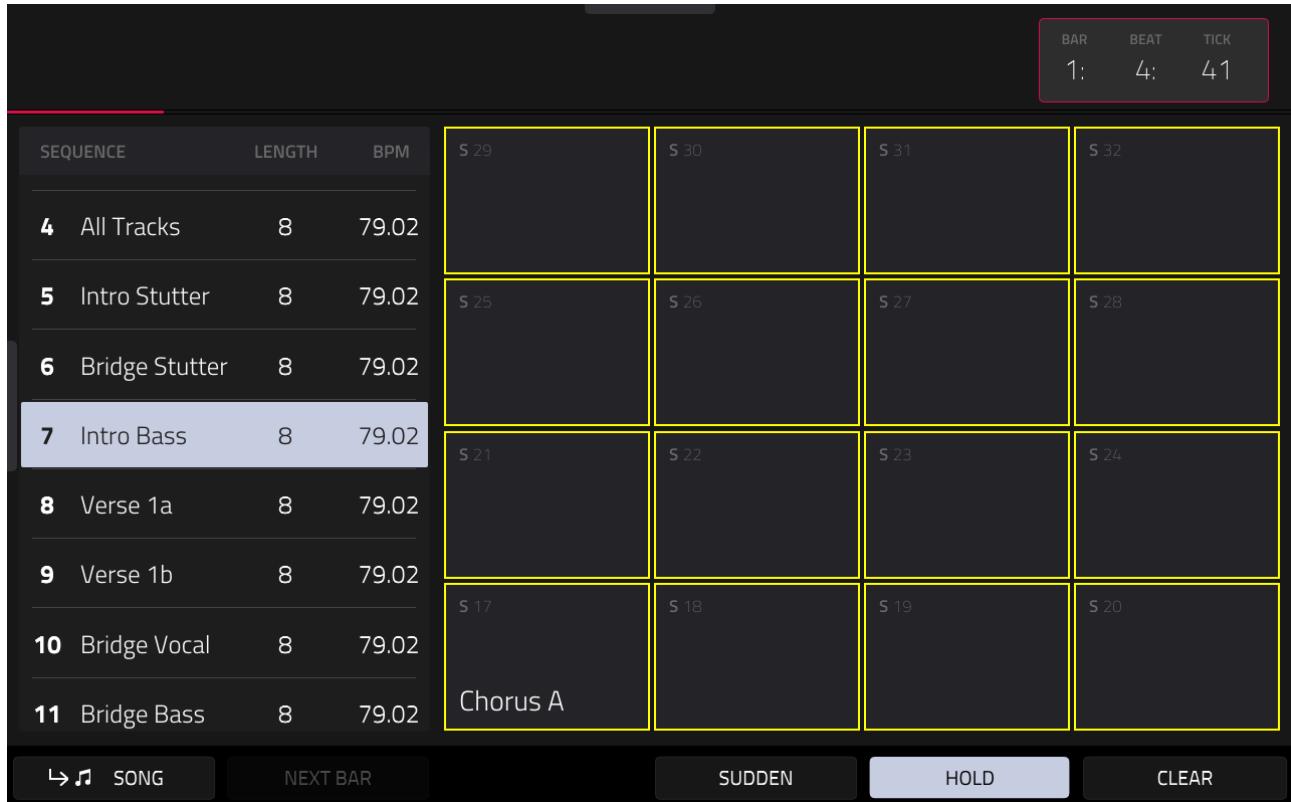


Here, all your sequences have been assigned to your pads. To select the "**Intro Stutter**" sequence, hit pad **[A05]** (or tap on the onscreen of the pad).

Press **[PLAY START]** and the currently selected sequence starts playing. While it plays, hit another pad to 'queue' the next sequence (it will flash green); this will be automatically launched when the current sequence finishes playing.

You can hit **SUDDEN** at any time to immediately launch the currently queued sequence, or use **HOLD** to temporarily ignore the queue and stick with the current sequence instead. The **CLEAR** button clears the current queue. If there's no queued sequence then the currently selected sequence just carries on playing (as long as it is set to **LOOP:ON**).

To access more than sixteen sequence, use the **[PAD BANK]** buttons:



After using NEXT SEQUENCE to experiment with the order in which your newly created sequences can flow, we can look at creating a more permanent arrangement in SONG MODE.

CREATING AN ARRANGEMENT WITH SONG MODE

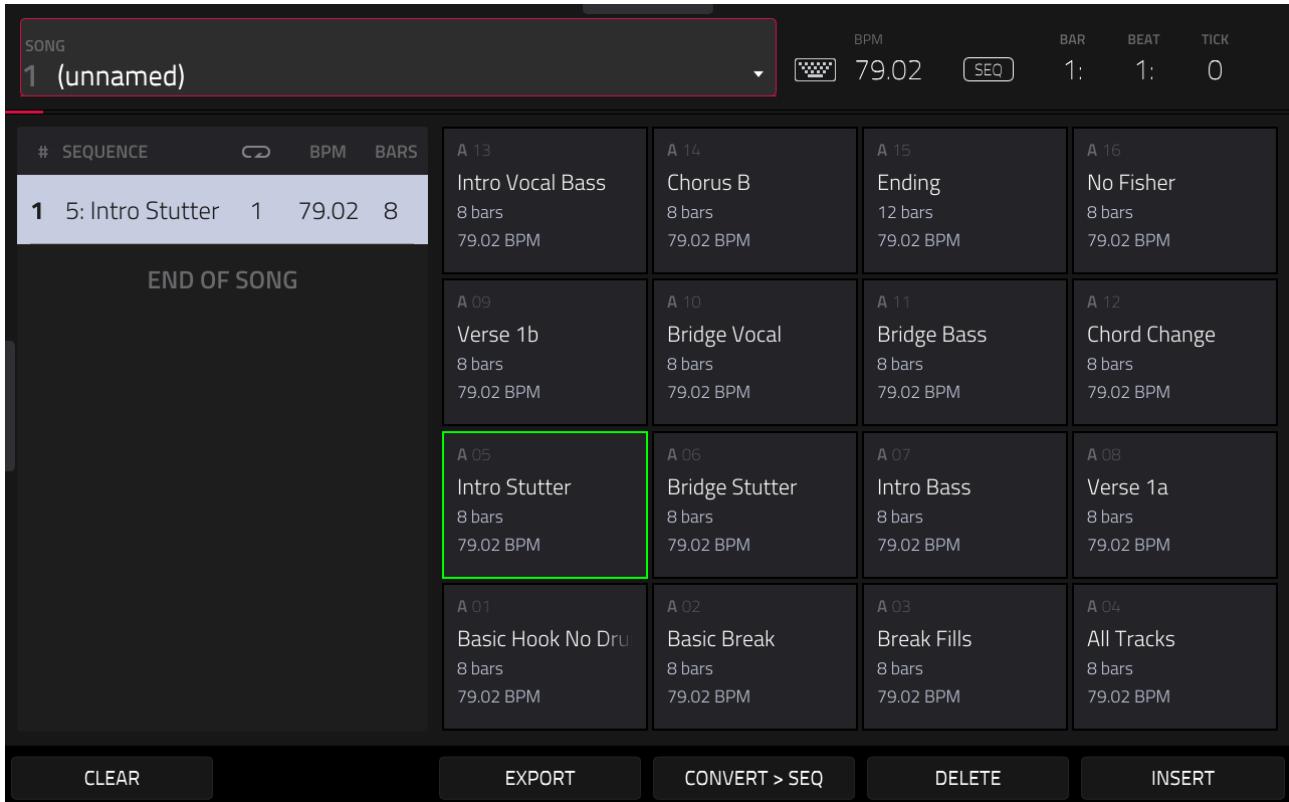
Go to [MENU] > SONG MODE:

C09 SONG MODE WORKFLOW

#	SEQUENCE	BPM	BARS
	END OF SONG		
A 13	Intro Vocal Bass 8 bars 79.02 BPM	A 14	Chorus B 8 bars 79.02 BPM
A 15	Ending 12 bars 79.02 BPM	A 16	No Fisher 8 bars 79.02 BPM
A 09	Verse 1b 8 bars 79.02 BPM	A 10	Bridge Vocal 8 bars 79.02 BPM
A 11	Bridge Bass 8 bars 79.02 BPM	A 12	Bridge Change 8 bars 79.02 BPM
A 05	Intro Stutter 8 bars 79.02 BPM	A 06	Bridge Stutter 8 bars 79.02 BPM
A 07	Intro Bass 8 bars 79.02 BPM	A 08	Verse 1a 8 bars 79.02 BPM
A 01	Basic Hook No Dru 8 bars 79.02 BPM	A 02	Basic Break 8 bars 79.02 BPM
A 03	Break Fills 8 bars 79.02 BPM	A 04	All Tracks 8 bars 79.02 BPM

CLEAR EXPORT CONVERT > SEQ DELETE INSERT

Here you can build an arrangement using a '*playlist*' of sequences. To insert a sequence into the playlist, first press the physical [**REC**] button and then hit the pad corresponding to the sequence you wish to insert – hit pad [**A05**]:



This inserts **sequence 5 (Intro Stutter)** into **step 1** of the playlist. The '1' shows how many repetitions of this sequence will be played (it just plays once by default – just tap to change this).

Press pad **[A07]** to insert **sequence 7 (Intro Bass)** as 'step 2' in our song. Continue this process for all the sequences you wish to add. Use **DELETE** to delete the currently selected sequence from the song.

The **[REC]** method of insertion always places the inserted sequence as the final step in the song playlist. So how do we insert a sequence at a different point in the song?

Look at the following 'song in progress':

C09 SONG MODE WORKFLOW

The screenshot shows the MPC Software interface in Song mode. At the top, it displays "SONG 1 (unnamed)" and various parameters: BPM 79.02, SEQ, BAR 41, BEAT 1, TICK 0. Below this is a grid of sequences:

#	SEQUENCE	BPM	BARS		A 13	A 14	A 15	A 16
1	5: Intro Stutter	1	79.02	8	Intro Vocal Bass 8 bars 79.02 BPM	Chorus B 8 bars 79.02 BPM	Ending 12 bars 79.02 BPM	No Fisher 8 bars 79.02 BPM
2	7: Intro Bass	1	79.02	8				
3	8: Verse 1a	1	79.02	8	A 09 Verse 1b 8 bars 79.02 BPM	A 10 Bridge Vocal 8 bars 79.02 BPM	A 11 Bridge Bass 8 bars 79.02 BPM	A 12 Chord Change 8 bars 79.02 BPM
4	9: Verse 1b	1	79.02	8				
5	10: Bridge Vocal	1	79.02	8	A 05 Bridge Stutter 8 bars 79.02 BPM	A 06 Bridge Stutter 8 bars 79.02 BPM	A 07 Intro Bass 8 bars 79.02 BPM	A 08 Verse 1a 8 bars 79.02 BPM
6	11: Bridge Bass	1	79.02	8				
END OF SONG					A 01 Basic Hook No Dru 8 bars 79.02 BPM	A 02 Basic Break 8 bars 79.02 BPM	A 03 Break Fills 8 bars 79.02 BPM	A 04 All Tracks 8 bars 79.02 BPM

At the bottom, there are buttons: CLEAR, SUDDEN, EXPORT, CONVERT > SEQ, DELETE, and INSERT. The sequence "11: Bridge Bass" is highlighted with a red box, and a large green arrow points from "Step 4 (Verse 1b)" to "Step 6 (Bridge Bass)".

Here I've realised that after **step 4 (Verse 1b)** I'd actually to insert **sequence 6 (Bridge Stutter)**. Unfortunately it's currently not possible to just insert a specific sequence at a specific point in the playlist!

Instead, first press [**STOP**] to leave 'Record' mode. Now tap on **step 4 (Verse 1b)** and hit **INSERT**:

C09 SONG MODE WORKFLOW

SONG
1 (unnamed)

BPM 79.02 SEQ BAR: 1:0 TICK

#	SEQUENCE	BPM	BARS
1	5: Intro Stutter	1	79.02 8
2	7: Intro Bass	1	79.02 8
3	8: Verse 1a	1	79.02 8
4	9: Verse 1b	1	79.02 8
5	9: Verse 1b	1	79.02 8
6	10: Bridge Vocal	1	79.02 8
7	11: Bridge Bass	1	79.02 8
END OF SONG			

A 13 Intro Vocal Bass 8 bars 79.02 BPM

A 14 Chorus B 8 bars 79.02 BPM

A 15 Ending 12 bars 79.02 BPM

A 16 No Fisher 8 bars 79.02 BPM

A 09 Verse 1b 8 bars 79.02 BPM

A 10 Bridge Vocal 8 bars 79.02 BPM

A 11 Bridge Bass 8 bars 79.02 BPM

A 12 Chord Change 8 bars 79.02 BPM

A 05 Intro Stutter 8 bars 79.02 BPM

A 06 Bridge Stutter 8 bars 79.02 BPM

A 07 Intro Bass 8 bars 79.02 BPM

A 08 Verse 1a 8 bars 79.02 BPM

A 01 Basic Hook No Dru 8 bars 79.02 BPM

A 02 Basic Break 8 bars 79.02 BPM

A 03 Break Fills 8 bars 79.02 BPM

A 04 All Tracks 8 bars 79.02 BPM

CLEAR **SUDDEN** **EXPORT** **CONVERT > SEQ** **DELETE** **INSERT**

This inserts a copy of the currently selected sequence (Verse 1b) into the step immediately *after* the currently selected step. You'll now have to tap on the sequence name in the new step 5 and use the (DATA WHEEL) to select **sequence 6 (Bridge Stutter)**:

3 8: Verse 1a 1 79.02 8	Verse 1b 8 bars 79.02 BPM	Bridge Vocal 8 bars 79.02 BPM	Bridge Bass 8 bars 79.02 BPM	Chord Change 8 bars 79.02 BPM
4 9: Verse 1b 1 79.02 8	A 05 Intro Stutter 8 bars 79.02 BPM	A 06 Bridge Stutter 8 bars 79.02 BPM	A 07 Intro Bass 8 bars 79.02 BPM	A 08 Verse 1a 8 bars 79.02 BPM
5 6: Bridge Stutt 1 79.02 8	A 01 Basic Hook No Dru 8 bars 79.02 BPM	A 02 Basic Break 8 bars 79.02 BPM	A 03 Break Fills 8 bars 79.02 BPM	A 04 All Tracks 8 bars 79.02 BPM
6 10: Bridge Vocal 1 79.02 8				
7 11: Bridge Bass 1 79.02 8				
END OF SONG				
CLEAR	SUDDEN	EXPORT	CONVERT > SEQ	DELETE
				INSERT

Yep, really unintuitive! 'Drag and drop' sequences into any position in the song playlist would be ideal, but nothing doing from Akai (song mode hasn't seen any updates for over a decade). It's also not possible to easily re-order a playlist, instead you'll have either delete steps and re-enter them, or edit existing steps to point to different sequences.

So, a feature very much in need of an overhaul, but it ultimately gets the job done!

Tap on the current song name and select **song 2 ('Enila Song 1')**:

#	SEQUENCE	BPM	BARS				
1	5: Intro Stutter	1	79.02 8				
2	7: Intro Bass	1	79.02 8				
3	8: Verse 1a	1	79.02 8				
4	9: Verse 1b	1	79.02 8				
5	6: Bridge Stutter	1	79.02 8				
6	10: Bridge Vocal	1	79.02 8				
7	11: Bridge Bass	1	79.02 8				
8	17: Chorus A	1	79.02 8				
A 13	Intro Vocal Bass 8 bars 79.02 BPM	A 14	Chorus B 8 bars 79.02 BPM	A 15	Ending 12 bars 79.02 BPM	A 16	No Fisher 8 bars 79.02 BPM
A 09	Verse 1b 8 bars 79.02 BPM	A 10	Bridge Vocal 8 bars 79.02 BPM	A 11	Bridge Bass 8 bars 79.02 BPM	A 12	Chord Change 8 bars 79.02 BPM
A 05	Intro Stutter 8 bars 79.02 BPM	A 06	Bridge Stutter 8 bars 79.02 BPM	A 07	Intro Bass 8 bars 79.02 BPM	A 08	Verse 1a 8 bars 79.02 BPM
A 01	Basic Hook No Dru 8 bars 79.02 BPM	A 02	Basic Break 8 bars 79.02 BPM	A 03	Break Fills 8 bars 79.02 BPM	A 04	All Tracks 8 bars 79.02 BPM

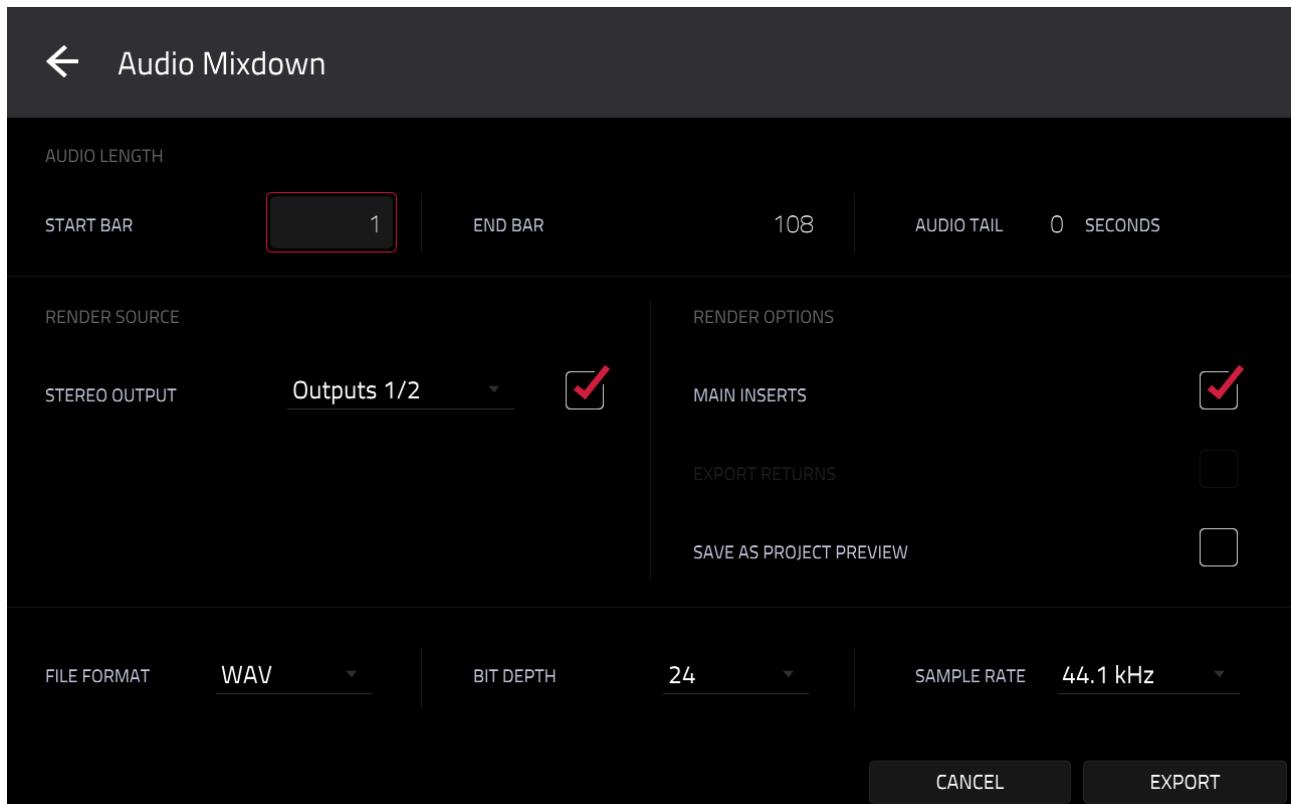
This is my arrangement (drag the playlist upwards to see steps 9 onwards – this only works if the song isn't playing). Remember you can use any combination of sequences you wish, you can use the same sequence in multiple positions (for example I use **Bridge Stutter** in **step 5** and **step 12**).

Hit [**PLAY START**] to listen to my arrangement. At this point I'm more focused on creating the general structure of the song as we can edit and tweak individual detail later.

You can of course create additional arrangements, song mode supports creation of up to 32 unique songs from the same 'pool' of sequences within any project.

CONVERTING SONGS

Once you are happy with one particular arrangement, there are two options. The first is to hit **EXPORT**:

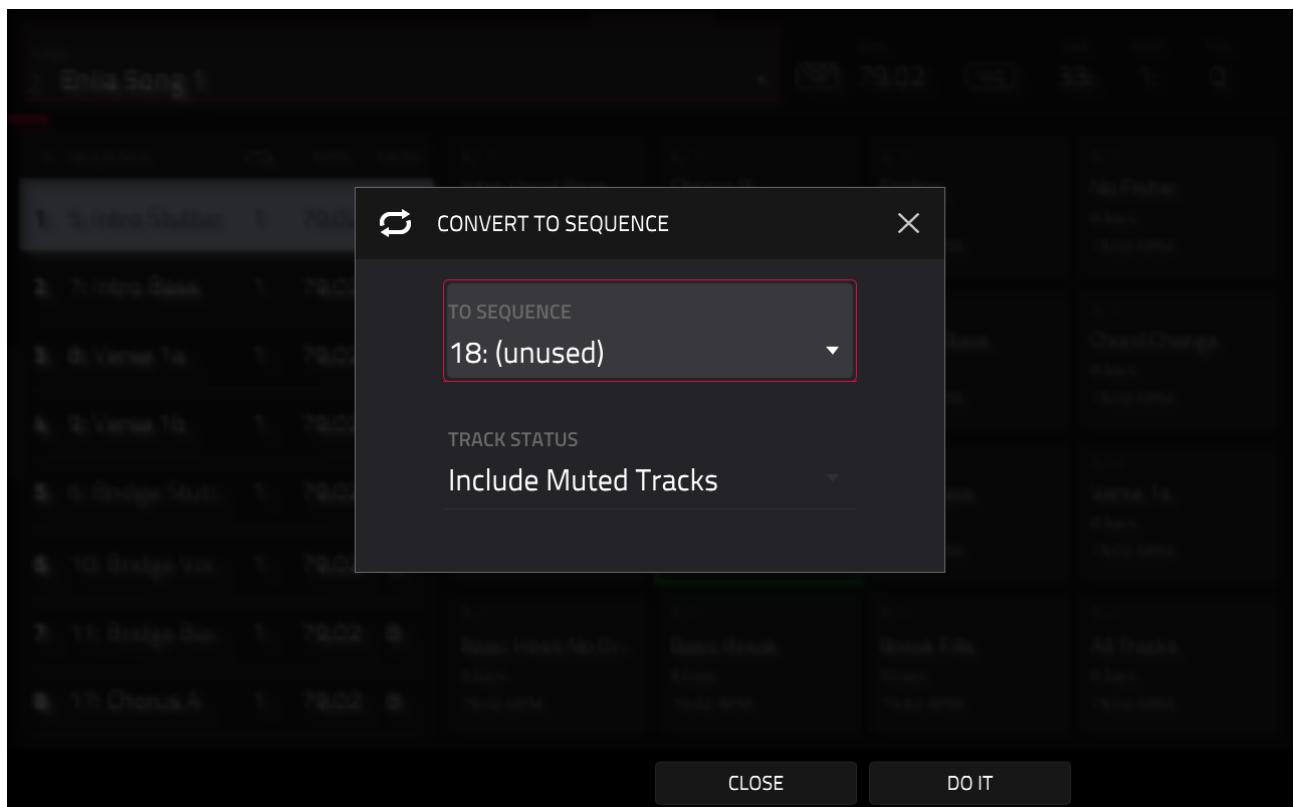


This will create a stereo mix down of your song, but as you'll notice in song mode it's fairly stripped down in terms of features; there's no 'separate tracks' option and no 'returns' export. This is really just for creating a quick, rough stereo mix down, perhaps to forward to a third party or for you to listen to the song in a different environment (e.g. car audio system etc).



You can also use it to add a browser preview to the project file itself (check '**SAVE AS PROJECT PREVIEW**').

A far more useful feature here is **CONVERT > SEQ**

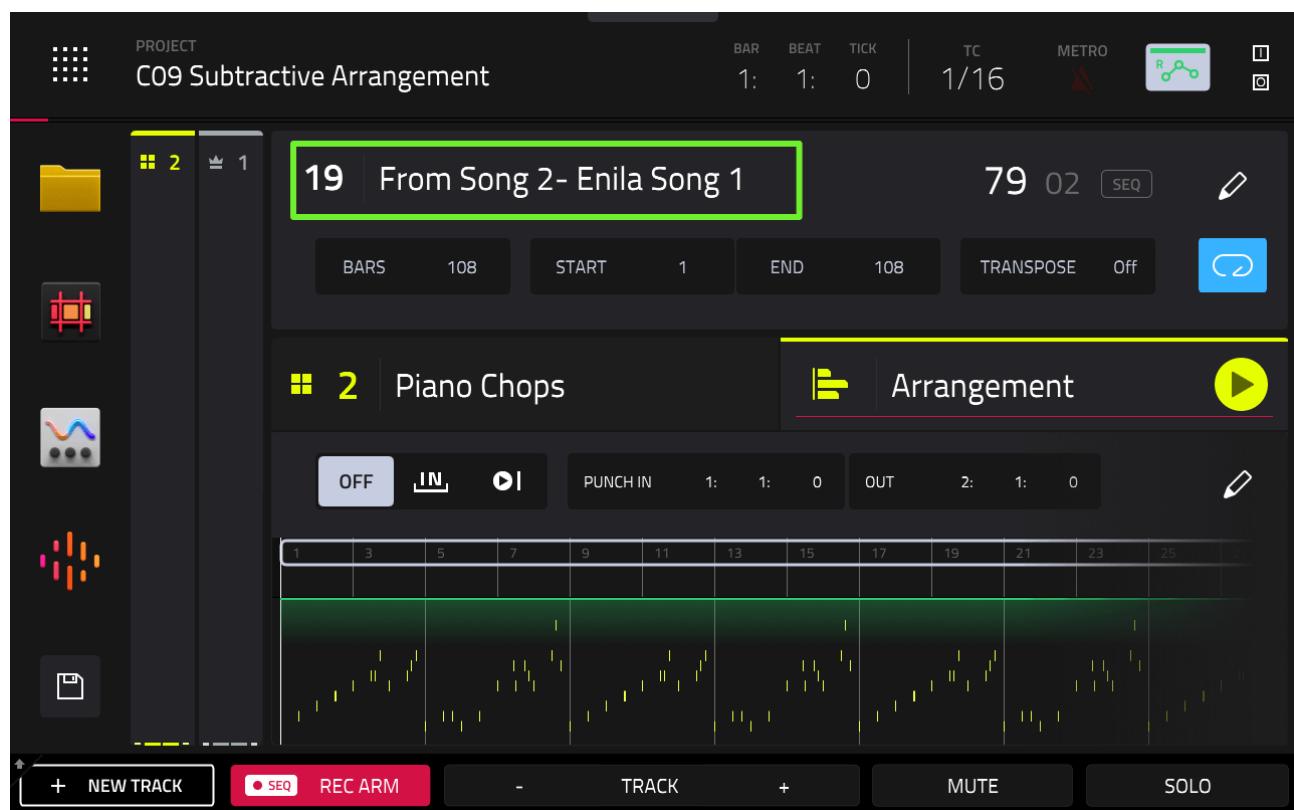


This will convert this entire multi-sequence song into a single, 108 bar sequence which you can then further edit with all the 'linear workflow' techniques we covered in Section B.

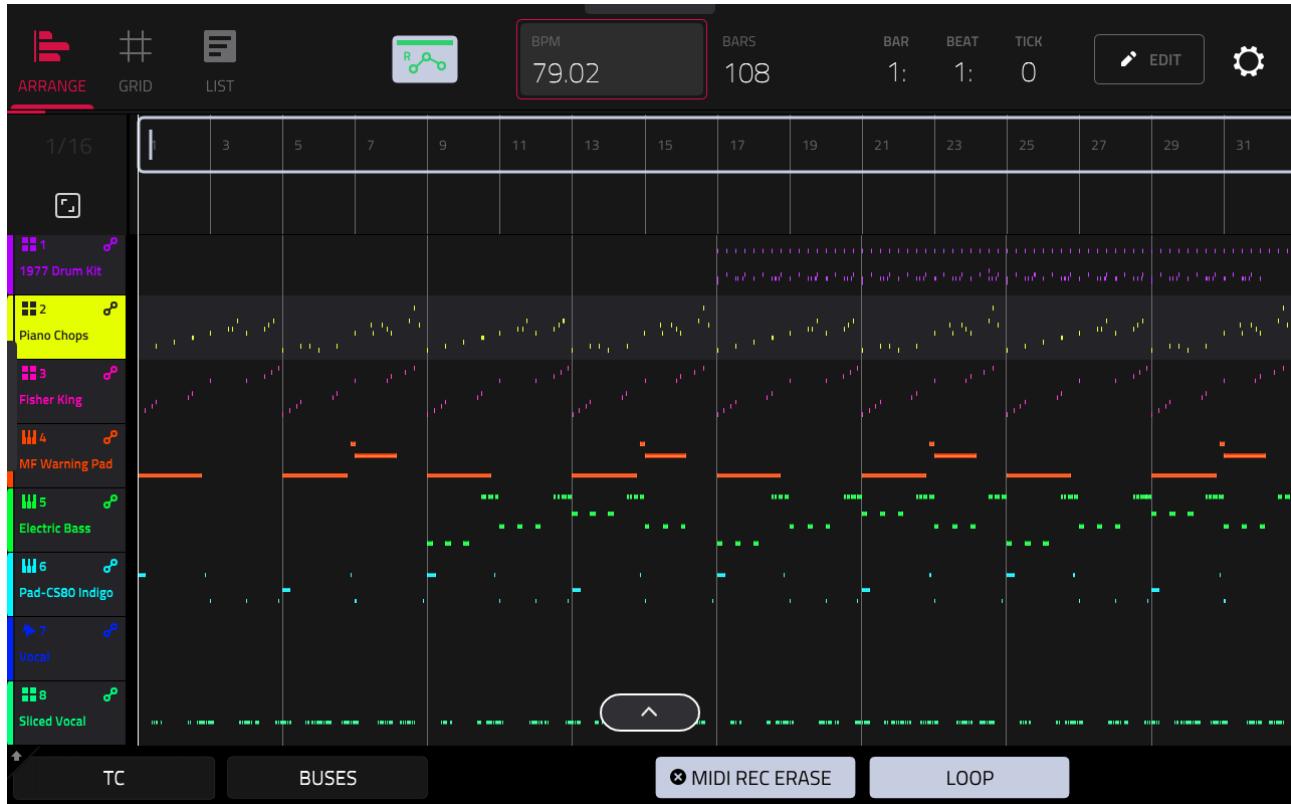
For example, you can carry out more overdubs, add more tracks (e.g. song wide audio track), make small sequencing adjustments, add automations across large portions of the song, complex mixing and so on.

The conversion process should respect all mutes and any automations added to individual sequences. Where there are sequences with different tempos the conversion will use 'tempo events' to insert the required changes in tempo throughout the converted sequence.

Select any empty (unused) sequence and hit **DO IT**. You can view my version on **sequence 19** in [**MAIN**]:



and as it's a single sequence, you can manage the entire song in **ARRANGE**:



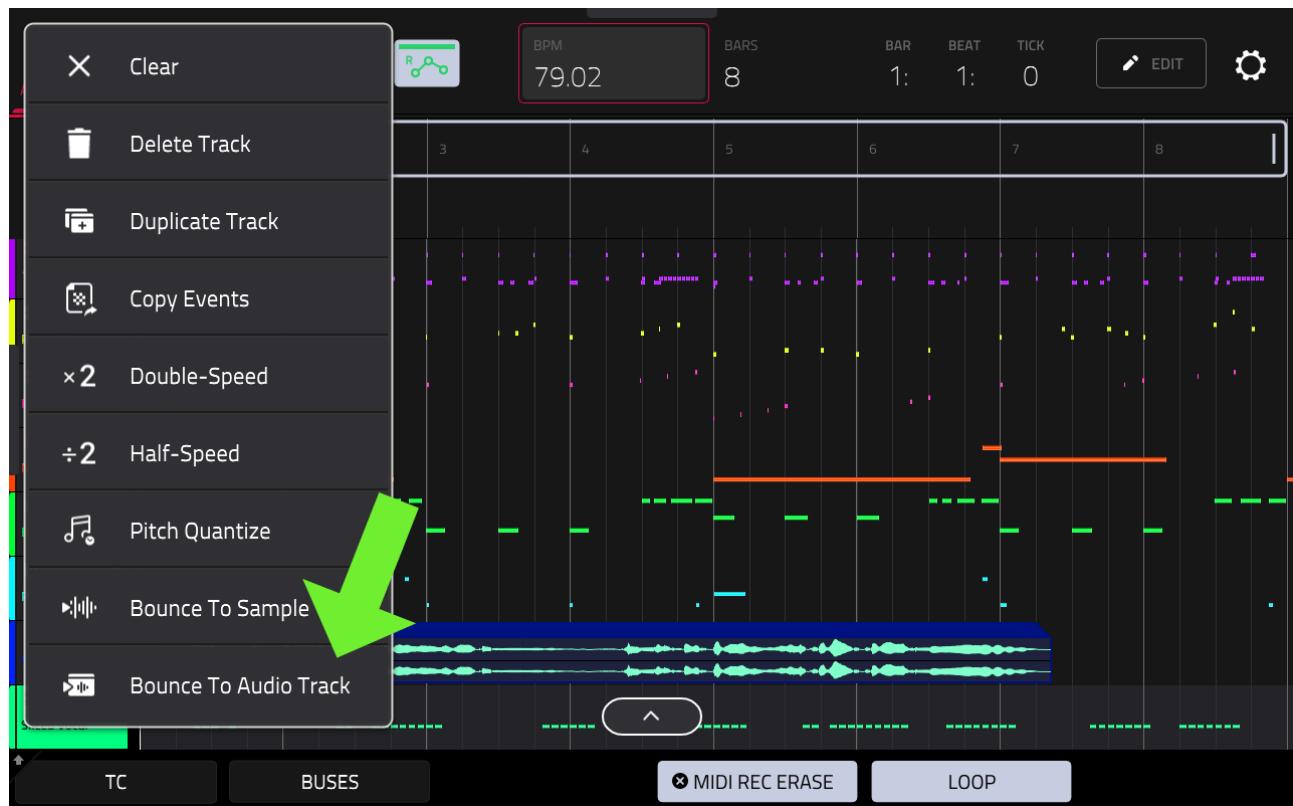
EDITING THE LINEAR ARRANGEMENT

Hit [PLAY START] and listen to the converted sequence. It's a carbon copy of the original 'multi-sequence song' apart from one aspect - the 'random' slices used in the Vocal Slice track have effectively been re-recorded with a new 'random' pattern from bars 9 onwards!

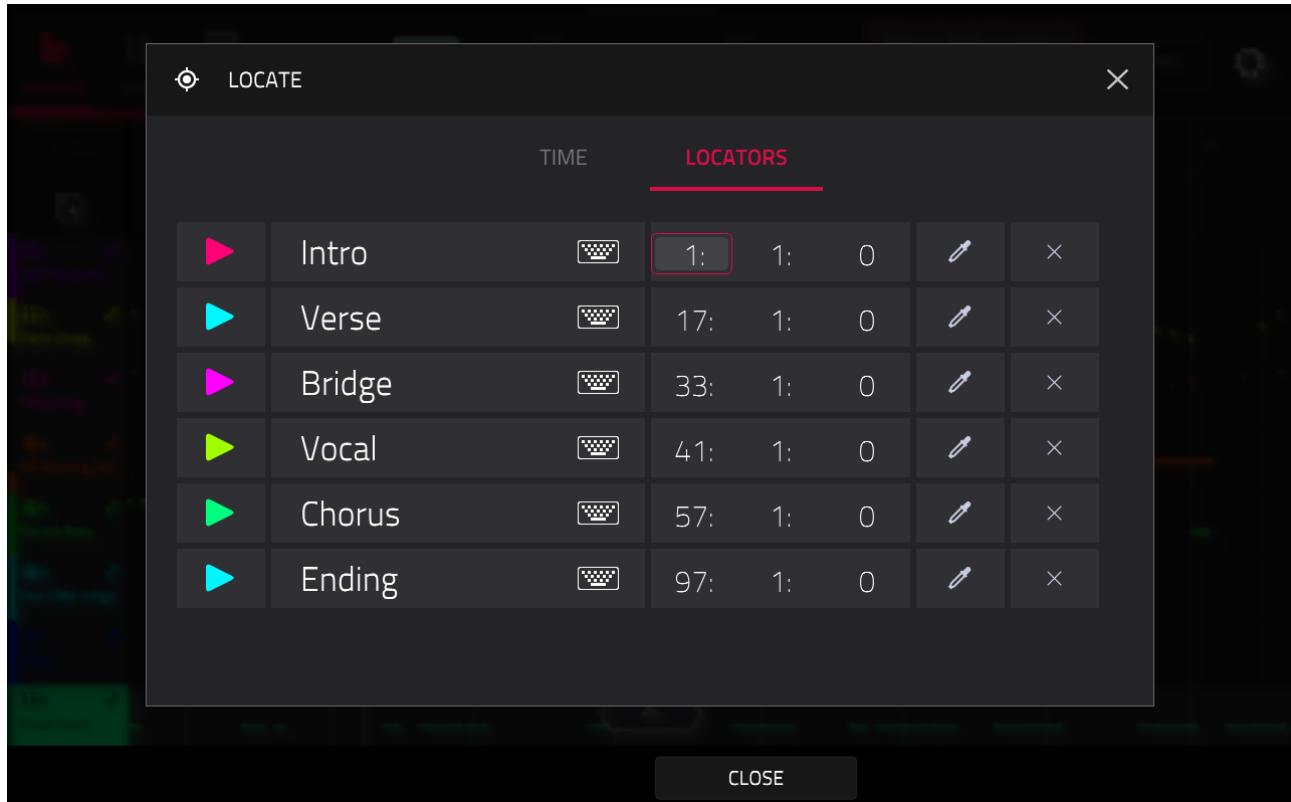
Personally I think that's great as it adds more variety over the 108 bars instead of the exact same 8 bar vocal stutter pattern all the time.

If you really want to repeat the exact same 'random' pattern of stuttering vocals throughout the entire song them I believe the only way you can achieve this is to select the '**Vocal Slice**' track in one of the original

sequences and use '**Bounce to Audio Track**' to create a '**flattened**' version of the **Vocal Slice** events which you can then copy and re-use instead of the Vocal Slice track throughout your song.



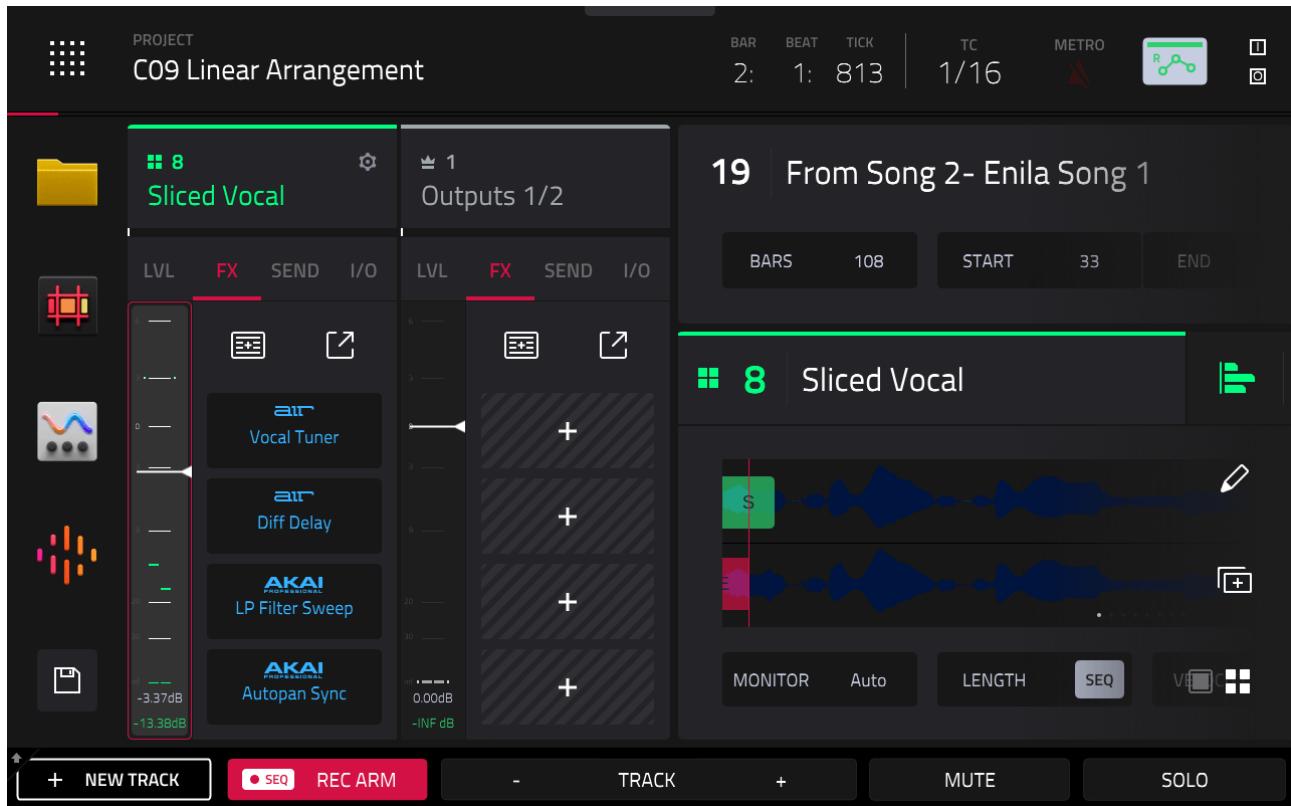
The next step is to add some **LOCATE** points so we can navigate our long sequence more effectively. Unfortunately we only have six locator points to play with so I just picked the following (you can always change locate points at any time in the editing process):



MANIPULATING FX WITH THE XY-PAD

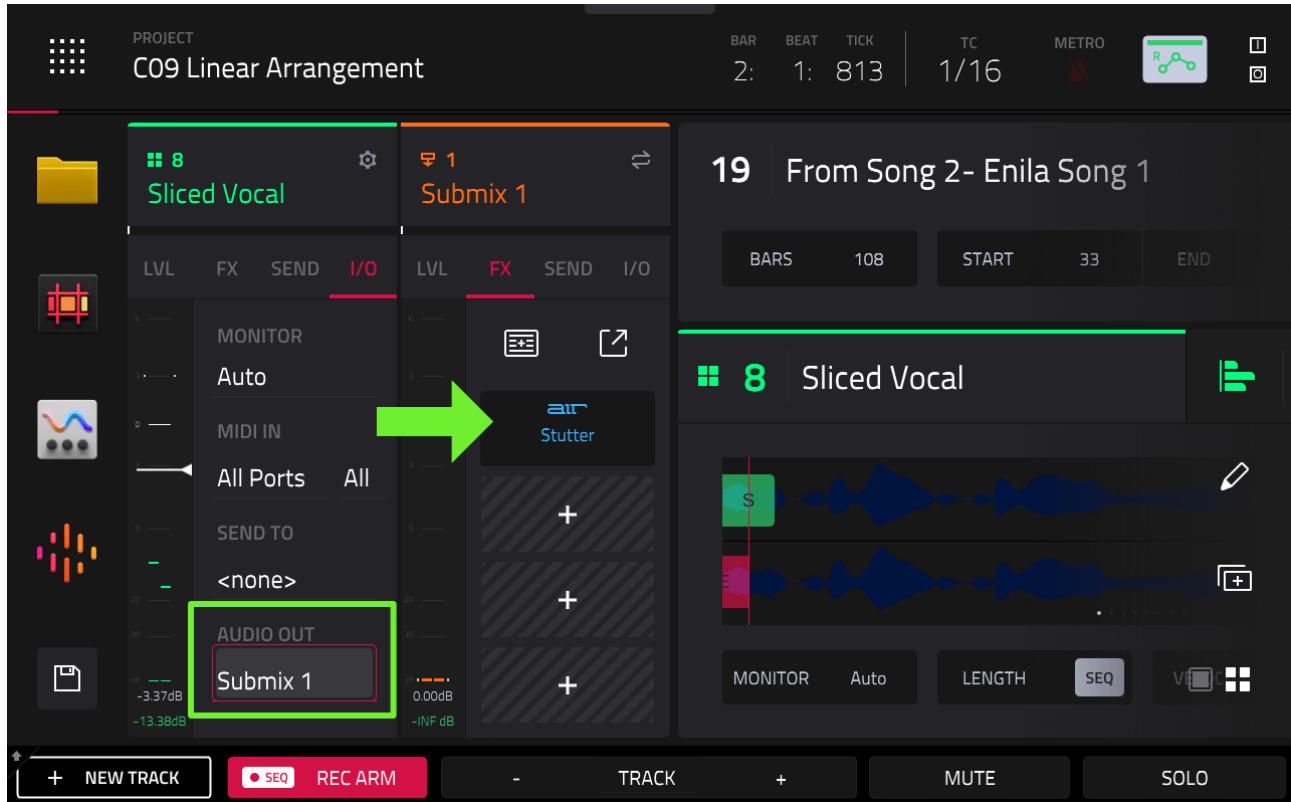
Let's add some even more interesting 'stutters' to some of the Vocal Slices track. First, let's insert an instance of AIR Stutter to this track, so go to **[MAIN]** and select the **FX tab** for the **Sliced Vocal** track in the **XL CHANNEL STRIPS**:

C09 SONG MODE WORKFLOW



Unfortunately all four insert slots are taken! Not a problem, let's create some more FX slots; tap on the **I/O** tab and change **AUDIO OUT** to **Submix 1**:

C09 SONG MODE WORKFLOW



Now the Sliced Vocal track is sent to 'Submix 1' first (before being sent to Outputs 1/2). Submix 1 has its own four FX slots which we are free to use in addition to any 'track' FX slots – assign **AIR Stutter** to **INSERT 1** on **Submix 1**.

Configure **AIR Stutter** as follows:

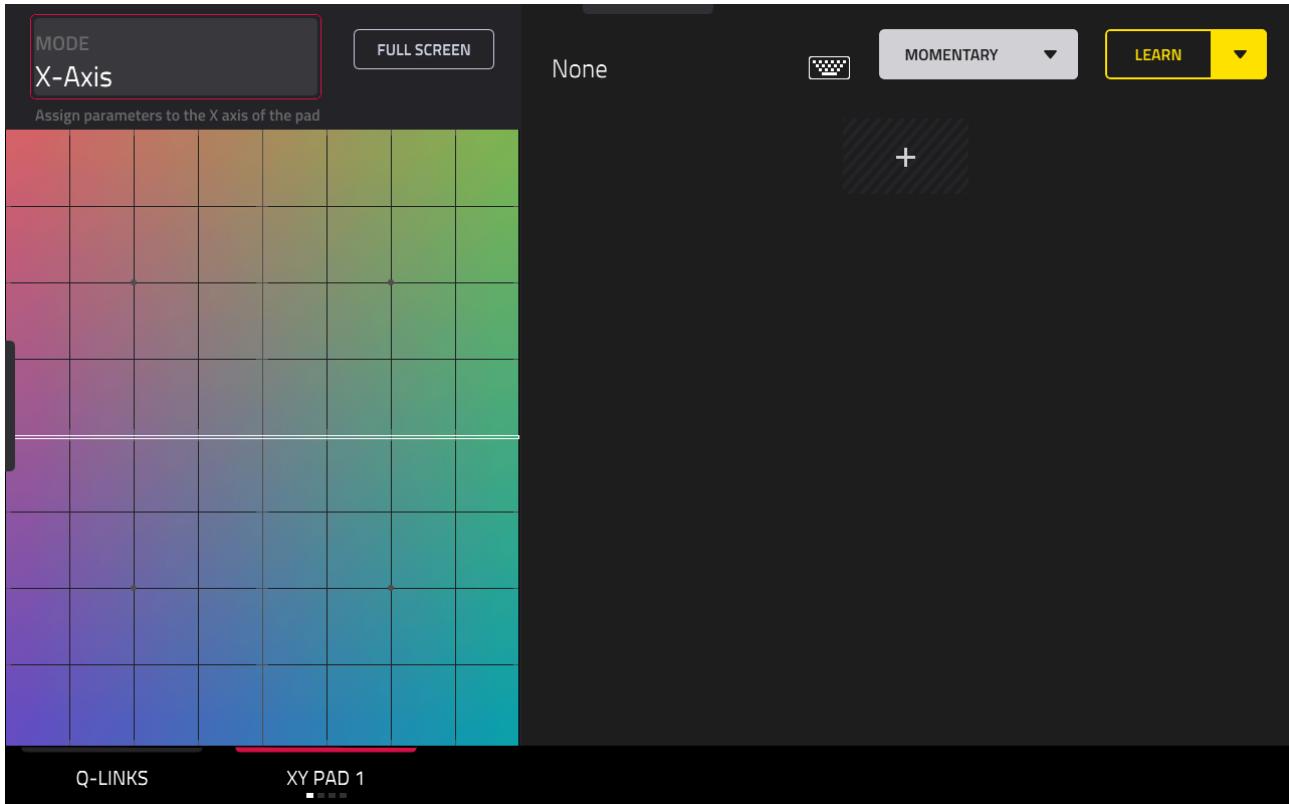


Hit [**PLAY START**] and listen to AIR Stutter in action – it adds a different element to the existing stutters. Feel free to adjust the **INTERVALS**, **STEPS** and **STEP LENGTH** to taste until you get the desired effect.

Set the **MIX** to **0%** and in the **ARRANGER** set the sequence loop region around the 'ending' portion of the song (the last few bars where the stutter plays out).

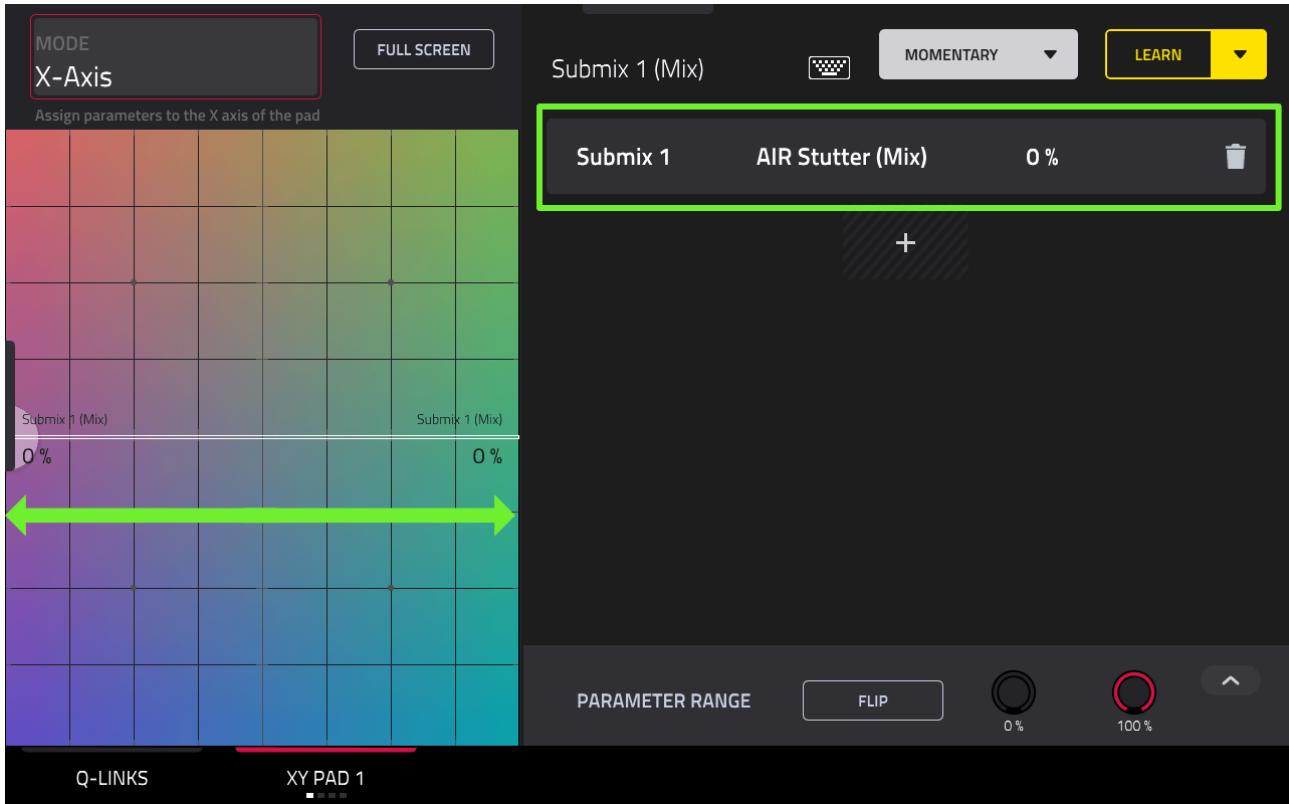
Now head over to the **Q-LINK EDIT** screen. You can do this by holding down [**Q-LINK**] > **Q-LINK EDIT**, or go to [**MENU**] > **Q-LINK EDIT**.

Once there, tap on the **XY PAD 1** button:



Here we can configure macros but instead of being controlled by Q-LINK dials, you'll use the 'XY' touchscreen display. and literally 'draw' your parameter changes in real time.

With the X-Axis selected, tap on the + on the right side of the screen to add a macro (it can sometimes take a little time to load the parameter screen). Select **Mixer > Submix 1 > Insert 1 > Mix**



This has mapped the '**MIX**' dial for the Air Stutter plugin across the 'X axis' of the XY Pad screen – this is the horizontal axis that runs from left to right. Tap on (or close to) the on screen circle and as you drag the circle across the screen you'll see the **MIX** value increase.

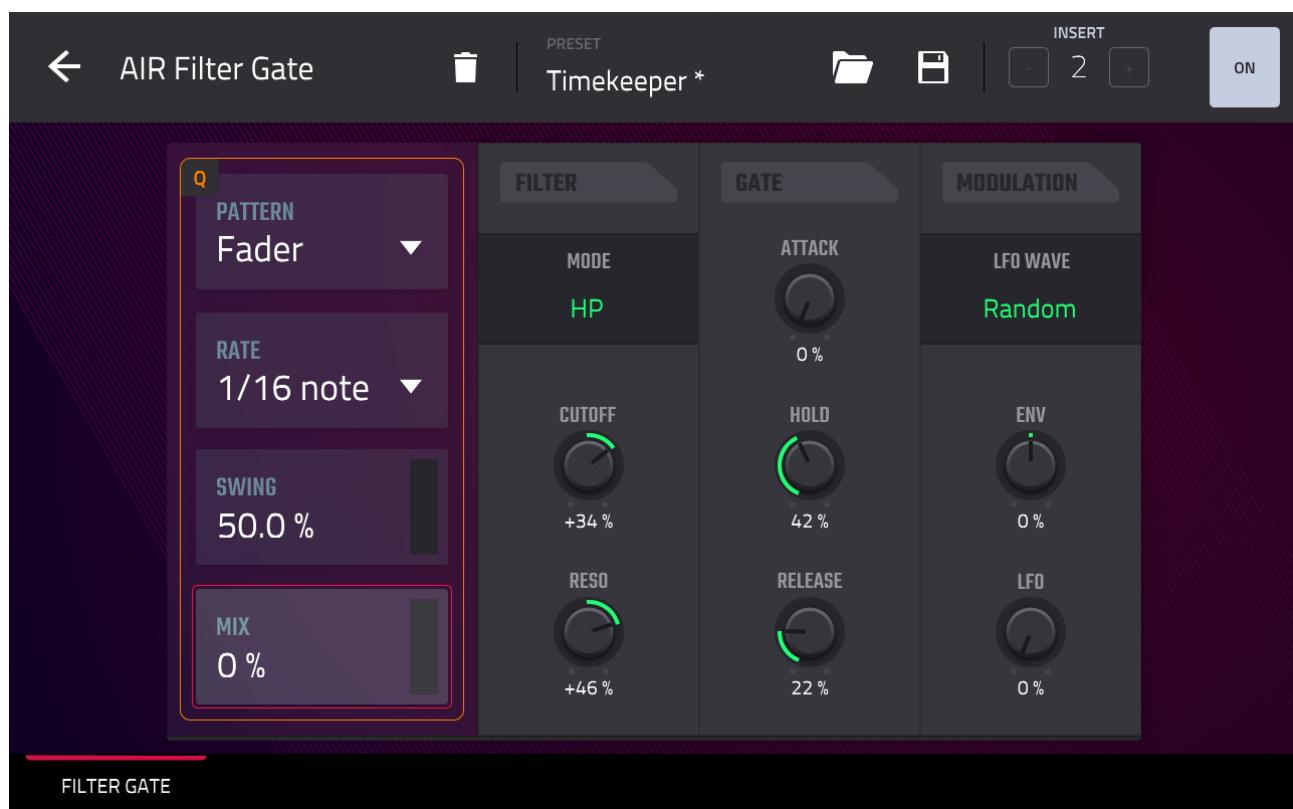
Tap on **MOMENTARY** and set to '**GO TO MINIMUM**' to ensure it always 'snaps' back to **MIX: 0%** upon releasing your finger; the MINIMUM value is set by left hand value in the **PARAMETER RANGE** at the bottom of the screen (0% by default).

Play the sequence and use your finger to vary the mix; it sounds nice increasing the MIX on the last bar or so.



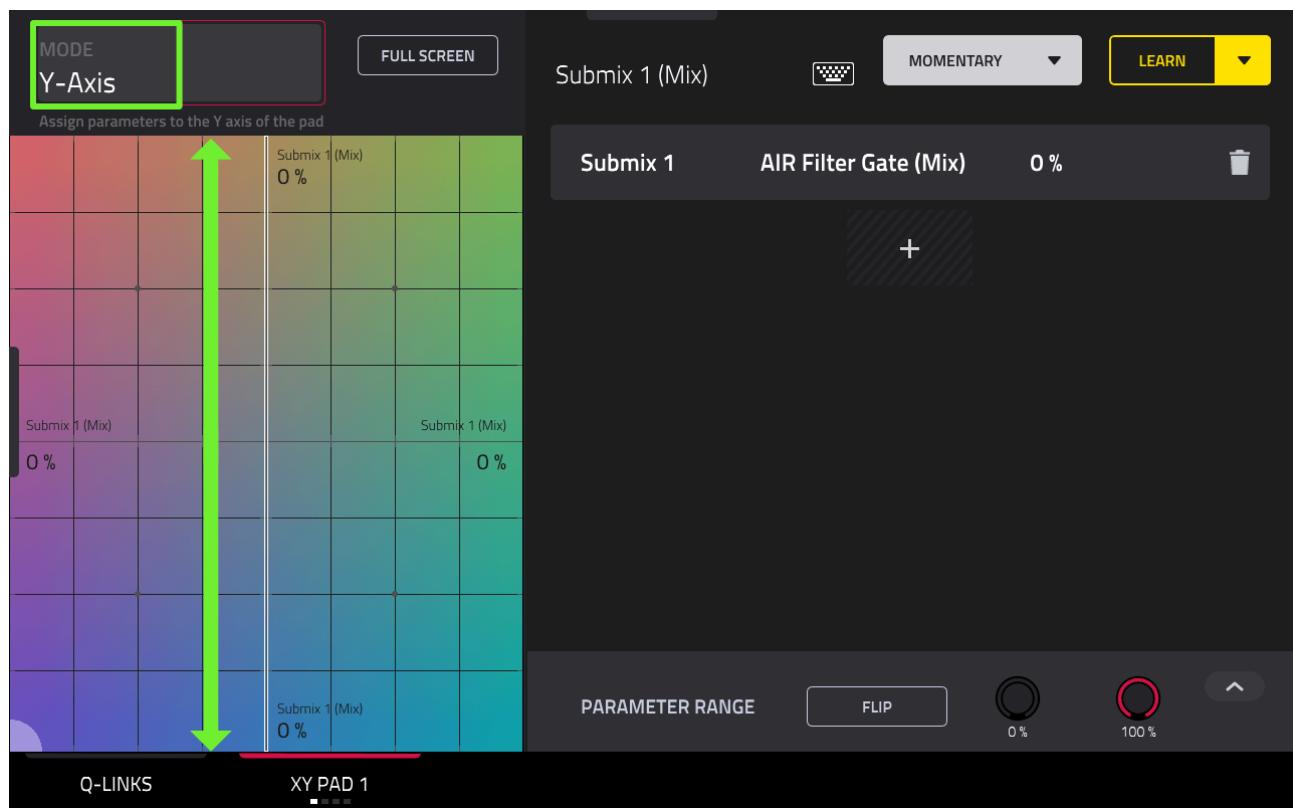
If you find you are accidentally catching the pull out 'mode' menu, remember you don't have to place your finger exactly on the circle, it can be a little bit next to it, or you can turn off the pull out bar in **PREFERENCES > GENERAL > MODE MENU**.

Back in **[MAIN]**, add **AIR Filter Gate** to **INSERT 2** on **Submix 1** and configure like so:



Head back to **XY-Pad**. Once it's been previously opened it's a little quicker to access it by using the **MENU > Q-LINK EDIT** option, as the **[Q-LINK]** button route always takes you back to the normal 'q-links' page, rather than 'XY Pad'.

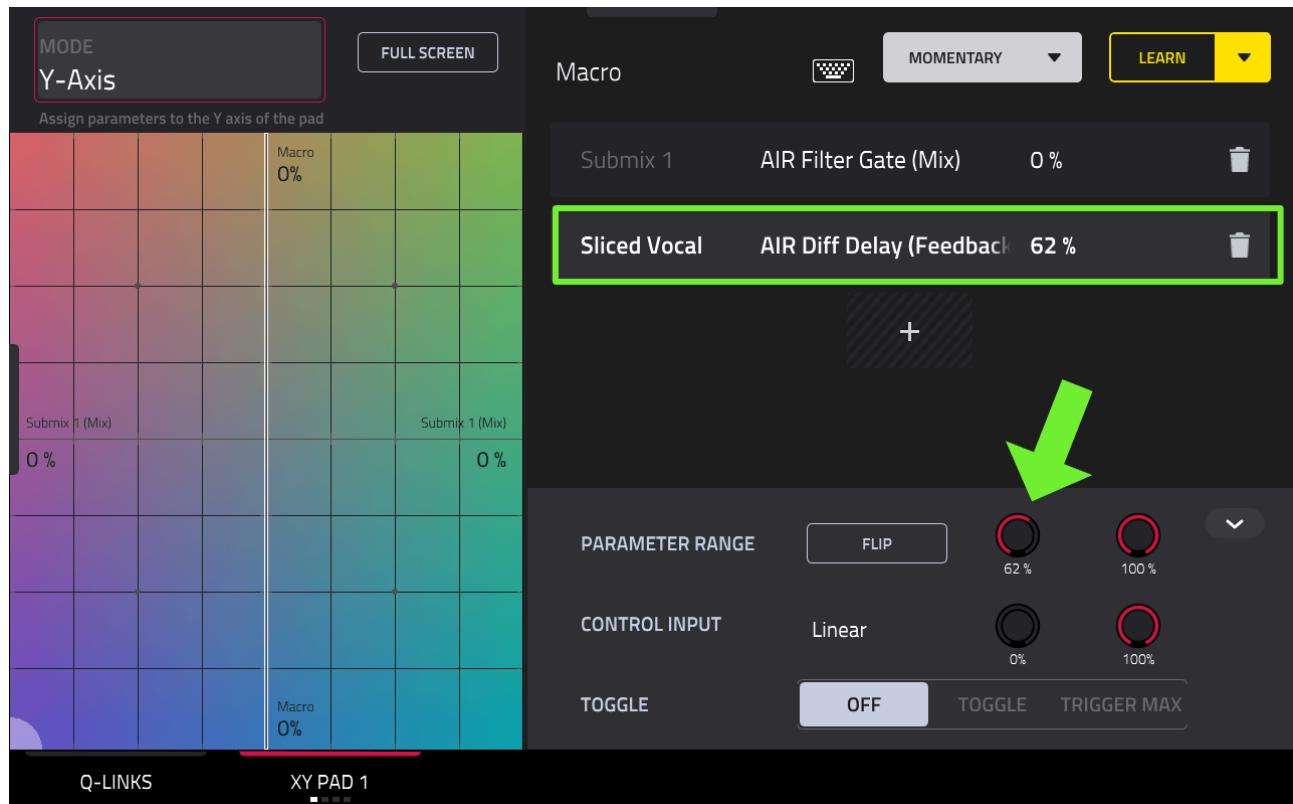
Select **Y-Axis** and add **Mixer > Submix 1 > Insert 2 > Mix** to add the Filter Gate 'MIX' macro:



Now you are able to move your finger around the touchscreen in both axis to apply varying blends of the two plugins.

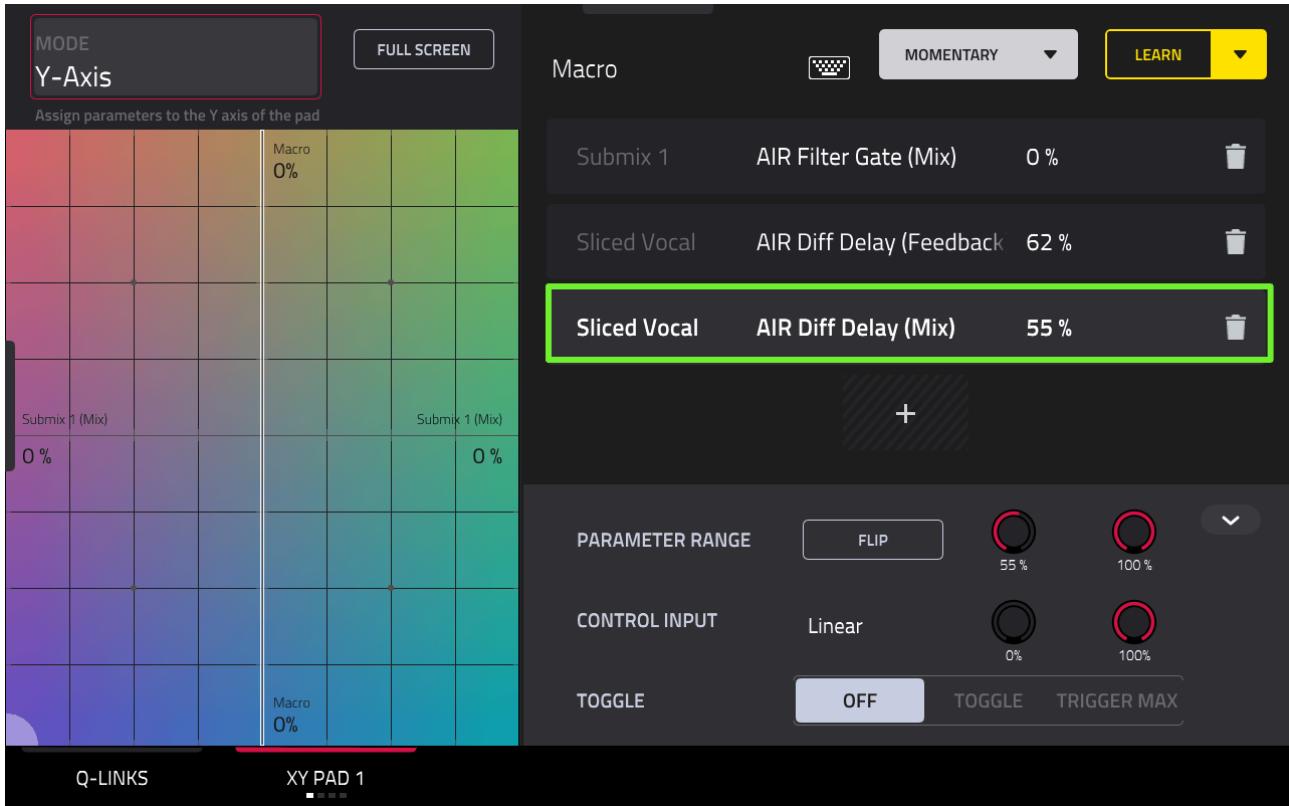
If you just want to add more filter gate, keep your finger on the left side of the screen and just move it upwards. To bring in increasing stutter, move it over to the right. Move it around in different areas to experiment with different blend ratios. Upon releasing your finger, both axis reset themselves to the 'minimum, which is the default '0%''.

Macros allow us to add multiple steps per axis, so let's add another parameter to the **Y-axis**. This time let's control the **AIR Diff Delay** which is on **INSERT 2** on the **Sliced Vocal** track itself. So hit the **+** button and add **Track > Sliced Vocal > Insert 2 > Feedback:**



As this effect is already used throughout the song, we'll want to ensure that any XY Pad moves we add always return to the preferred 'base' level, which for our delay's '**feedback**' parameter is **62%**. As our '**MOMENTARY**' button is set to 'Go to Minimum', we'll need to set that minimum value in the **PARAMETER RANGE** at the bottom of the screen.

Don't stop there, at a third, this time controlling the delay mix; **Track > Sliced Vocal > Insert 2 > Mix** with a **PARAMETER RANGE** Of **55%** to **100%**:



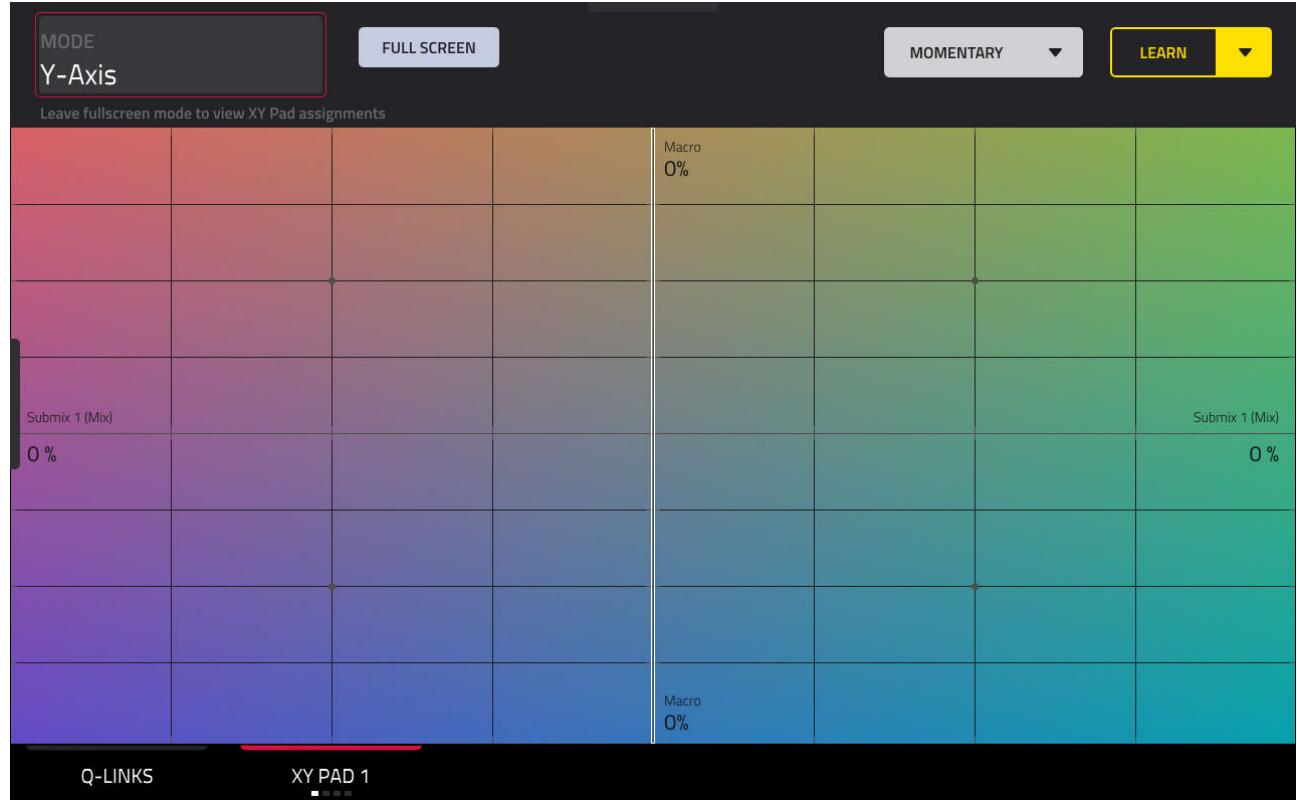
Try moving around the screen in little circles, especially giving it a lot of 'top right corner' action when the song has reached the very last bar and then backing off down to the bottom left corner. It's not an 'in your face' set of FX changes, it's lovely though!

That extra potential feedback means it's worth extending the overall sequence length to capture those lingering feedback echos; extend the sequence length to around **110 bars** – we can always reduce it later if need be.

If you select the **MODE** option in the top left of the screen you'll see there are many other options beyond just X and Y axis, including columns, rows, and quadrants. In fact when you combine it with the fact that you can

target pretty much any area of the screen to control almost any parameter on any track.

XY-Pad configuration is saved with your project, so the settings will always be recalled and ready for action. If you need more real estate, hit **FULL SCREEN**:



If you use the XY-Pad feature a lot, think about adding Q-LINK EDIT to the 'mode shortcut panel for quick access.

The last stage here is to actually record your XY Pad performance! This is going to be standard automation, so pull down the top menu, turn on

Automation Write and hit [**PLAY START**] to lay down your performance – If you make a mistake, just hit [**UNDO**] – for precise adjustment you can edit the events in **LIST EDIT** using **VIEW: Other**:

#	TIME	PAD/NOTE	LENGTH	VELOCITY	MOD TYPE	VALUE	PROB	RAT
1	001:01:000	Insert 2			Feedback	62 %		
2	001:01:000	Insert 2			Mix	55 %		
3	100:04:089	Insert 2			Feedback	70 %		
4	100:04:089	Insert 2			Mix	65 %		
5	100:04:167	Insert 2			Feedback	70 %		
6	100:04:167	Insert 2			Mix	65 %		
7	100:04:207	Insert 2			Feedback	70 %		
8	100:04:207	Insert 2			Mix	65 %		
9	100:04:306	Insert 2			Feedback	72 %		
10	100:04:306	Insert 2			Mix	67 %		

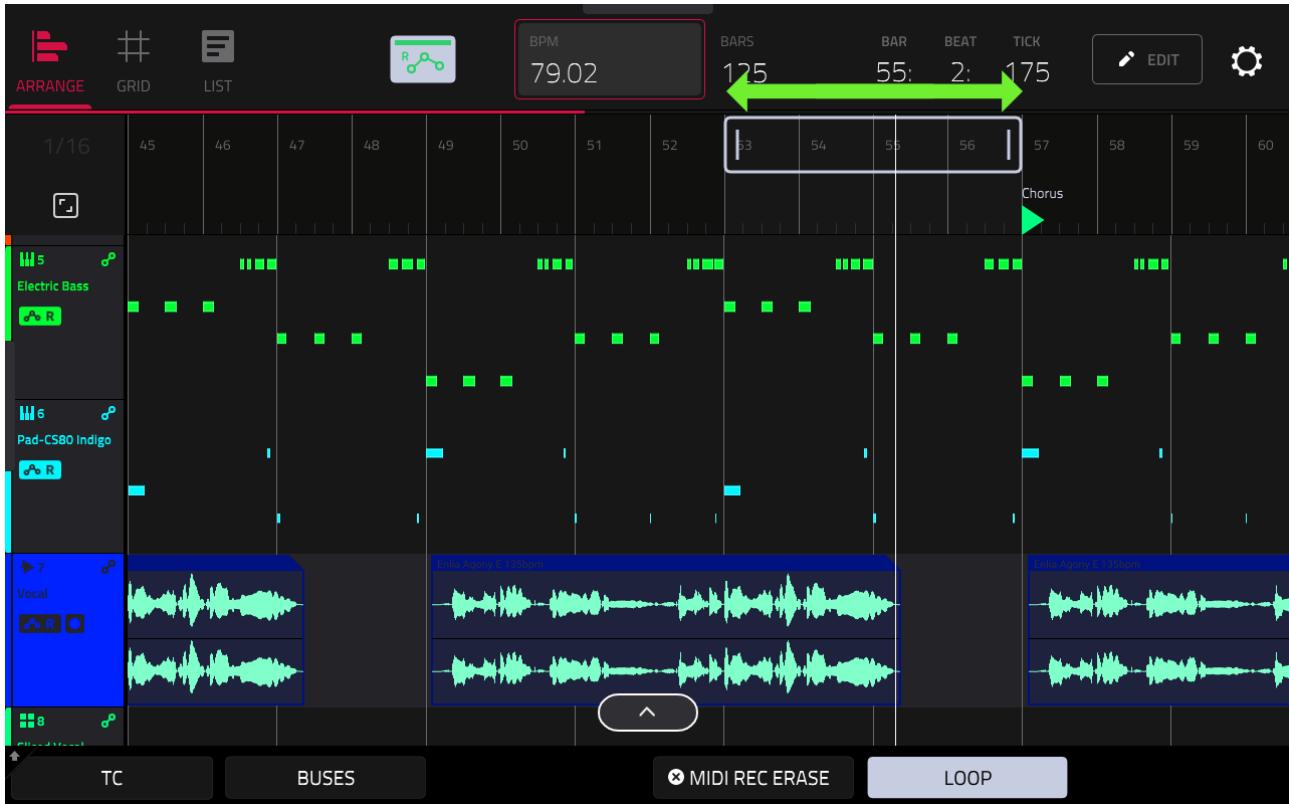
EVENTS TEMPO INSERT DELETE ► NUDGE

Remember to set automation back to 'read' afterwards.

USING THE XYFX PLUGIN

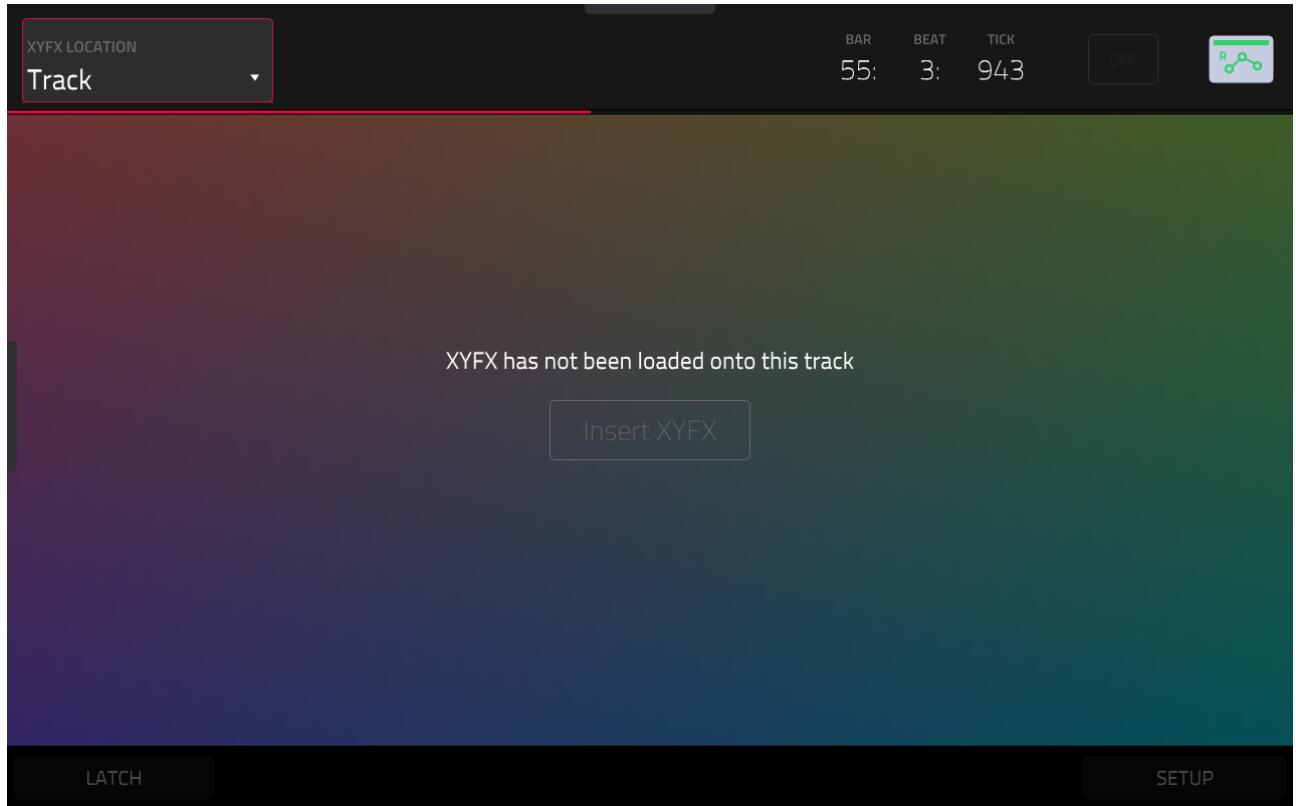
Another feature similar to XY Pad is the dedicated **XYFX plugin** – let's use this to add a high pass filter sweep to a portion of our main vocal track. First set a **sequence loop region** around bars **53** to **56**, this is the vocal just before the 'chorus' section kicks in:

C09 SONG MODE WORKFLOW

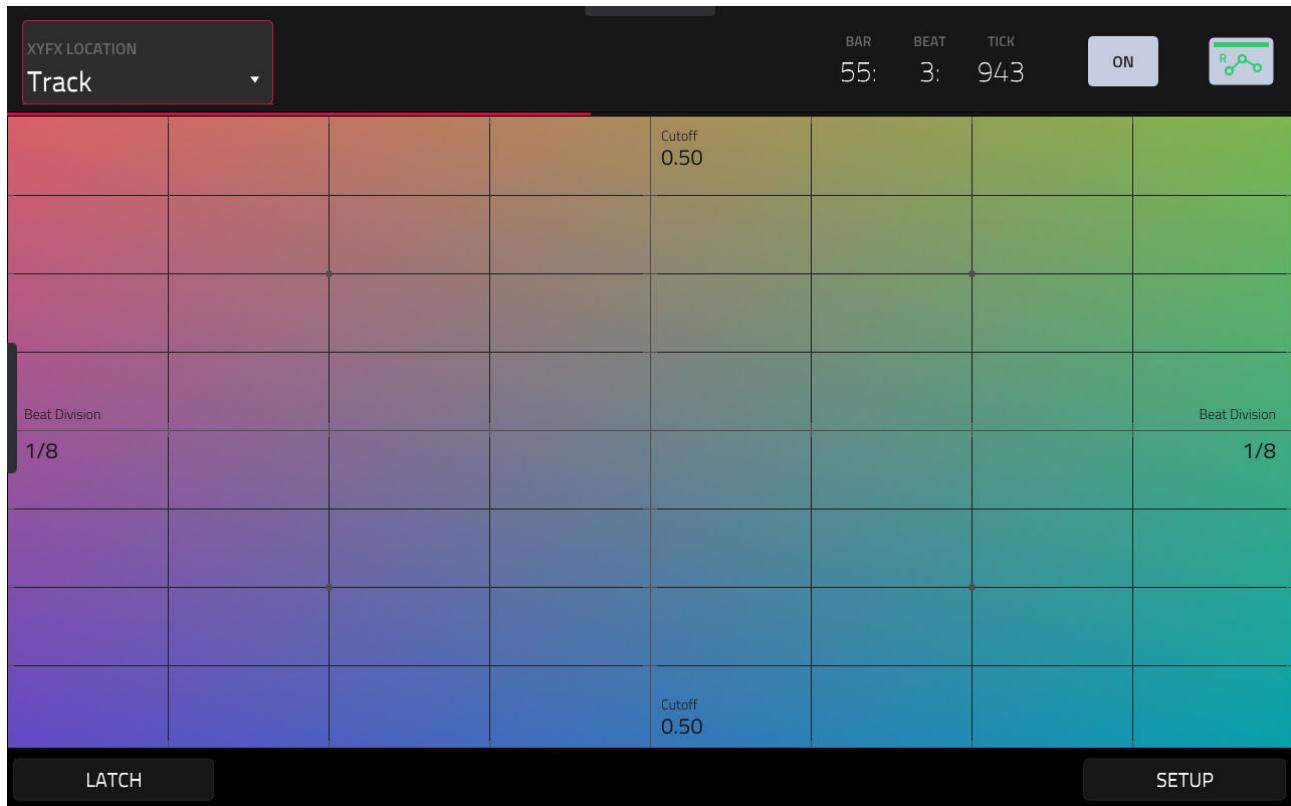


Now we'll need to add an instance of this plugin to our Vocal track – make sure the **Vocal track (7)** is currently selected and go to **[MENU] > XYFX**. In the top left of the screen, select **Track**:

C09 SONG MODE WORKFLOW

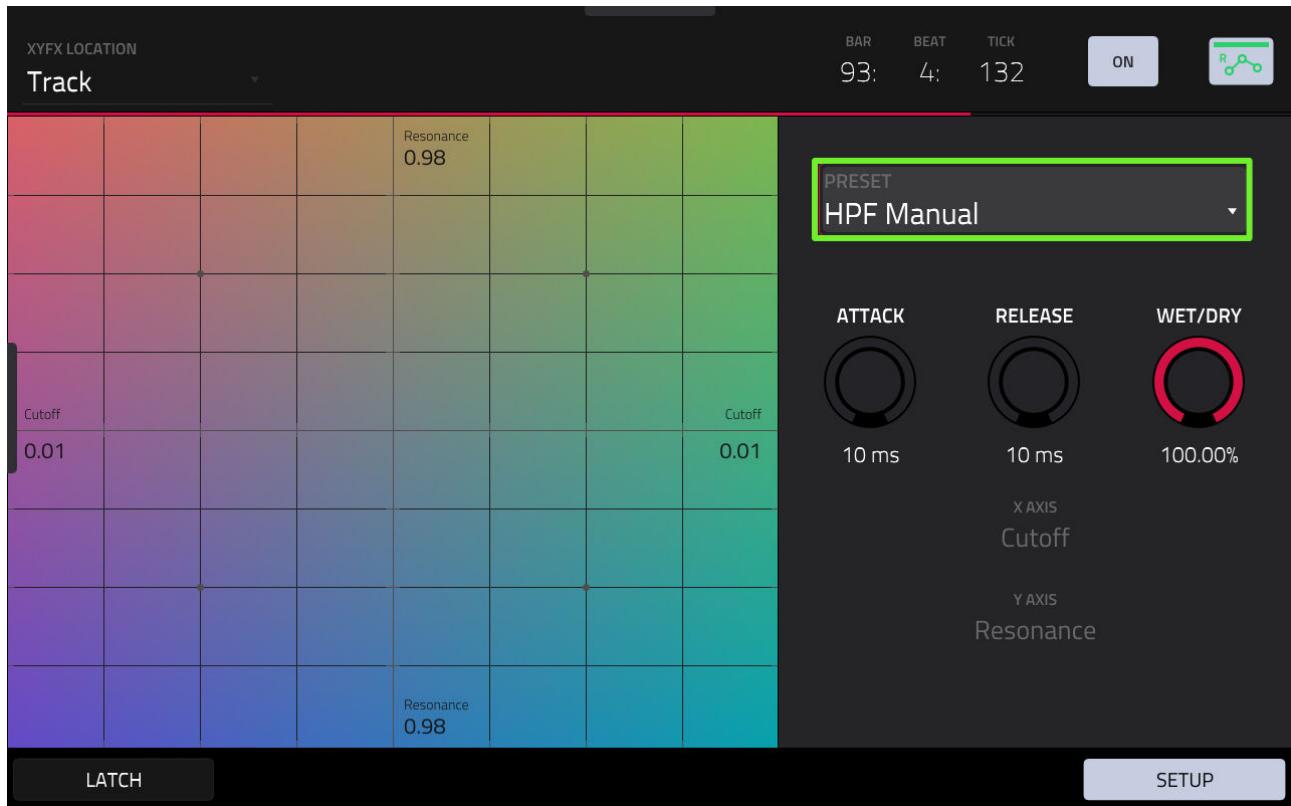


Tap on the **INSERT XYFX** button in the middle of the screen:

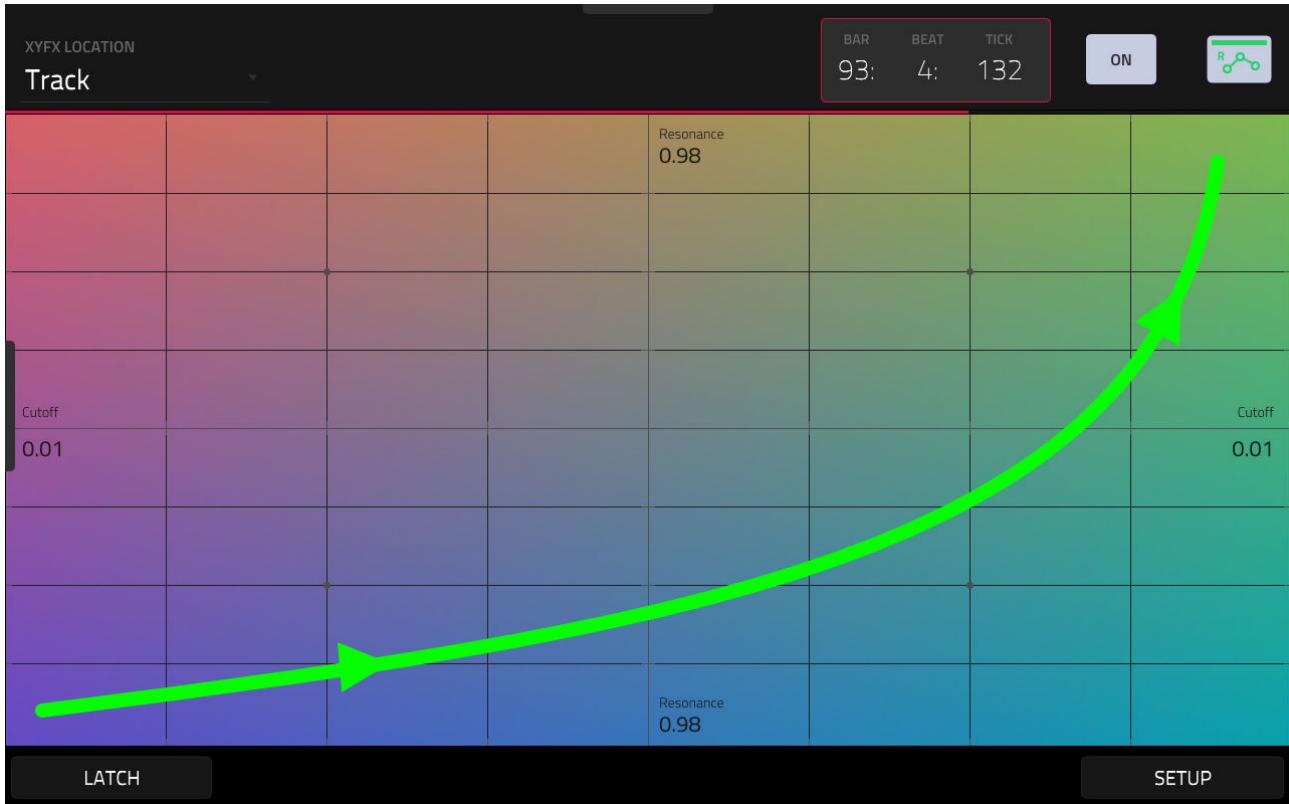


XYFX features a number of pre-configured X-axis and Y-axis Y FX controls. To configure, press the **SETUP** button:

C09 SONG MODE WORKFLOW



Scroll through the **PRESET** field until you reach **HPF Manual**. Press [**PLAY START**] and perform a filter sweep on the word 'live' – I ran my finger from bottom left in a logarithmic line to the top right:



Hit [**UNDO**] if you need to; XYFX automation on an audio track cannot be edited in LIST EDIT, but as is the case with all automation, can be adjusted 'visually' with the pencil tool in '**GRID VIEW**':



Load up **C09 Linear Arrangement.xpj** for my version.

At this point, carry out the same workflow as the linear arrangement in Section B, overdubbing, applying additional mixing tweaks, automations as well as looking at the song as a whole and deciding whether it needs further tracks adding (e.g. a melodic 'solo', a different vocal etc).

EXPLDING TRACKS

In **Section B** we created a '**separated tracks**' mix down which created a unique WAV file for every individual track within our song. This is usually done to facilitate further mixing and editing in a different environment,

typically in a computer DAW or via a third party (e.g. a mixing or mastering engineer).

There is however a distinction to be made between an MPC 'sequencer' track and the separated audio tracks that you might export to a DAW. This is because, by certain definitions, a single MPC sequencer track often contains multiple 'instruments'.

For example, consider the **1977 Drum Kit** track. This actually consists of four unique 'drum' instruments; a kick, a snare, a ride and a crash, and hence our 'separated' track combines all these instruments together into a single stereo WAV file. Once imported into a DAW, how would be, for example, change the volume of just the kick, or add a reverb specifically to the snare alone? Barring some AI trickery, we can't – the drums in the exported track are assumed to have their inherent 'pad mix' completely finalised.

We can still mix the *entire* track as a whole within a DAW project track (e.g. apply FX to the whole track, adjust volume and EQ of the entire kit), but we would have to accept that anything beyond that is not practical.

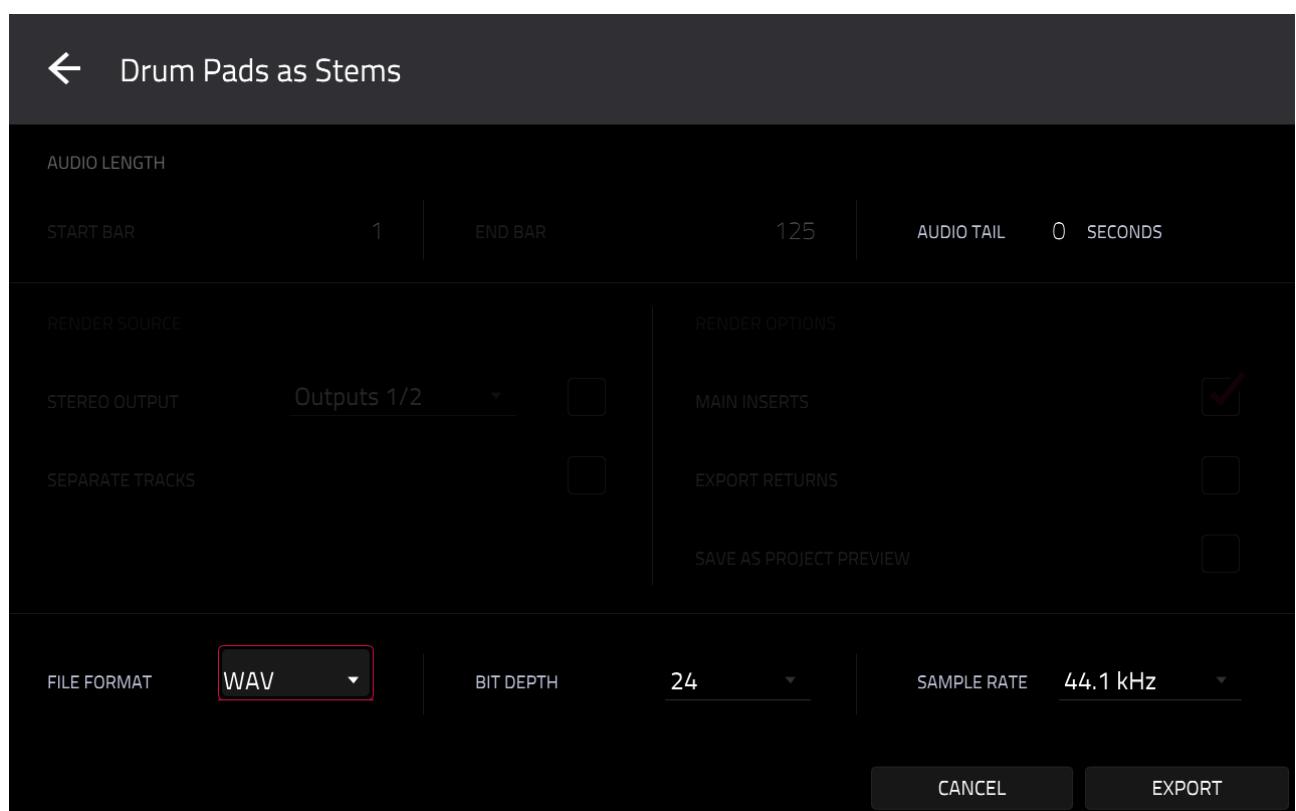
This is fine if you prefer to draw a definite line under certain creative decisions – in fact it can be quite debilitating leaving too many creative choices undecided, so declaring that drum kit mix as a 'done deal' before you export your separated tracks is definitely has its appeal.

But if you are not ready to make that commitment at this stage you'll need to look at creating an export that separates each of the elements of that one track.

SEPARATING TRACKS WITH 'DRUM PADS AS STEMS'

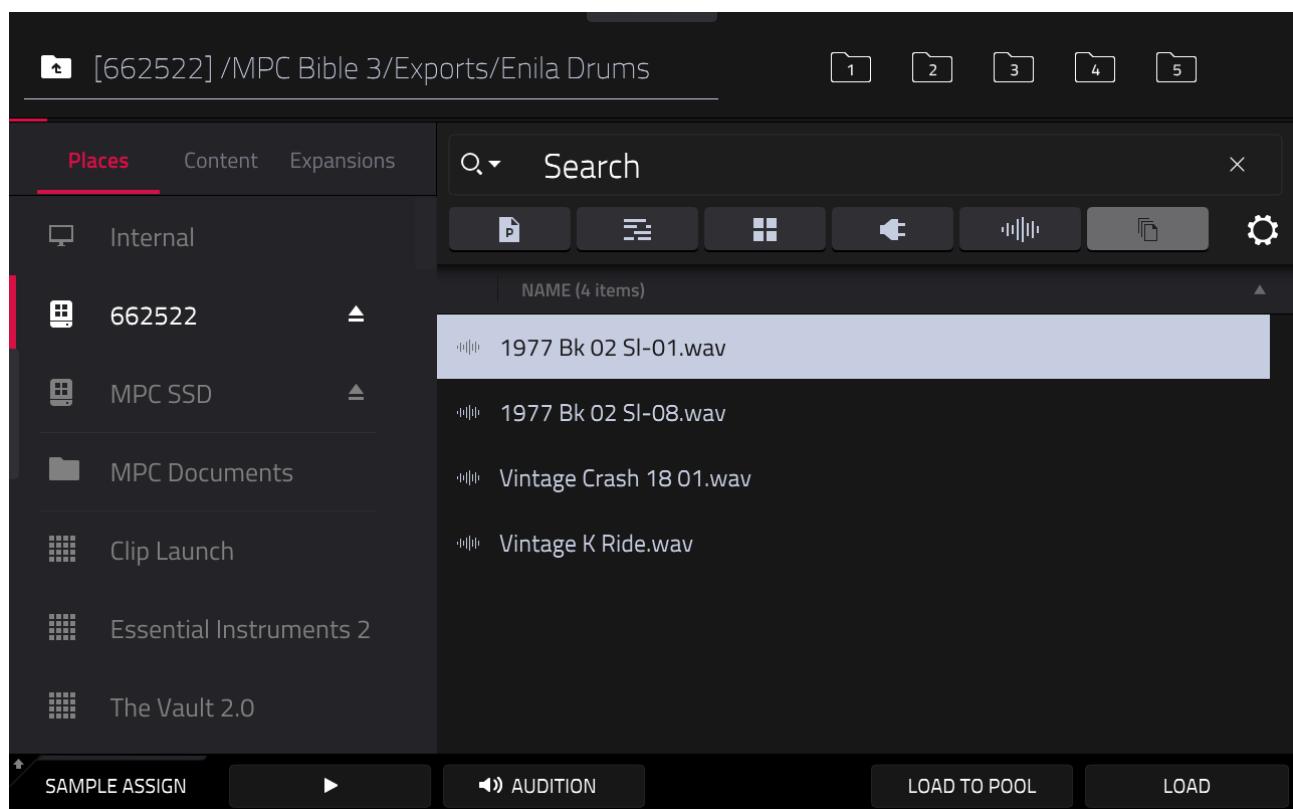
Let's look at how we can create separate WAV exports of the kick, snare, ride and crash elements of the 1977 Drum Kit track.

Select the **1977 Drum Kit** track in your 'converted' song and go to [**SAVE**] > **Drum Pads As Stems**:



Here you see a fairly familiar export screen although this time there's limited exporting options. Upon hitting **EXPORT** you'll be asked to choose an export name, this will actually be the name of the folder created to store your new exports.

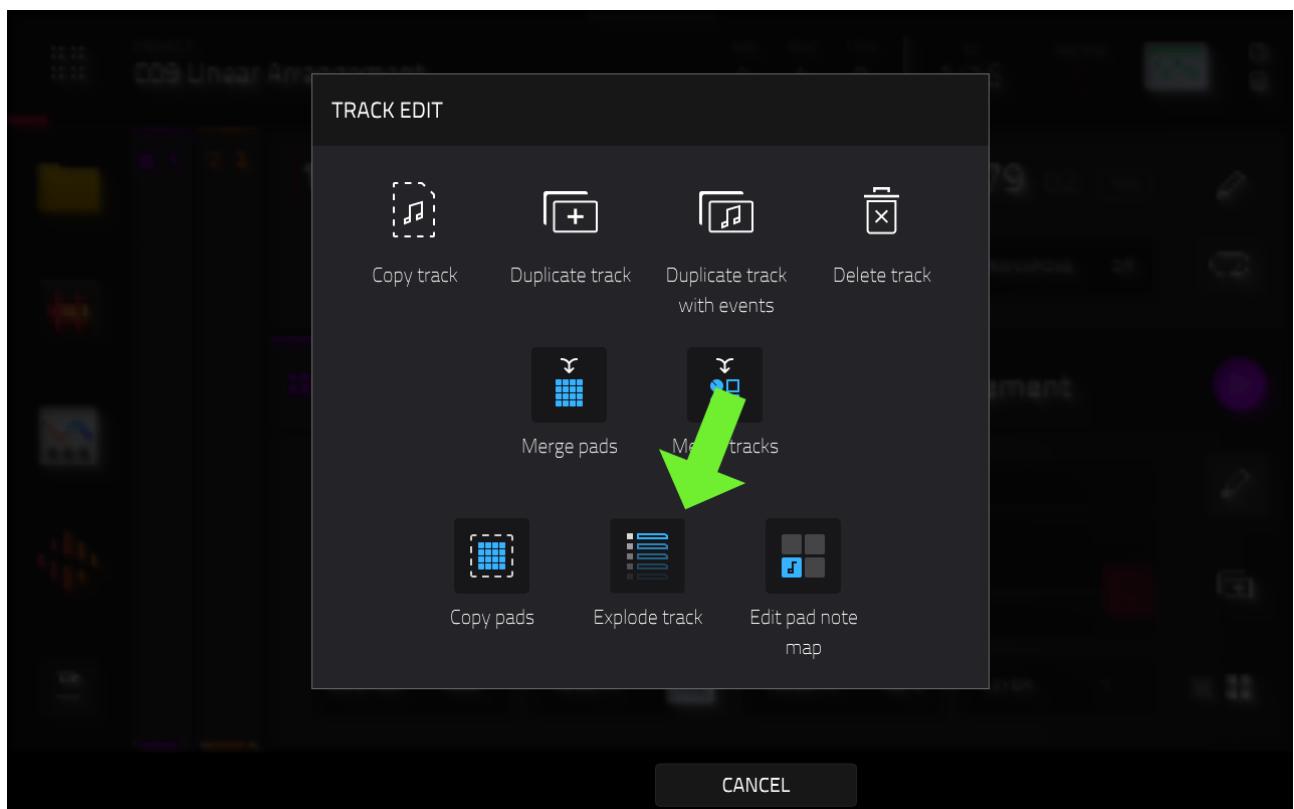
Hit **SAVE** and wait for the export to complete (it will take some time). Now go to [**BROWSER**] > **Places** and head to the folder you just exported to. You should see four bounced audio files, one for each sample used in your drum track (and named after each sample):



Now you can carry out a standard mix down via **SAVE > Audio Mixdown > Separated Tracks** to create all the other individual WAV exports for the remaining tracks in your song (this will also create the 'mixed' drum track as well, but you can just ignore this or keep it as a reference).

EXPLODING TRACKS IN YOUR SEQUENCE

Another solution is to go back to our sequence literally 'separate' the 1977 Drum Kit track into four unique tracks, one for each drum articulation. This process is called 'exploding tracks'. With the **1977 Drum Kit** track selected, tap on the **pencil icon** in the **Track tab** and select **Explode Track**:



After a few seconds the MPC has finished exploding. Head over to the **ARRANGER** for a visual overview:

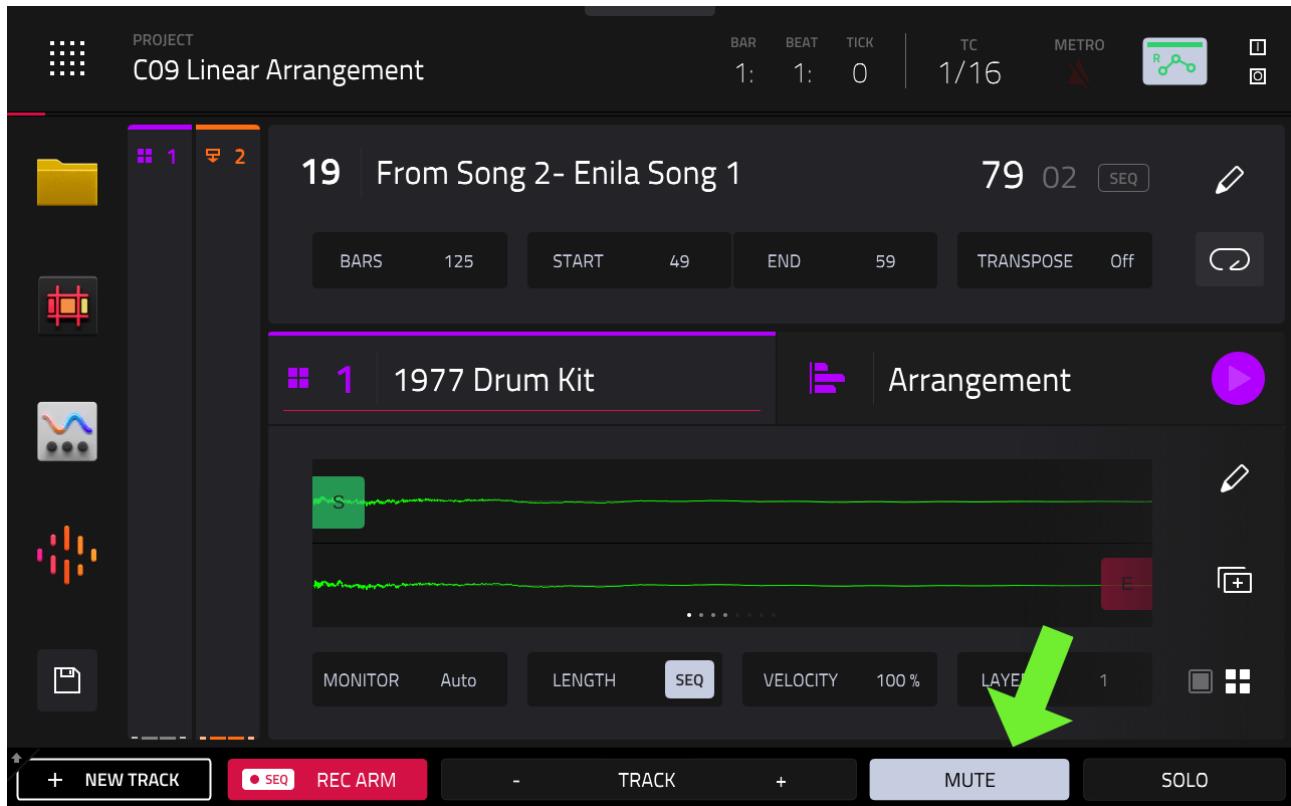
C09 SONG MODE WORKFLOW



You can see the 1977 Drum Kit track is still there, but the MPC has created four additional tracks as well, all with the same colour as the original unexploded track, each with the events from just one pad remaining.

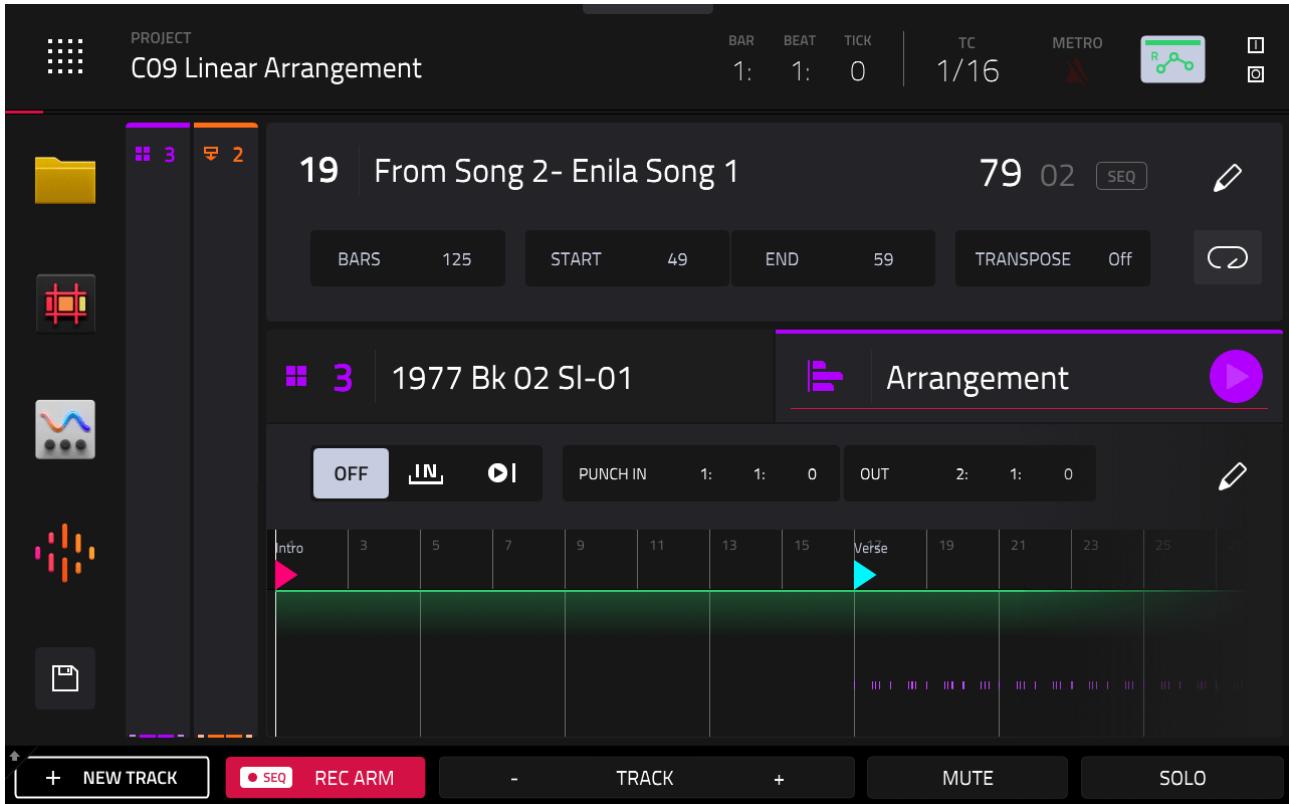
To examine what's happened, go to [**MAIN**], select the original 'un-exploded' track (**1977 Drum Kit**, track 1) – you'll see it's still there, but it's muted:

C09 SONG MODE WORKFLOW



Now select the track 3 and hit the **ARRANGEMENT tab**:

C09 SONG MODE WORKFLOW



As you can see this track is called **1977 Bk 02 SI-01** and is named after the pad it was created from (using the name of the kick sample slice assigned to layer 1). Hit **SOLO** and listen to this track in isolation – this track only contains the kick events. Look at the pads in **[BANK A]** (and play them) and you'll see only pad **[A05]** is populated in this new track, all other pads are now empty.

Now hold down **[MAIN]** and begin selecting each of the new exploded tracks to hear each one in isolation. As you can see, each exploded track contains only one pad, and it only contains the MIDI events associated with that pad. So now our original drum track has become four independent drum tracks.

And when it comes to mix down, the standard 'separated tracks' option will simply create a separate WAV file for each of those exploded tracks (a kick track, snare track etc).



If a track contains any pads configured in the same 'MUTE GROUP', such as the closed and open hats, then these will be automatically combined into single track, rather than having separate closed hat and open hat tracks. This is a definite benefit of using mute groups over mute targets!

PROS & CONS OF EACH METHOD

Which method you go for is mostly down to personal preference. The '**Drum Pads as Stems**' option means your drums always remain on one track only which you may prefer as it's easier to manage. Just remember that a track like this will need mixing in two environments; a '**pad mix**' and a '**track mix**', although the **XL CHANNEL STRIPS** can arguably provide both these options in a single screen.

The **explode** option means all mixing can now carried out in the 'channel mixer', plus you are now able to 'mute' individual components of your drum kit using nothing but track mutes (no pad mutes required). The mix down options for individual tracks are also more flexible, with the ability to export separate returns (which is not a feature of the 'Drum Pads As Stems' option).

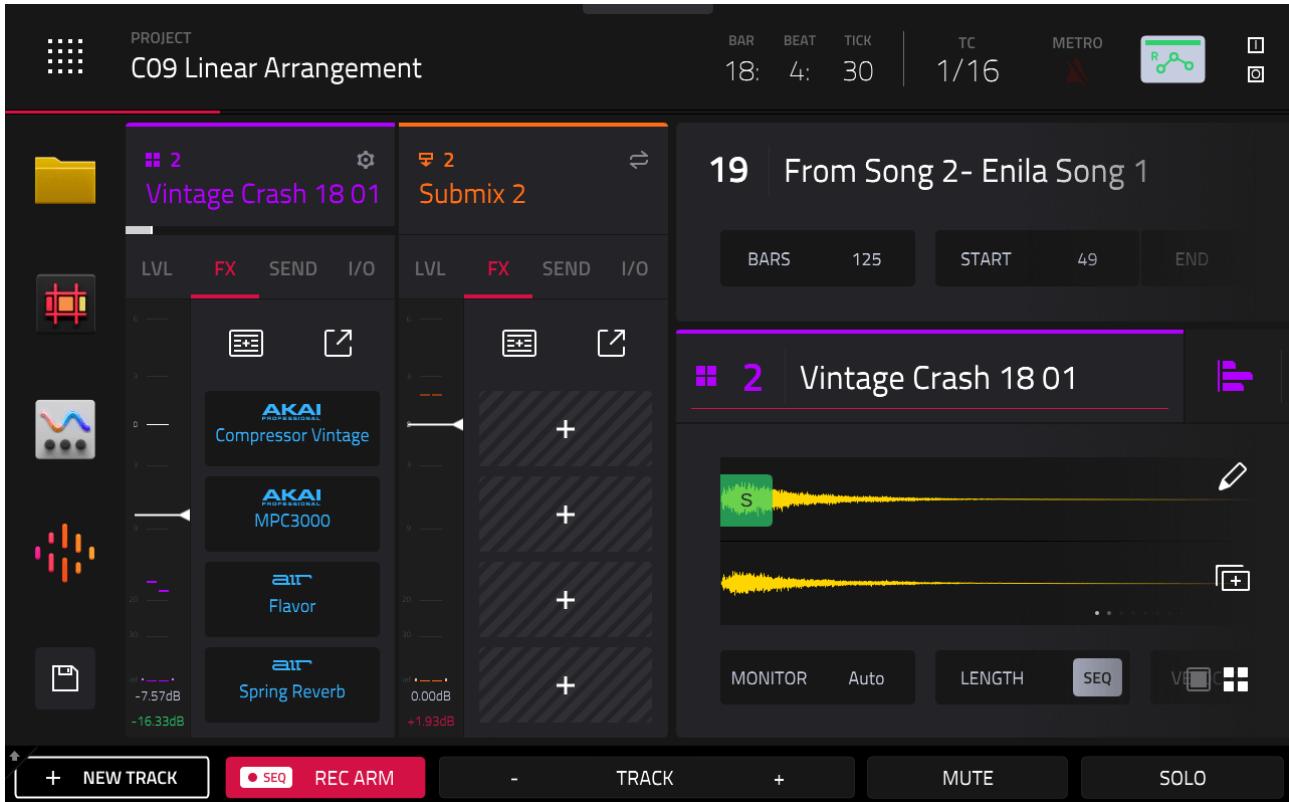
Of course, you probably laid down your drums to a single track for good reasons; maybe you prefer to finger drum your performances in one go,

and/or prefer to edit and manage all your drum events together in GRID VIEW. But generally speaking performing an 'explode tracks' procedure is normally something you could do once your drums are already laid down and the performance pretty much 'nailed', so it's probably not an issue to then explode them purely for the purposes of simplifying the audio mix down procedure.

USING SUBMIXES TO SAVE RESOURCES

The biggest issue when exploding tracks is that of **resources**. While each track only contains the drum pad used for that particular set of events (e.g. the kick track only contains pad [A05]), when you explode a track the MPC duplicates any insert FX used on the original unexploded track.

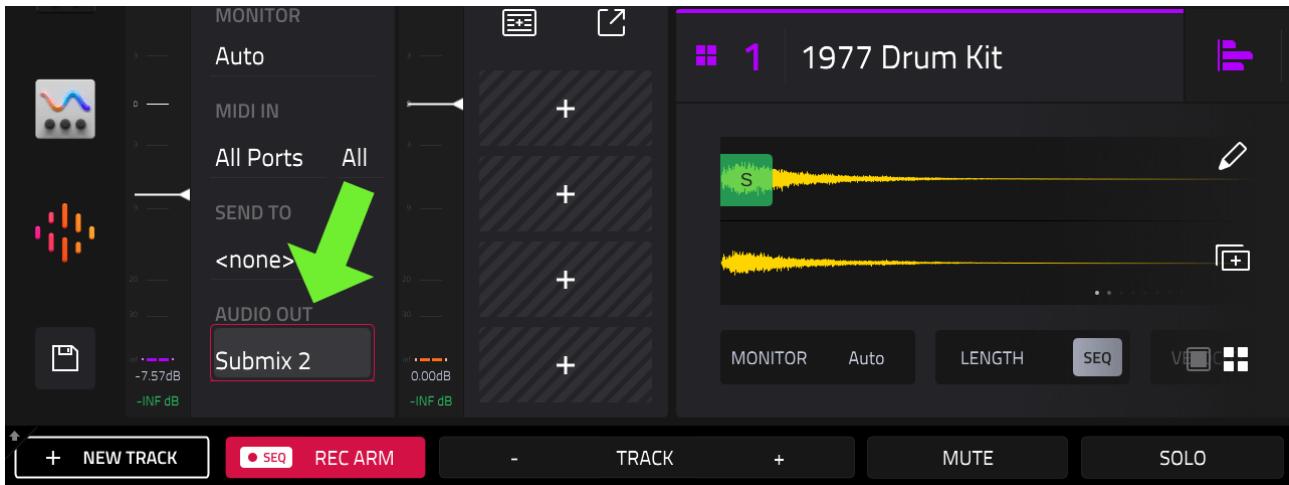
In this case we have four insert FX on the 1977 Drum Kit track, so each of the explode tracks *also* have these four plugins inserted. This makes 20 instances of these plugins (including the original track which is currently muted).



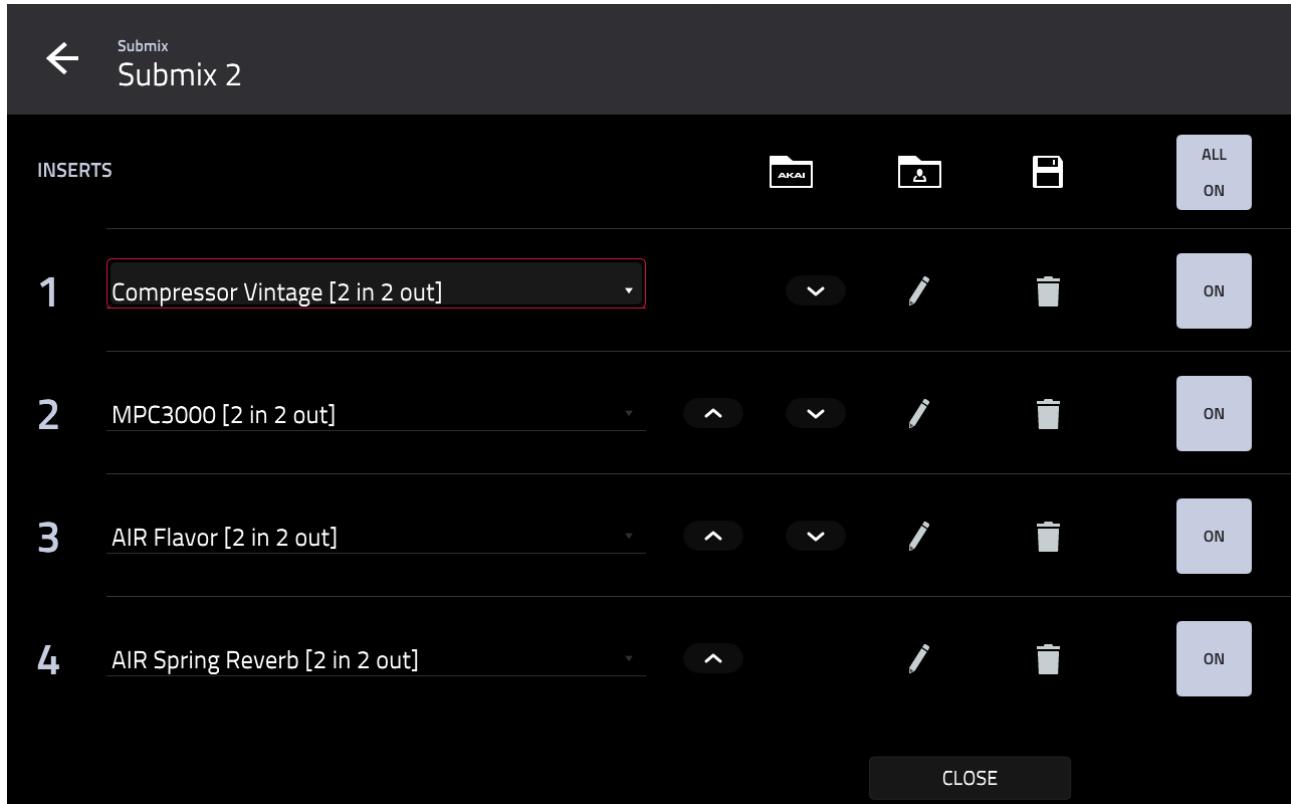
Not only is this a huge waste of resources, you'll find that some FX plugins no longer function as expected. Applying a compressor across an entire kit, where each sound is impacting the way the compressor acts on all other sounds, is not going to give you the same results as applying four compressors over each individual drum pad.

To solve both problems, hit **[UNDO]** until the MPC returns the sequence to its unexploded state. Now open the **FX INSERTS** screen and hit the **SAVE** icon – save the FX as an FX rack (call it something like '**1977 Drum FX**').

Now hit the trash can on all four FX inserts. Head back to **MAIN > XL CHANNEL STRIPS** and select the **I/O** tab for the **1977 Drum Kit** track. Set the **AUDIO OUTPUT** to **Submix 2**:

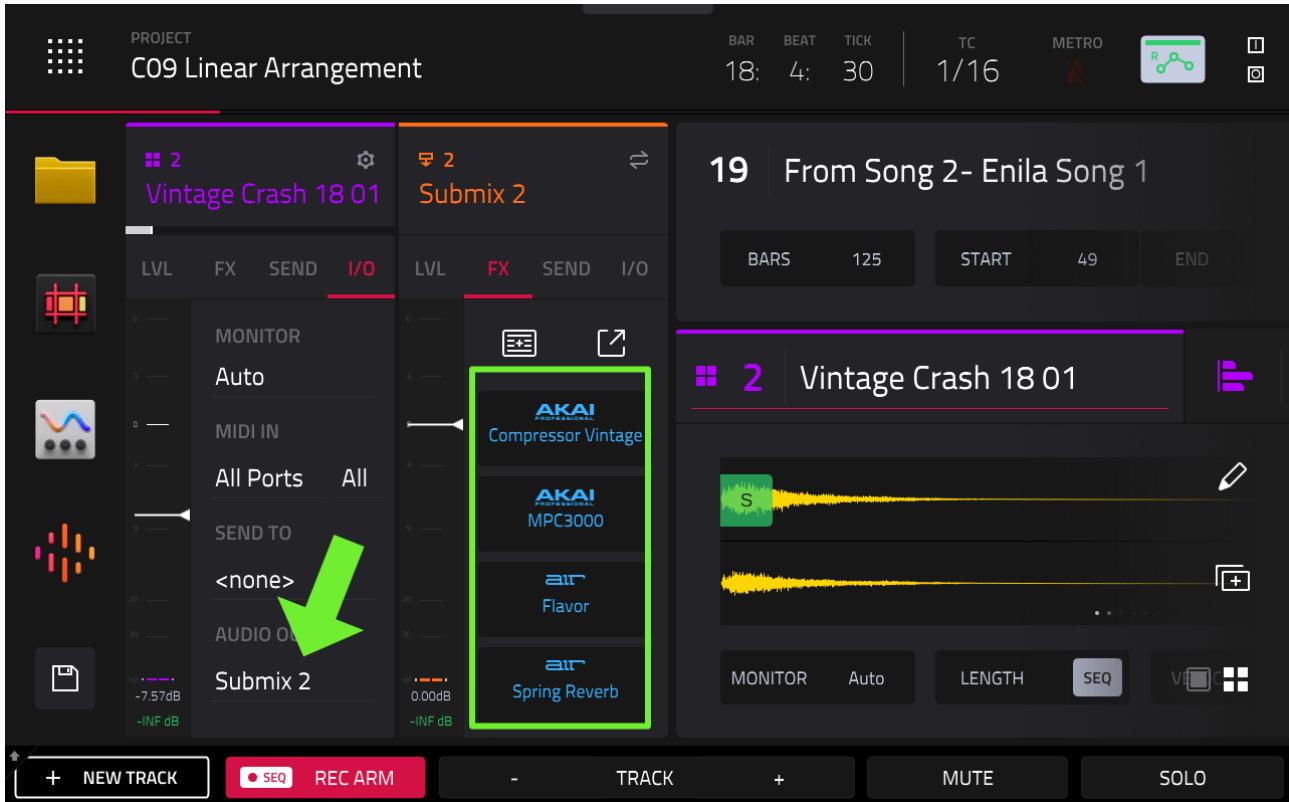


(Remember we used Submix 1 for our additional Sliced Vocal FX). The Submix 2 channel strip should appear in the right hand XL channel strip – select the **FX tab** and open the **INSERT** screen for Submix 2. Load your '**1977 Drum FX**' rack to **Submix 2**:



Now the 1977 Drum Kit track contains no track insert FX, with submix 2 handling all FX duties. You can now go ahead and explode the 1977 Drum Kit track – all the exploded tracks are now automatically routed to Submix 2:

C09 SONG MODE WORKFLOW



This way we don't duplicate the FX plugins and all the plugins get to be applied across the entire kit, ensuring they function as intended.



Once exploded, you can in theory delete the original 1977 Drum Kit track although you might want to keep it as a backup.

SECTION D

TROUBLESHOOTING Q & A

This section contains answers to many common issues and workflows, including new workflow tips for users of previous MPC firmware versions looking to adapt their workflows to the new MPC3 features.

Please note that this section is a 'work in progress' and I'll be adding more content to this over time.

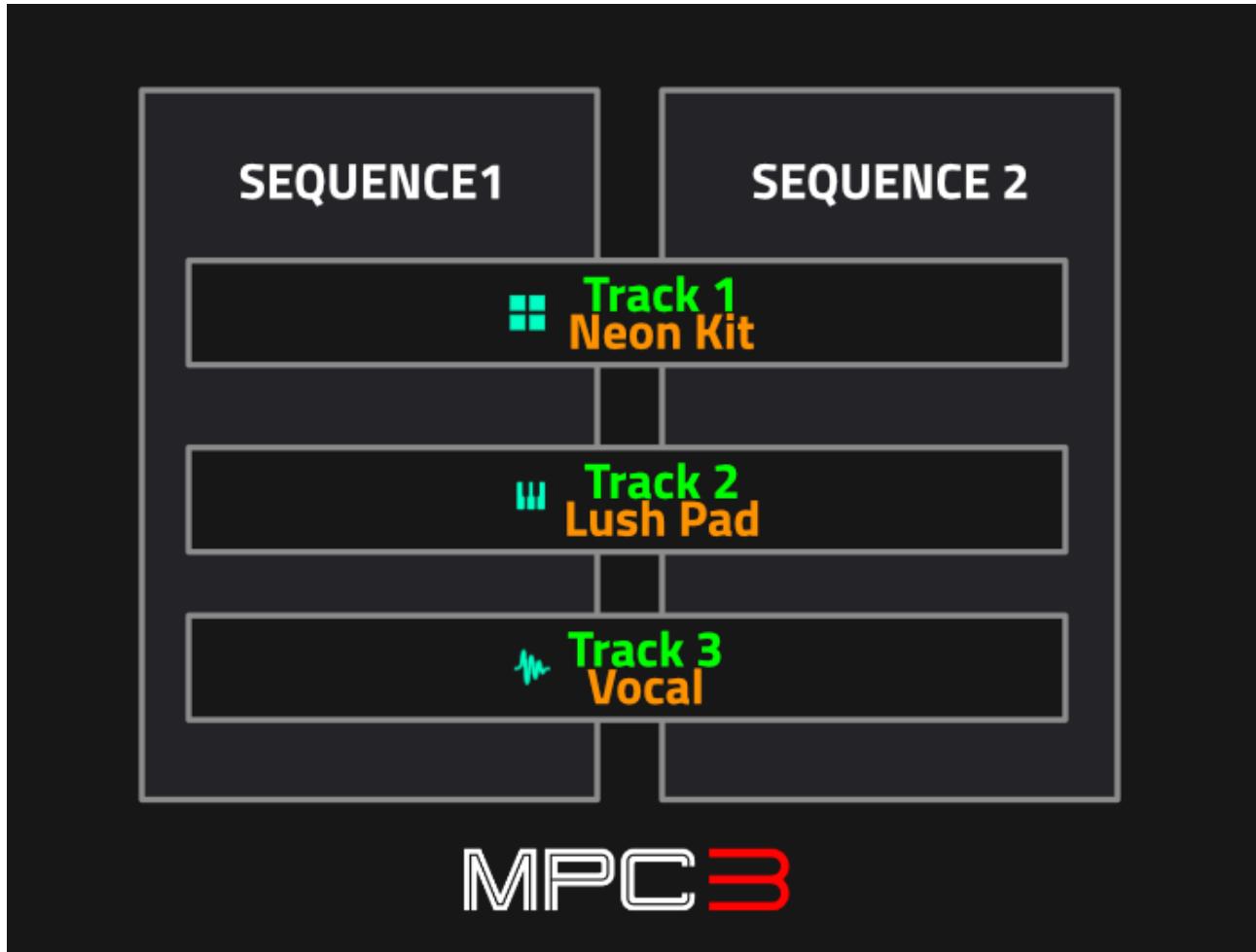
D01 MPC2 PROJECT MIGRATION GUIDE

If you've previously created projects in the MPC2 firmware you'll need to convert your MPC2 projects into the new MPC3 project structure before using them in MPC3. In this troubleshooting tutorial I'll look at some of the issues you'll need to be aware of.

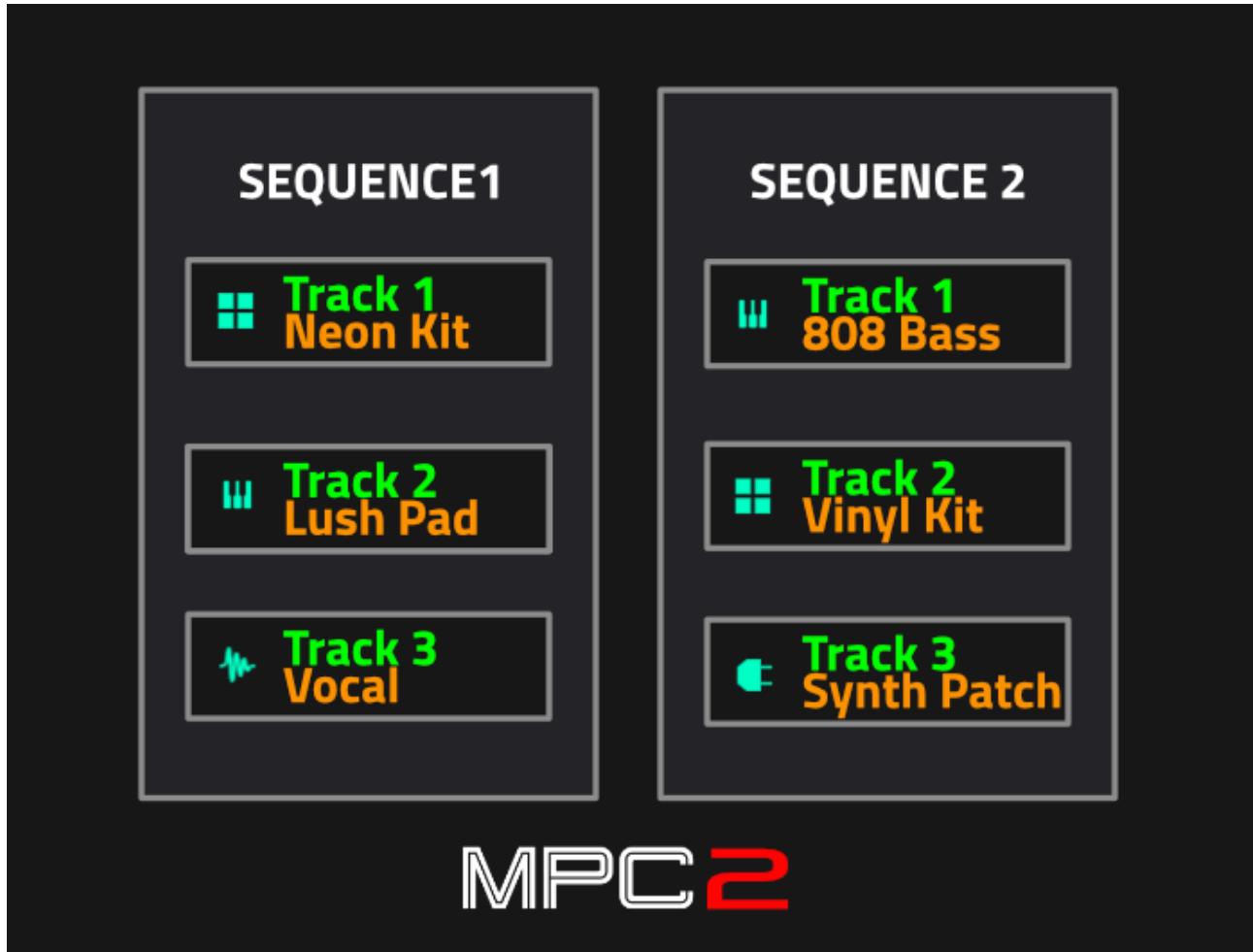
UNDERSTANDING UNIFIED TRACKS

Users of MPC2 will almost certainly be well aware of the changes that came with MPC3 - lots of improvements, lots of new features but also some fundamental changes to the way MPC projects are structured.

MPC3 uses a '**unified track**' structure, which means each track you create runs through all sequences in your project. So if you set up track 1 in sequence 1 as a DRUM track containing a kit called 'Neon Kit', then this track 1 flows through your entire project as track 1; if you then create a sequence 2, then track 1 is already set as the same 'Neon Kit'. Make a change to 'Neon Kit' and it affects all sequences equally



This probably seems fairly logical to anyone coming directly from a DAW background, but for many legacy MPC users this is a seismic change in the MPC workflow. That's because in MPC2 (and all MPC operating systems before this), each sequence in a project was effectively 'self contained' with its own *independent track structure*. For example while track 1 in sequence 1 was 'Neon Kit', track 1 in sequence 2 could be a completely different kit, or even a different track type (plugin, keygroup etc).



In many cases having inconsistent track structures across sequences would lead to issues, especially when converting to a single sequence from song mode. However, many producers took advantage of this feature to allow them to work on multiple compositions within the same project, while live performers often used it as a way to create a complete live set within a single project.

CHANGES TO 'PROGRAMS'

The other key change that heavily impacts many MPC2 users is the way MPC3 now handles '**programs**'. In MPC2, you could load a drum kit or keygroup instrument program into memory and have it sit there in the 'project pool', there was no requirement to assign it to a specific track. You could have 100 kits just sitting there in your project and could freely assign and un-assign them from any track at will – each track had a select box which allowed you to dynamically change the program assigned to it.

You could also easily assign the same kit to *multiple tracks*; so you could for example assign a 'construction kit' style program to tracks 1, 2 and 3, with track 1 handling drums on pads [A01] to [A04], track 2 handling the bass tone on pad [A13] and track 3 handling a vocal sample on pad [A16]. All three tracks use the same program and hence any changes you make to the program itself (e.g. insert a compression plugin across it) would affect all three tracks as they are all referencing the same kit.

Now when you load a program in MPC3 it cannot just hang around in memory, it must be loaded directly to a specific track. At this point the settings and samples of the program are 'absorbed' by the track and the program itself ceases to exist within your project. There is no 'program pool' and no option to assign a single instance of a program to multiple tracks.

As you can imagine, this presents a challenge when dealing with MPC2 projects:

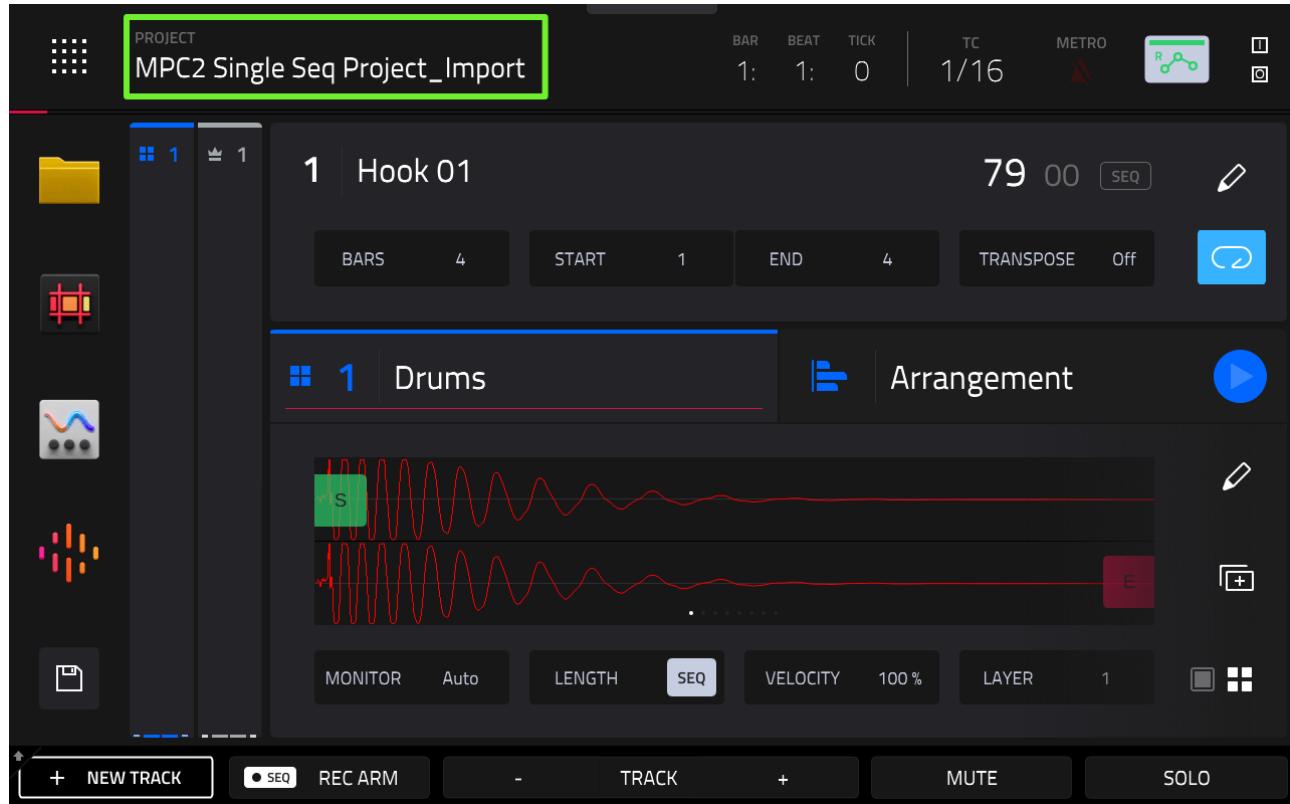
- 1) how do we load a project in MPC3 that contains multiple sequences each with differing, inconsistent track structures?
- 2) how do we handle sequences that contain the same kit assigned to multiple tracks within that sequence?

SIMPLE MPC2 PROJECT MIGRATION EXAMPLE

Go to the **D01** folder and load the project file **MPC2 Single Seq Project.xpj**. This is the simplest of MPC2 projects – nothing but a single sequence with three tracks:

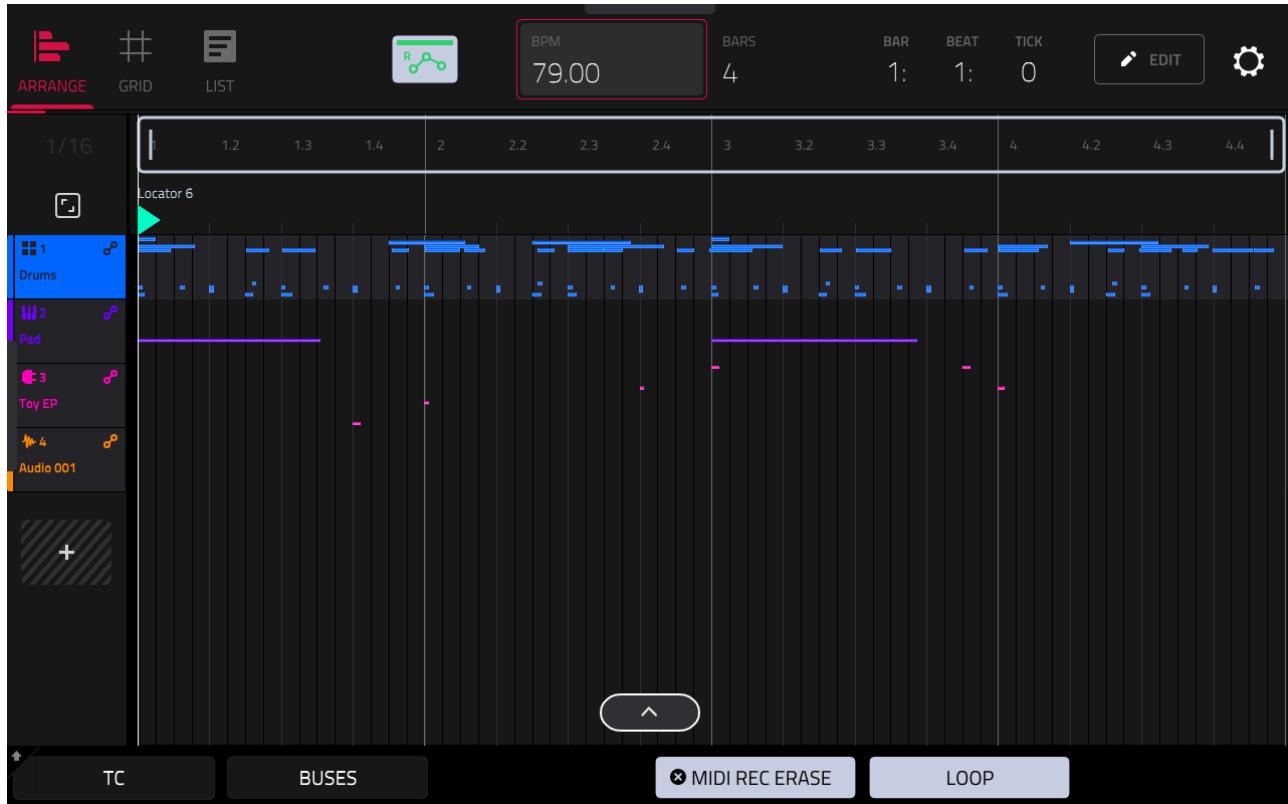
- Track 1 features a mixture of drums, bass and melodic shots made using a single 'construction' style drum kit (**UC Kit 01**)
- Track 2 is features a simple pad sound from a keygroup instrument (**TS Lush Pad**)
- Track 3 features a percussive synth line, made using a patch from the **Electric plugin**.

Go to [**MAIN**]:



Notice that the imported project has been renamed with '**_import**' appended to the end. This way, even if you were to save a corrupted import it will not accidentally wipe over your original project.

Go to **ARRANGE** to view all three tracks:



Notice there is an audio track in this project simply because by default all MPC2 projects contain a single, empty audio track (there's no way to delete it).

Hit [PLAY START] and you should hear the sequence play fine, a simple project like this should import without a hitch.

When importing your own projects, check through and if all seems fine, save it to disk; either use the new '**_import**' name or use a prefix like '**MPC3-**' or similar.

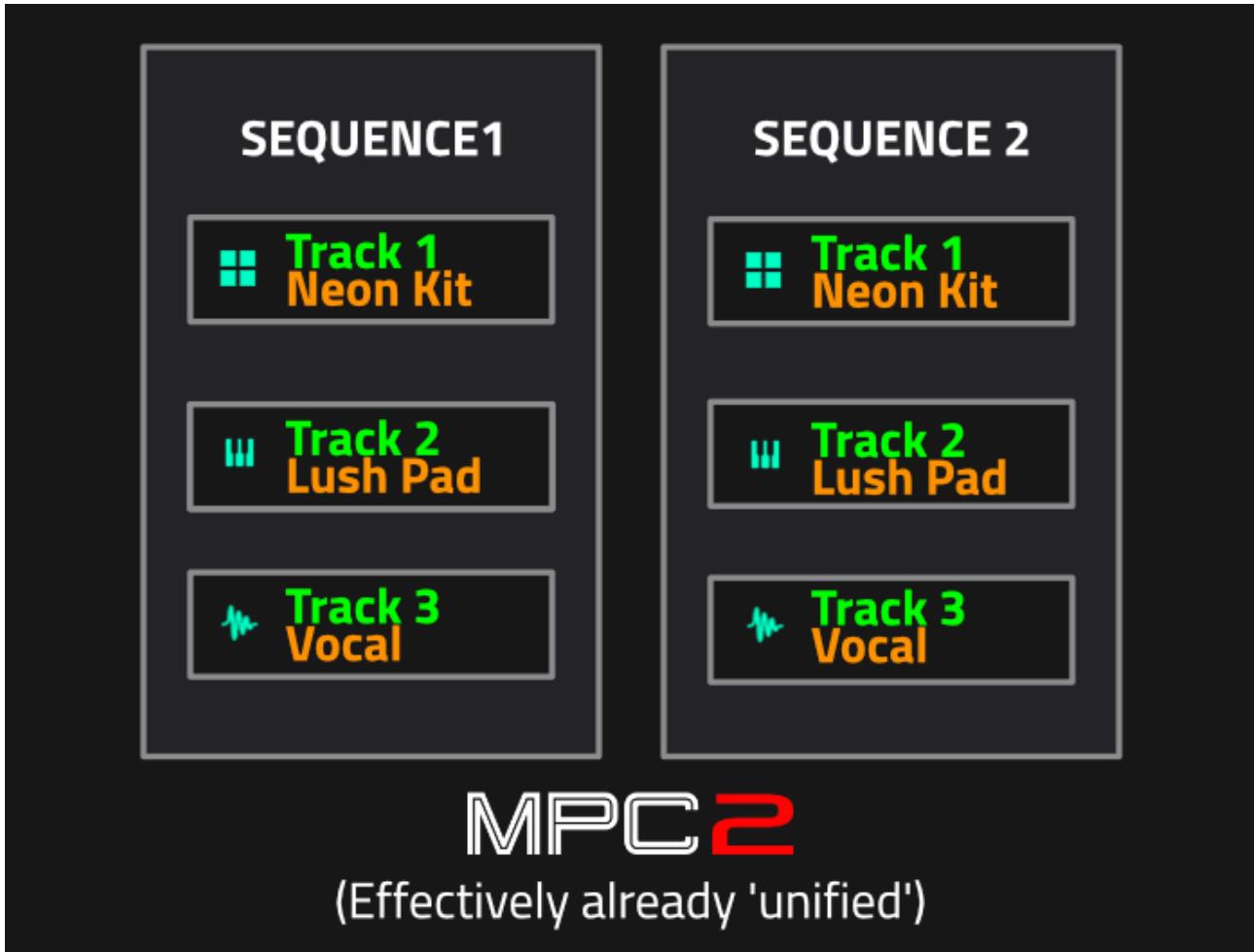
Once you've saved the migrated project you can continue editing and working on it within MPC3 (the first task I would probably do here is delete the empty audio track that was imported over).



*Remember, **MPC3 projects are NOT backwards compatible with MPC2** - once you begin working on a project in MPC3 it permanently becomes an 'MPC3' Project. Make sure you always keep a backup copy of your MPC2 project... just in case!*

PROJECTS WITH MULTIPLE SEQUENCES

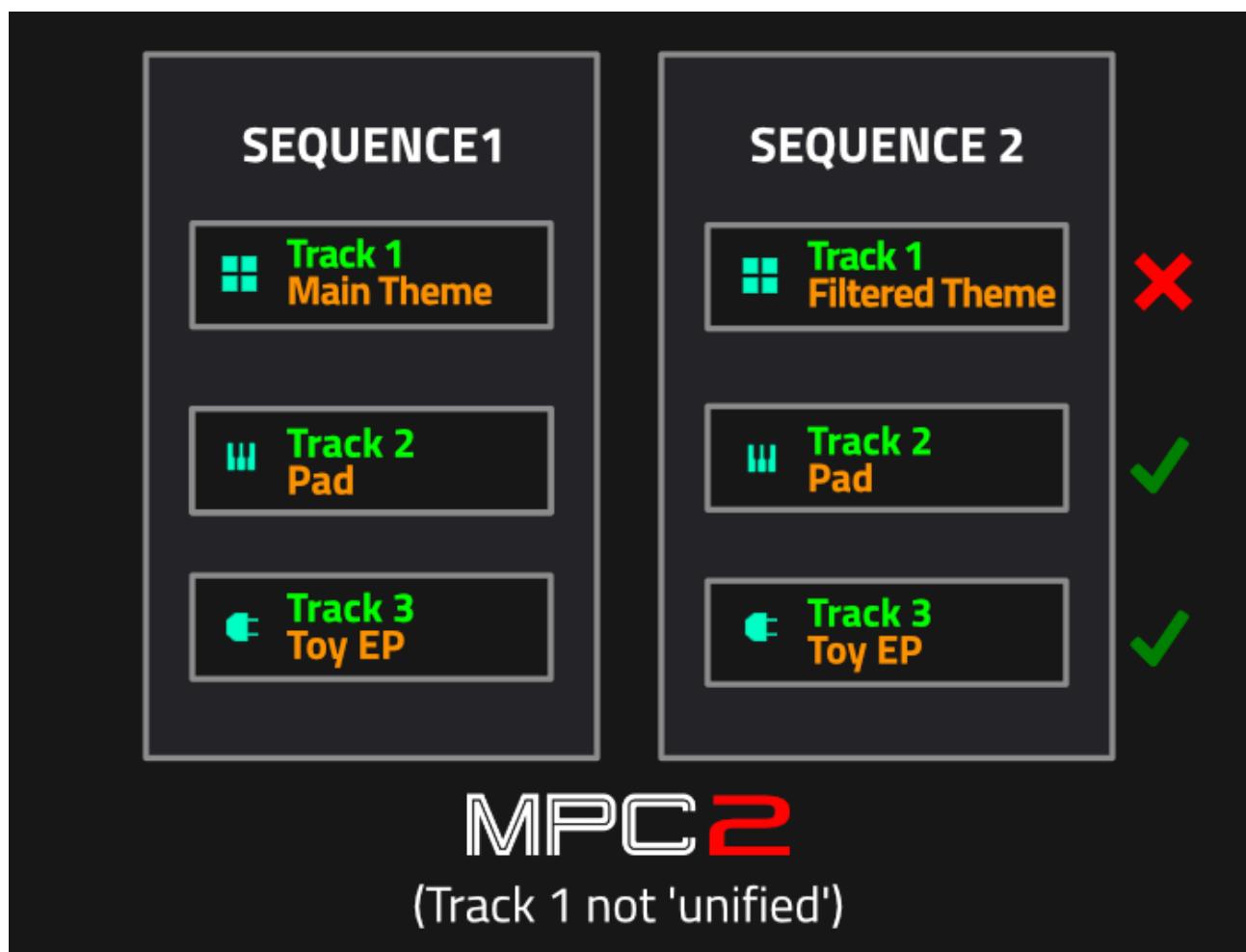
The next step is to look at how MPC3 imports projects which contain *multiple* sequences. If all sequences in the project already obey the 'unified track' ideology, that is, each sequence has identical track structure and each track uses the same program throughout each sequence, then the project will import without any core changes.



If you previously followed my MPC Bible 2 course, the example project you built towards the end of the course is actually a prime example of a 'unified track' project, so was already 'MPC3-friendly'!

But what happens when a multi-sequence project doesn't contain 'unified tracks'? From the **D01** folder, load the project file **MPC2 Multi Seq Project.xpj**. This project builds on the previous example, but this time

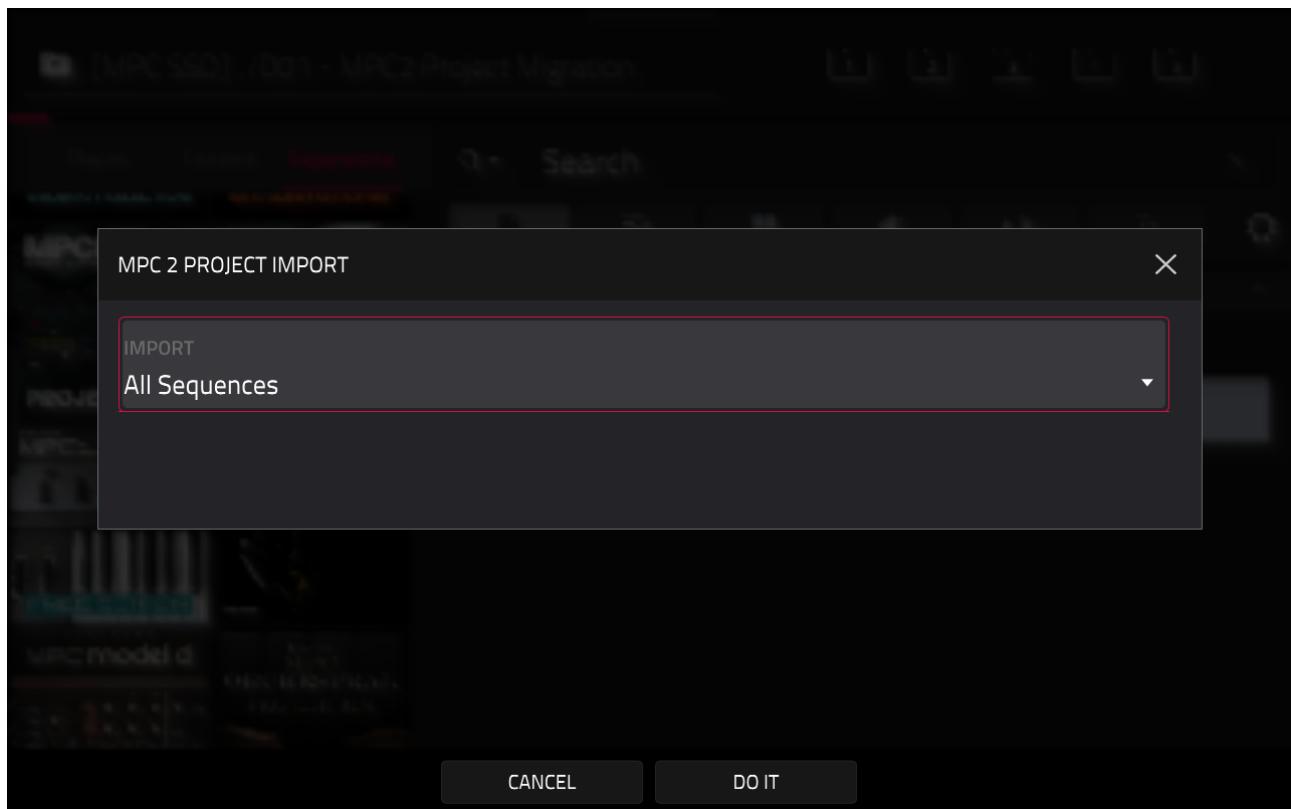
contains a second sequence which is fundamentally the same as sequence 1 but uses a different program assigned to track 1. This is actually a copy of the original kit but with an additional FX plugin added (the 'radio' vocal preset in Air Flavor), so it just gives a completely different vibe to the main theme.



This is a common example of how an MPC2 project can inadvertently contain mixed track structures. The producer wanted to temporarily change up the sound of the kit, so in the second sequence just swaps out the program used on the existing track 1 with a modified duplicate.

In MPC3, this is a 'no-go' as track 1 is no longer 'unified' across both sequences; the kit used on track 1 in sequence 2 is a different kit to track 1 in sequence 1. So let's see how MPC3 deals with this.

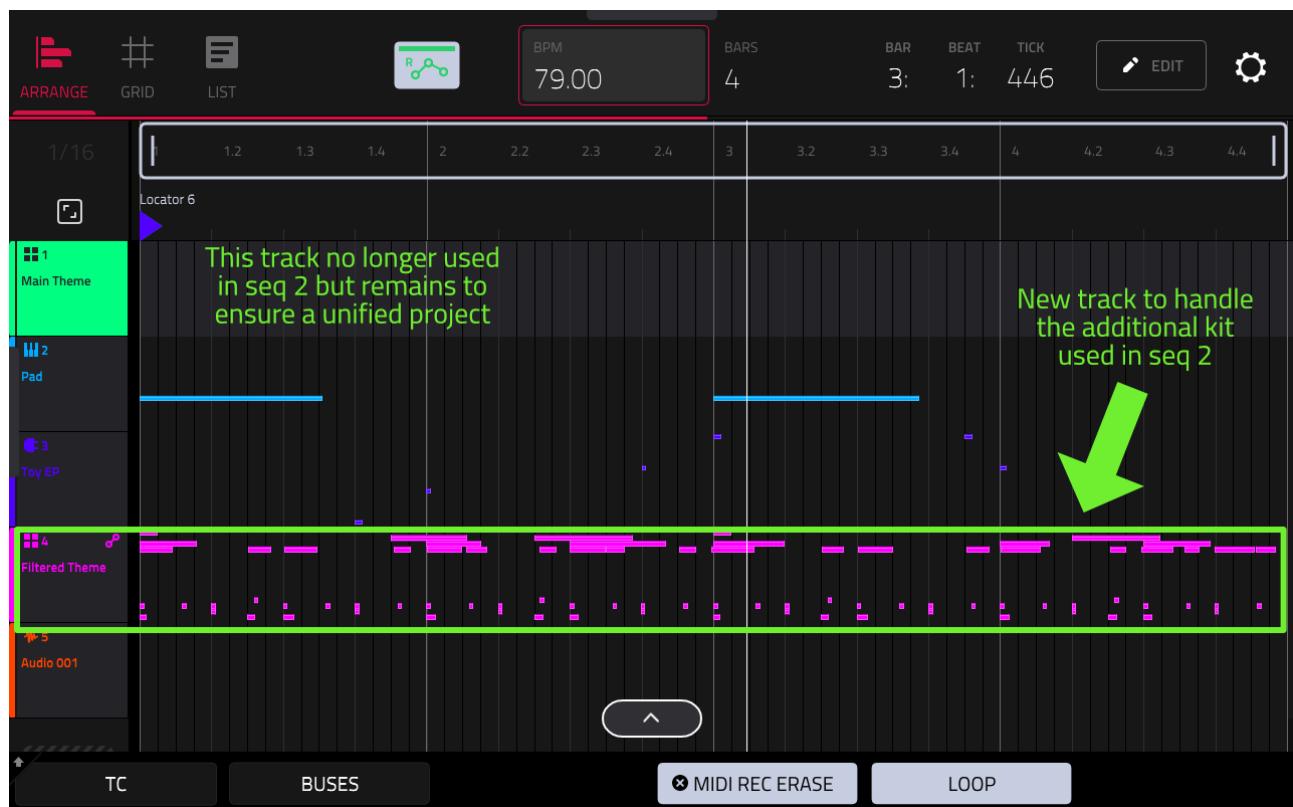
After loading the project from the browser you'll now see the following **MPC 2 PROJECT IMPORT** dialog – this will only appear when a project contains more than one sequence:



To import the entire project including all sequences within it, just select the default '**All Sequences**' option and hit **DO IT**.

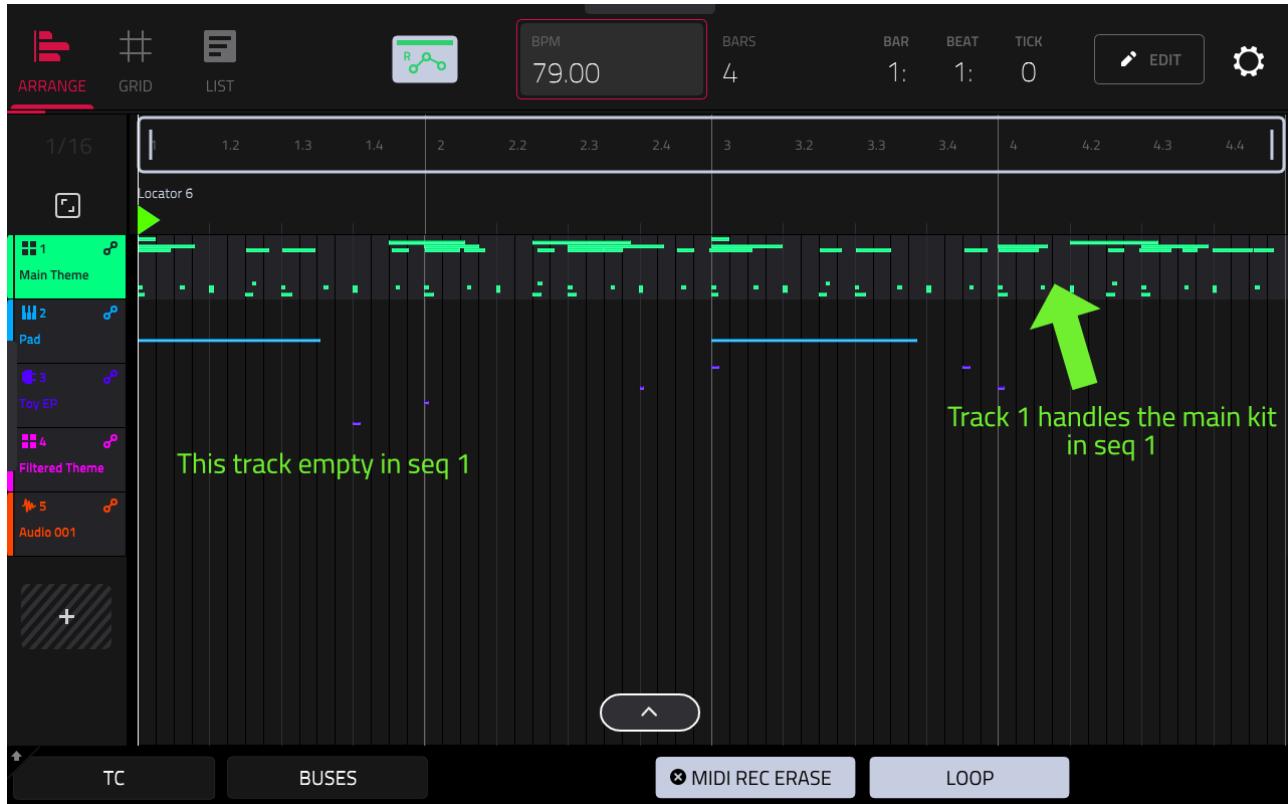
In [**MAIN**], select **sequence 1** and hit [**PLAY START**]. As you can hear, this is the same three track sequence we had in the first example.

Now select **sequence 2** and hit [**PLAY START**]. This clearly uses the same MIDI events but track one has the 'radio effect' applied. Looks see how MPC3 has made this into a unified project – go to **ARRANGE** for **sequence 2**:



In **sequence 2**, the 'main theme' track (1) contains no events at all. Instead, MPC3 has created a fourth track called '**Filtered Theme**' which contains our filtered kit and all the MIDI events for this kit.

Now select the **ARRANGER** for **sequence 1**:



Here, only tracks 1 to 3 are populated with data, the 'new 'Filtered Theme' track is empty. So, MPC3 has created a *combined unified track structure* for the project, creating an additional track 4 to handle the extra drum kit introduced into the project by sequence 2.

Now whenever if you want to create drums with the 'radio' effect, use track 4. If you want the unfiltered drums, use track 1.

The alternative and more flexible approach would be to simply insert the '**Air Flavor**' plugin to **INSERT 4** on track 1 and then use **automation** to temporarily enable the plugin during sequence 2. This way you don't have to introduce an additional track into your project and don't have to maintain two slightly different copies of the same kit (which complicates edits that may need to be applied to both copies).



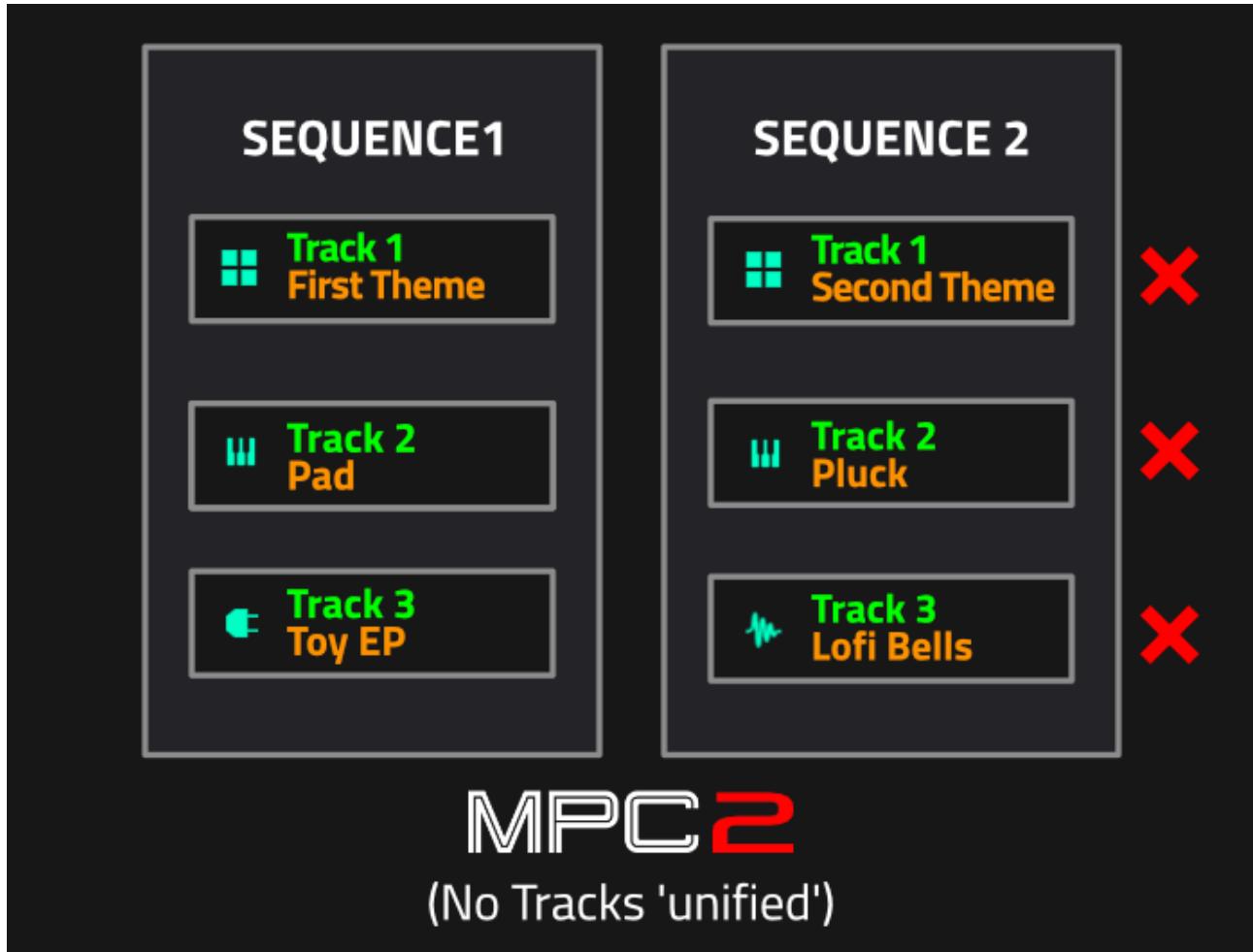
If your MPC2 project uses any 'clip' tracks then MPC3 will convert these to DRUM tracks. You'll lose any clip track specific features that you may have used in a live performance setting (e.g. loop toggle, launch quantisation etc), but if the clip track was used to launch loops from MIDI events, these will all be recreated in the resulting MPC3 project. Check out this MPC3 [Loop Toggle workaround](#).

LIVE SET OR 'MULTI-SONG' PROJECTS

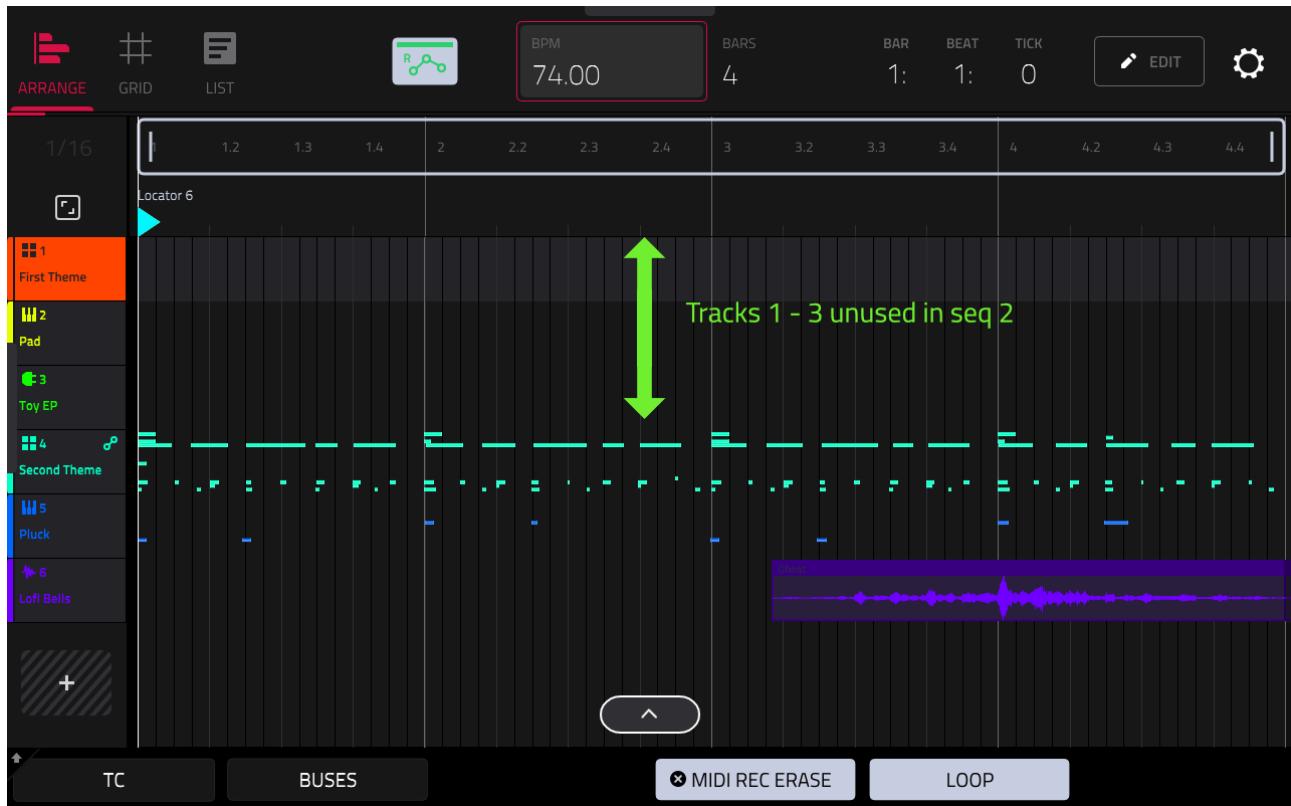
Another type of 'multi-sequence' project is a 'live set' style project, where each sequence is effectively a *completely different composition*. Alternatively this could be a project where you were just trying out different song ideas across multiple sequences (let's call it a '*multi-song*' project).

The key factor here is that these types of projects often have *entirely* different track structures from sequence to sequence, often with no 'unified' tracks whatsoever within the project. From the **D01** folder, load up the project file **MPC2 Live Set Project.xpj**.

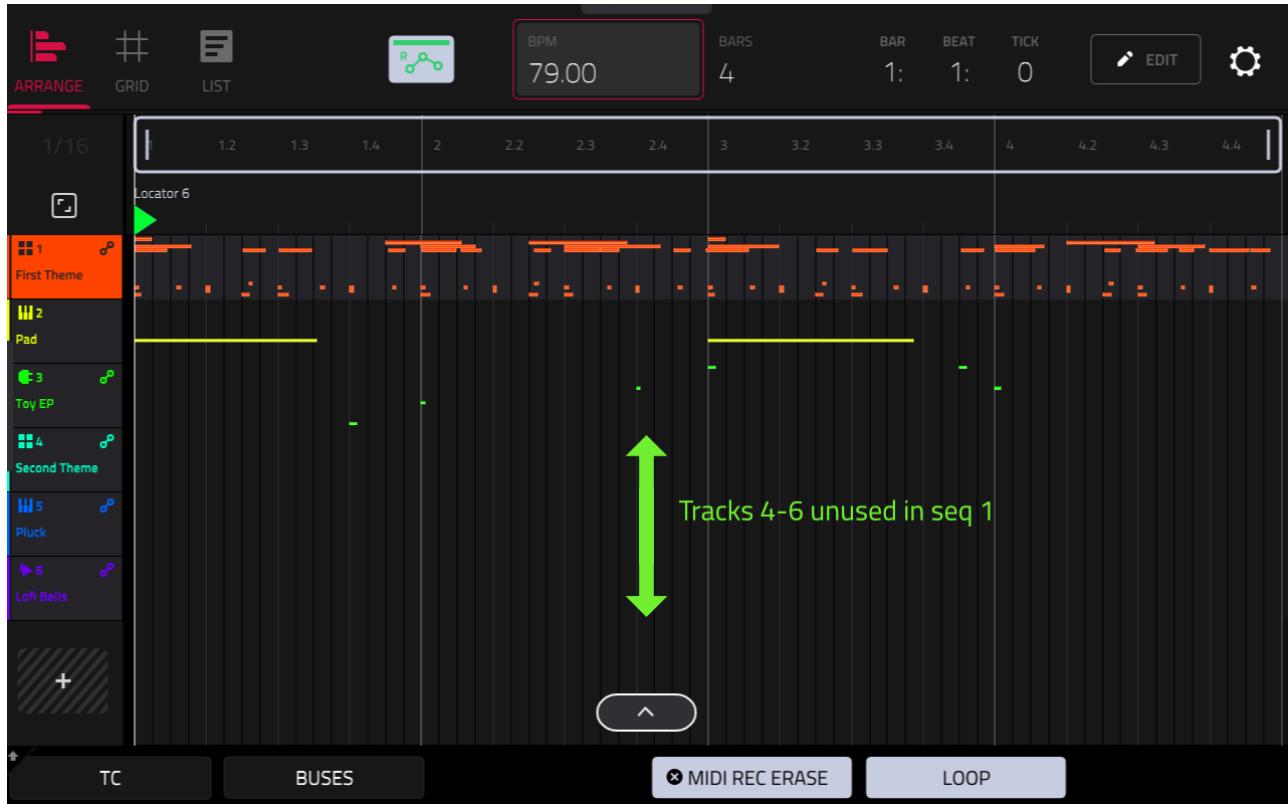
This is another two sequence project, but in the original MPC2 project, sequence 2 bore no particular connection whatsoever to sequence 1:



In the original MPC2 project, each sequence effectively exists in a self contained bubble with its own set of sounds and instruments. In [MAIN] listen to both sequences. Select **sequence 2** and head over to **ARRANGE** to view the track structure:



As you can see, tracks 1 to 3 are empty. Our second sequence's events are all handled by tracks 4 to 6 (including an audio track on track 6). Now view **sequence 1**:



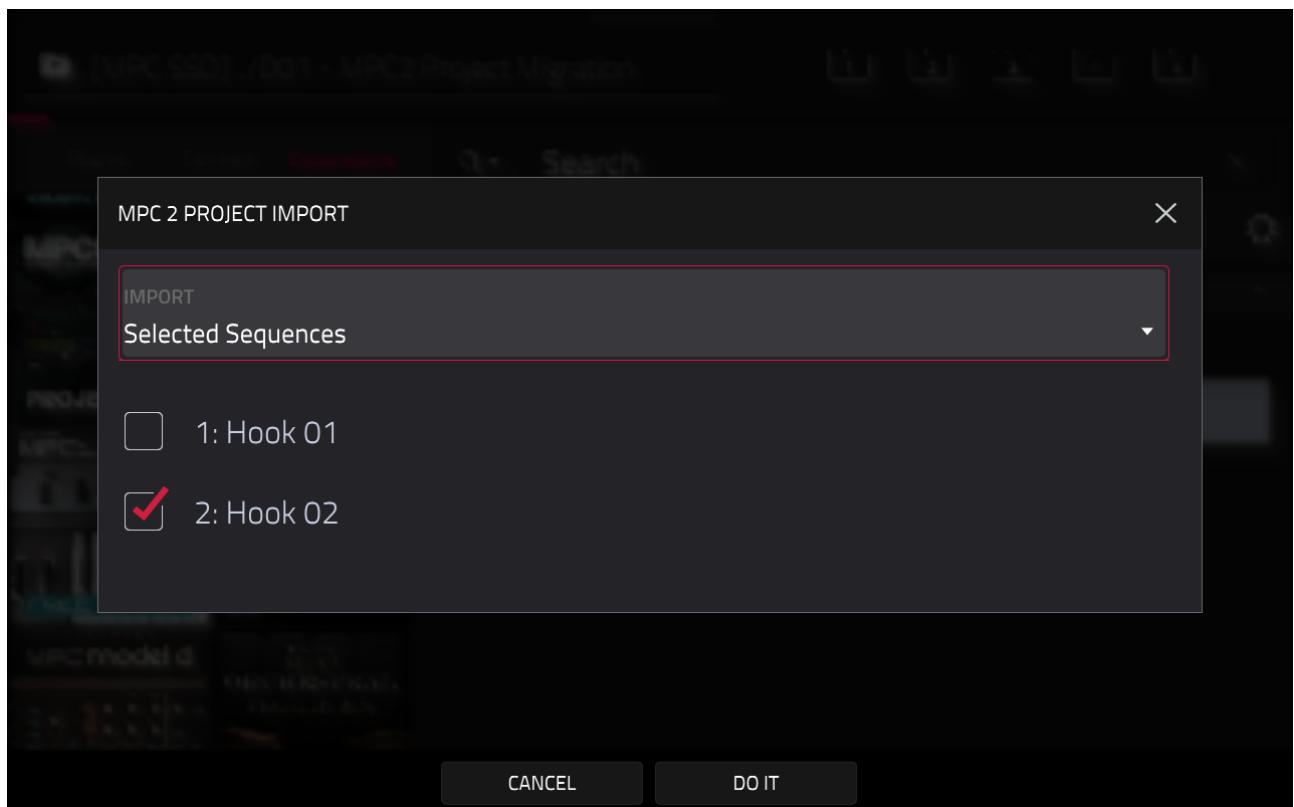
Here tracks 1 to 3 are handling the events for sequence 1, while tracks 4 to 6 are empty. So, as each three track sequence has its own unique three tracks, MPC3 has created a **6 track 'unified' project**.

In a live performance you'll need to remember that 'sequence 1' is on tracks 1 to 3, sequence 2 is on tracks 4 to 6 and so on. I would recommend you consider setting each 'song' to use the same track colours as this can help you quickly identify the most relevant tracks.

This is of course going to quickly get out of hand if you have a big live set, so it might be worth considering splitting up a big 'multi-song' project into several smaller projects.

SPLITTING COMPLEX MPC2 PROJECTS

When importing a multi-sequence project, you also have the option to load specific individual sequences from that project. On the **IMPORT** screen, choose '**Selected Sequences**':



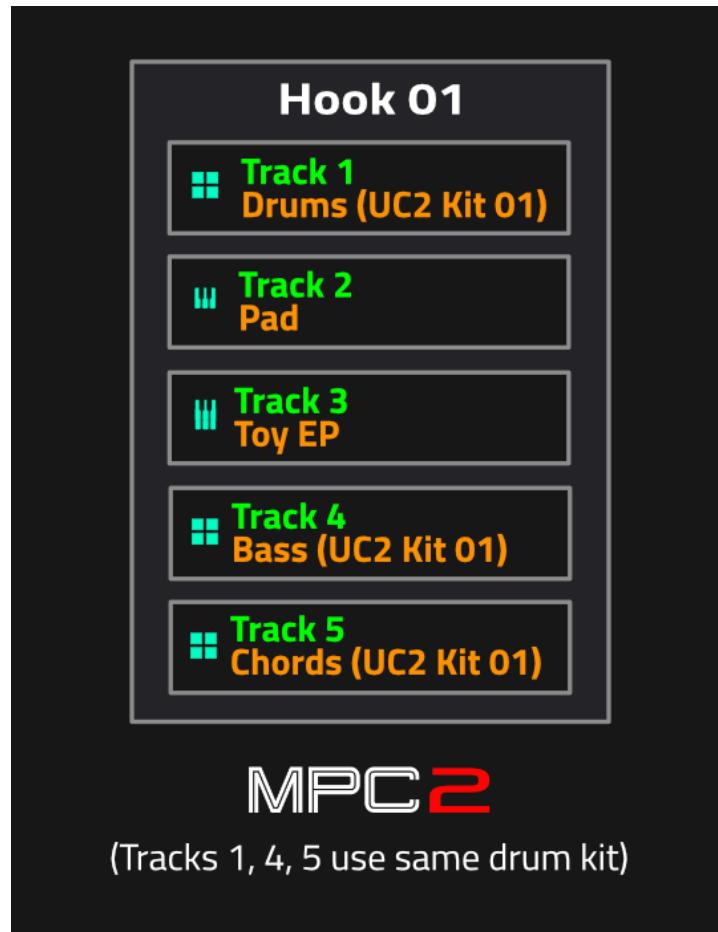
In the example above I am only importing sequence 2 (Hook 02). Just be aware that when you do this, MPC3 will import the sequence into the same sequence 'slot' as it occupied in the original project; so in the case the **Hook 02 sequence** will be imported into the **sequence 2 slot** in the new MPC3 project. So in this example, where we are not importing sequence 1, the 'sequence 1 slot' in your new MPC3 project will be blank (so don't panic).

You can use this 'individual sequences' import to split up a complex, 'multi-song' MPC2 project into multiple individual MPC3 projects. Simply import the individual sequence(s) relating to a single 'song', then re-save this smaller collection of sequences as a new MPC3 project. Then repeat for the sequences relating to the next song.

SEQUENCES WITH THE SAME KIT ON MULTIPLE TRACKS

The final example I'll cover is almost certainly the most common one that's going to be encountered by MPC2 users; from the **D01** folder, load the project file **MPC2 Construction Kit Project.xpj**. This is the same single sequence project we've been using previously, however this time track 1 no longer contains a mix of drums, bass and chord one shots. Instead, it just contains drums (with MIDI events triggering pads A01 to A12).

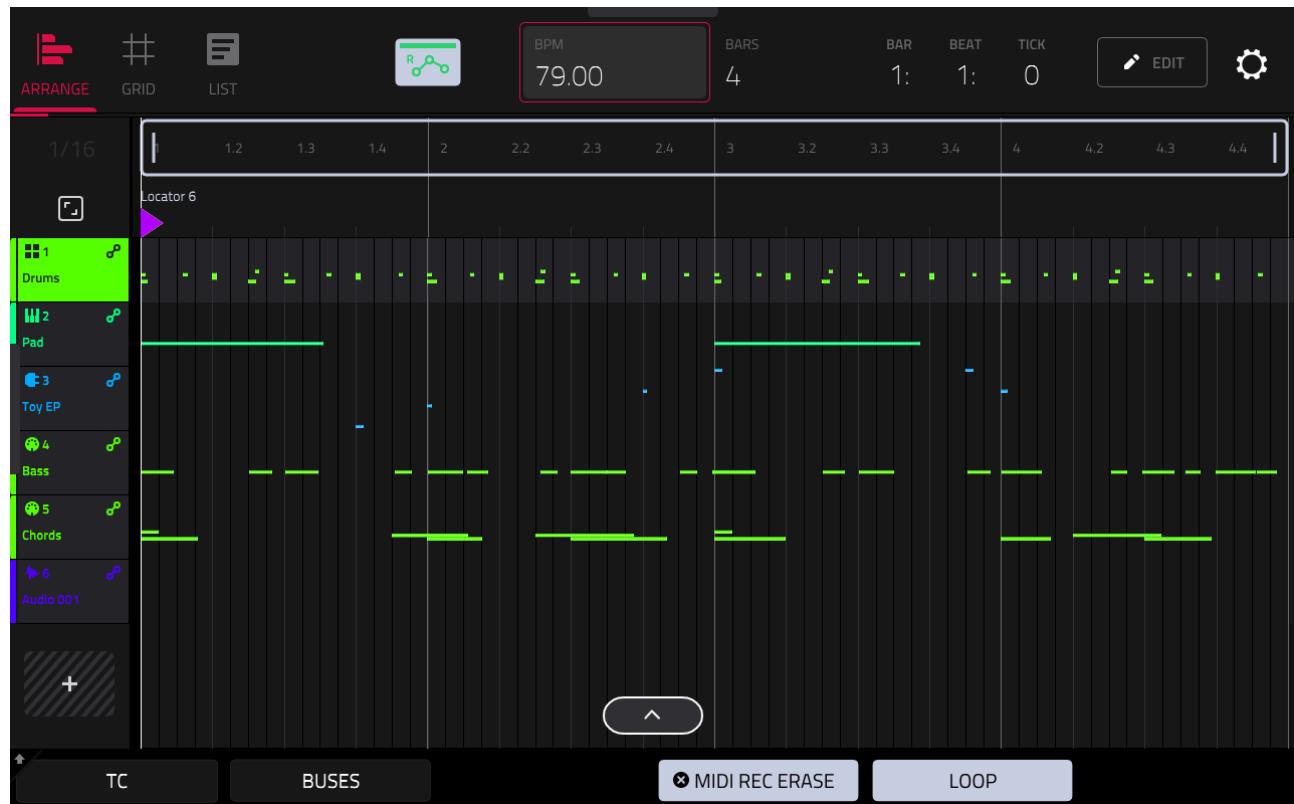
I've now placed the bass line events from pad [A13] on their own track (track 4). And the melodic chords (pads A14 -A16) on track 5.



Setting this up in the original **MPC2** project was simple; on track 1, assign the program '**UC Kit 01**' and record some drums. Then on **track 4**, assign the same to **UC Kit 01** kit and record some bass (using 16 LEVELS on pad A13). Then assign the same **UC Kit 01** to **track 5** and record the chords (16 LEVELS on pads A14 to A16). All three tracks trigger the same single instance of '**UC Kit 01**' sitting in the 'program pool'.

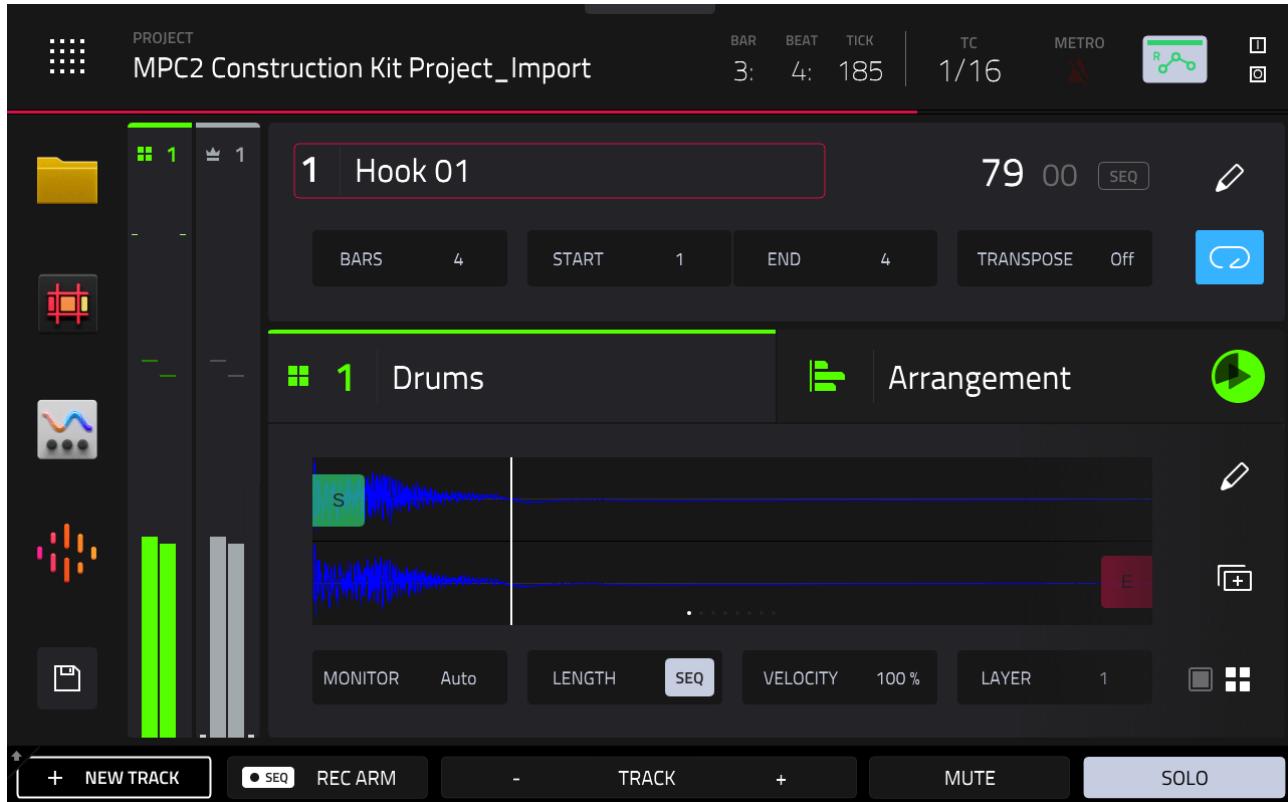
However, we know that MPC3 does not natively support assigning the same kit to multiple tracks, so let's see what happens when we try importing this project. After loading the XPJ, go to the **ARRANGER** where

you'll see the expected five tracks in **sequence 1** (again, ignore the default blank audio track that is present in all MPC2 projects):



Hit [**PLAY START**] to listen; you should hear the exact same beat as before; let's take a closer look at this sequence. Go to [**MAIN**] and select **track 1 (Drums)**:

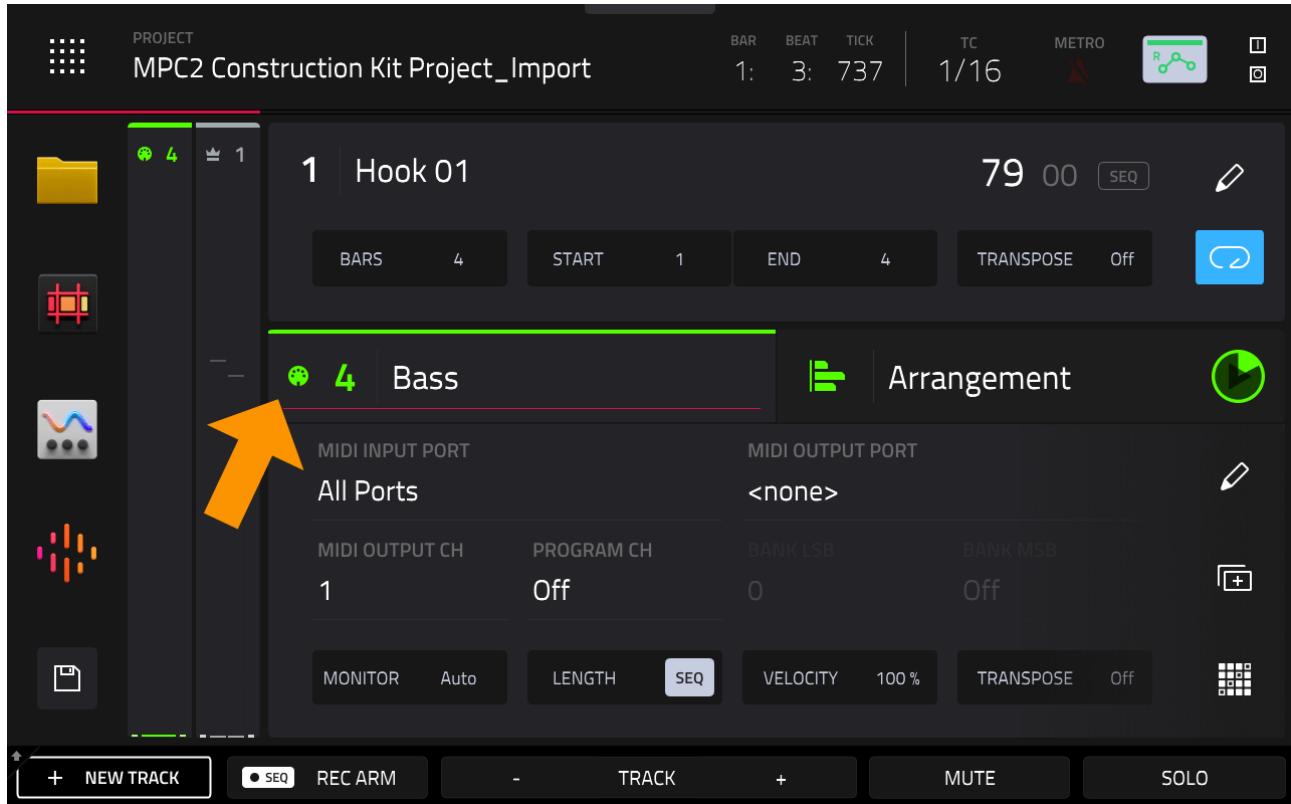
D01 MPC2 PROJECT MIGRATION GUIDE



Hit a few pads and you'll see from the waveforms on screen that this is indeed our original UC2 Kit 01 'drum kit' with all the sounds assigned to pads A01 to A16. Hit **SOLO** and you'll hear that this track now only contains the actual drum performance.

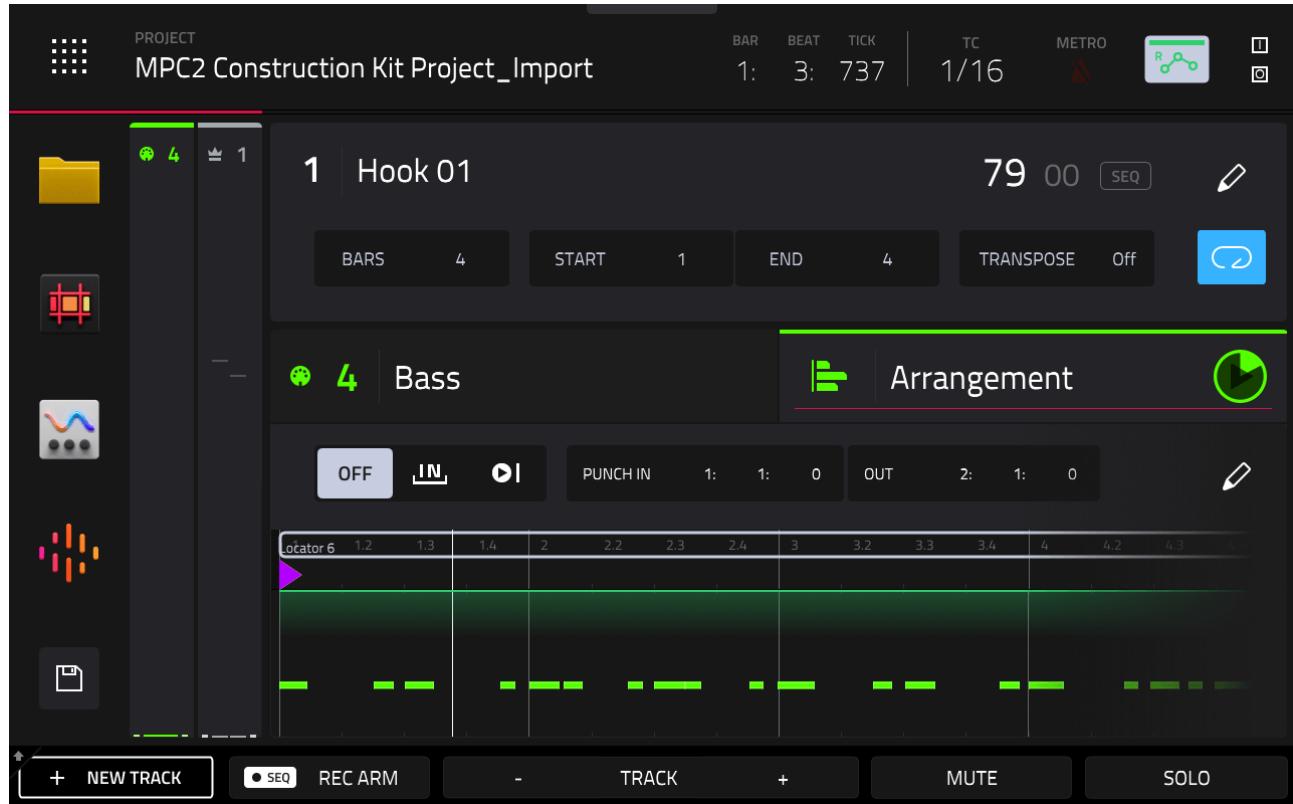
Now select **track 4, Bass:**

D01 MPC2 PROJECT MIGRATION GUIDE

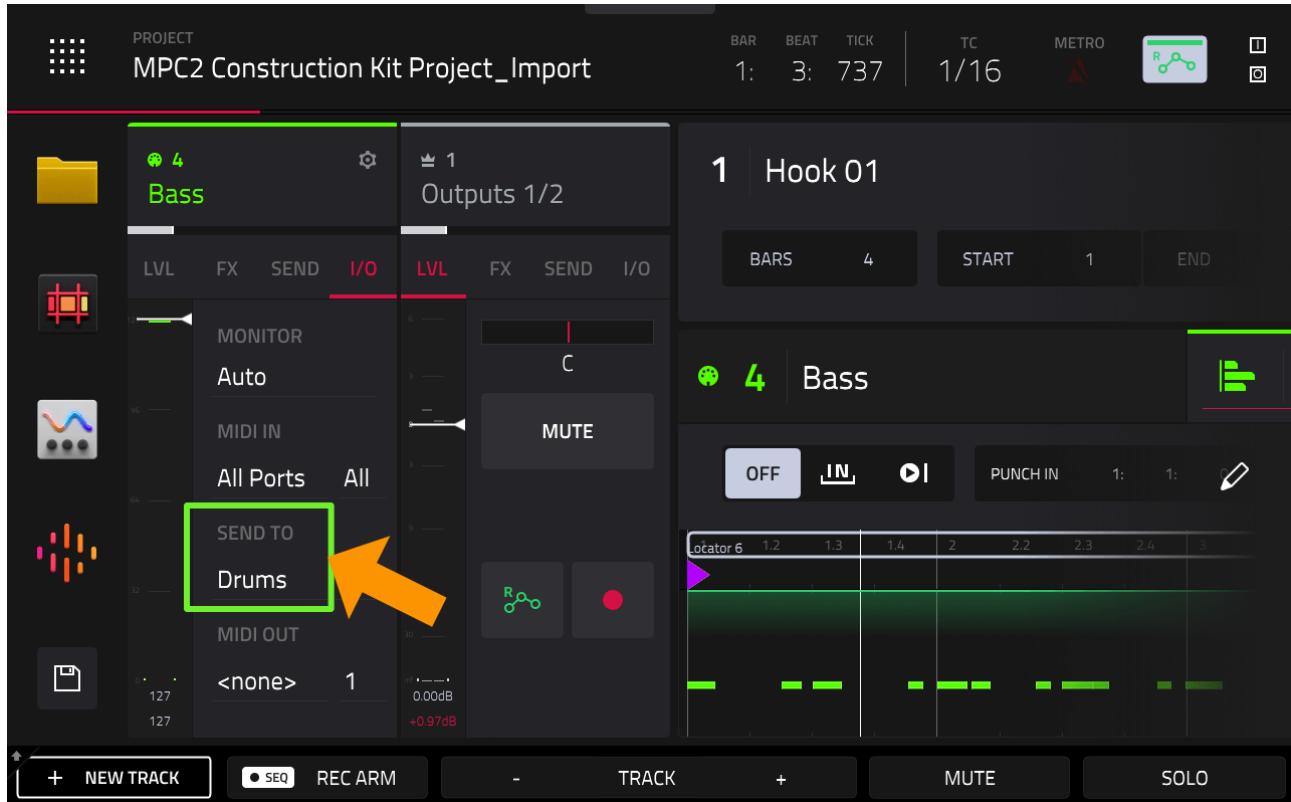


In the original MPC2 project, this was a '**DRUM**' track assigned to the **UC Kit 01** kit. However in MPC3 it is now a **MIDI** track! Click on the **arrangement** tab:

D01 MPC2 PROJECT MIGRATION GUIDE



You can see it contains all the bass note events, and if you select [**BANK B**] and hit some pads you'll hear that it is indeed triggering sounds from '**UC Kit 01**' construction kit. So what is happening here? Open the **XL CHANNEL STRIP** and select the **I/O** tab:



Notice the **SEND TO** parameter is pointing to the **Drums** track. This means any MIDI sent from track 4 is also going to trigger the exact same MIDI note on the Drums track (1). So when track 4 triggers MIDI note C2, it triggers MIDI note C2 in the UC Kit 01 on track 1 – which in our DRUM track is pad [A13], the bass tone.

This is effectively the 'MPC3 way' of mimicking the MPC2 concept of two tracks 'sharing' the same drum kit.

It's a similar story for **track 5, Chords** – this is also a MIDI track with a **SEND TO** set to '**Drums**' (track 1). The events recorded to this Chords track are triggering the sounds on pads [A14] to [A16] on the Drums track (the melodic chord sounds).

LIMITATIONS OF MIDI 'SEND TO' TRACKS

From a general 'listening' perspective, this works absolutely fine, all the sounds are being triggered as required, so Akai consider this to be a 100% successful project import – however there are some potential issues to look at.

Firstly, remember 'the kit' itself is on track 1, so all editing of any sounds on that kit must be done by first selecting track 1; track 4 is purely for sending MIDI events over to trigger the sounds on track 1.

Another consideration is that a MIDI track uses 'PAD PERFORM' to control its note layout, so the pad layout on track 4 will probably not mirror the pad layout of the drum track it is triggering, not without configuring 'pad perform' specifically for this track only. Also, any custom pad colours in track 1 are not mirrored in the 'send to' tracks.

Also bear in mind that if you **SOLO** the 'bass' track in MAIN, it does nothing. However, **MUTE** does work in MAIN (and in the CHANNEL MIXER); while in the **TRACK MUTE** screen only '**AUDIO**' mutes will mute a 'send to' track.

The final issue with 'SEND TO' tracks is that they are *completely ignored* when you perform a '**Separated Tracks**' mix down. So if you go to **SAVE > Audio Mixdown > Separated Tracks**, no files will be created for the 'Bass' and 'Chords' tracks, you'll only get multis for 'Drums', 'Pads' and 'Toy EP'.

Don't get me wrong, 'SEND TO' tracks have a bunch of interesting and creative uses (see my [Project FAQs](#) for some examples!), but unless you are specifically wanting to take advantage of these features, you'll

probably want to think about 'converting' SEND TO tracks into fully populated tracks so you can avoid the issues I've detailed in this section.

CONFIGURING THE SEND TO TRACK AS A DRUM TRACK

You don't have to keep a 'send to' track as a MIDI track, you can change it to **DRUM**. The MIDI events on the track will remain, as will the 'SEND TO' setting (and all other track settings). Now the pads will use the CHROMATIC C1 MIDI note layout, which should mirror the MIDI note layout for most modern MPC drum tracks (but not 'classic MPC' layouts). However you'll still not have 'mirrored' pad colours.

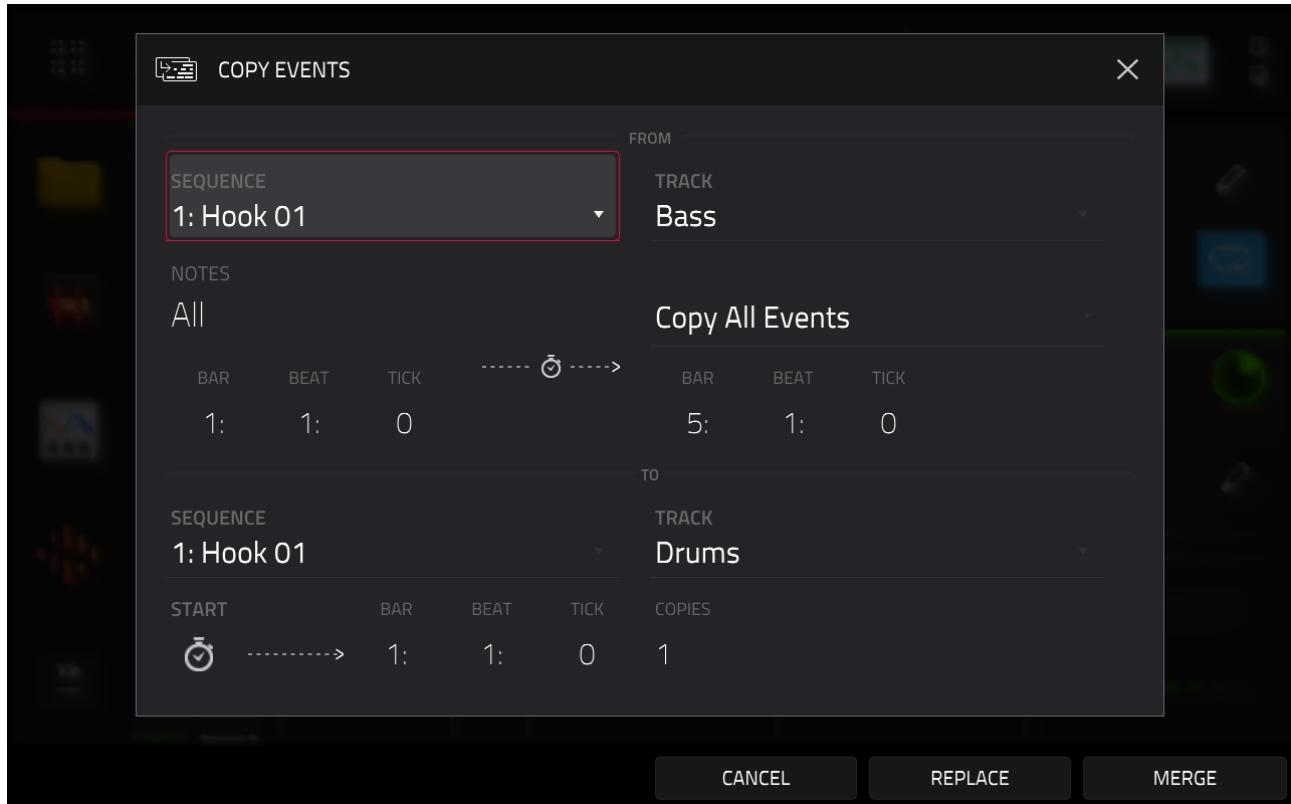
Just be aware that now, both the **MUTE** and **SOLO** buttons in MAIN now have no effect whatsoever! In the **TRACK MUTE** screen, '**EVENT**' muting works fine (but AUDIO muting is ignored).

CONVERTING 'SEND TO' TRACKS

There's a few ways we can convert these automatically generated 'SEND TO' tracks, each method produces a slightly different end result.

OPTION 1: REVERT TO A SINGLE TRACK

One option is re-combine the tracks back into a single track which handles all the events that target the sounds of the main kit on track 1. With the 'send to' track selected, hit the main sequence **EDIT** icon to bring up the **SEQUENCE EDIT** dialog and select **COPY EVENTS**:

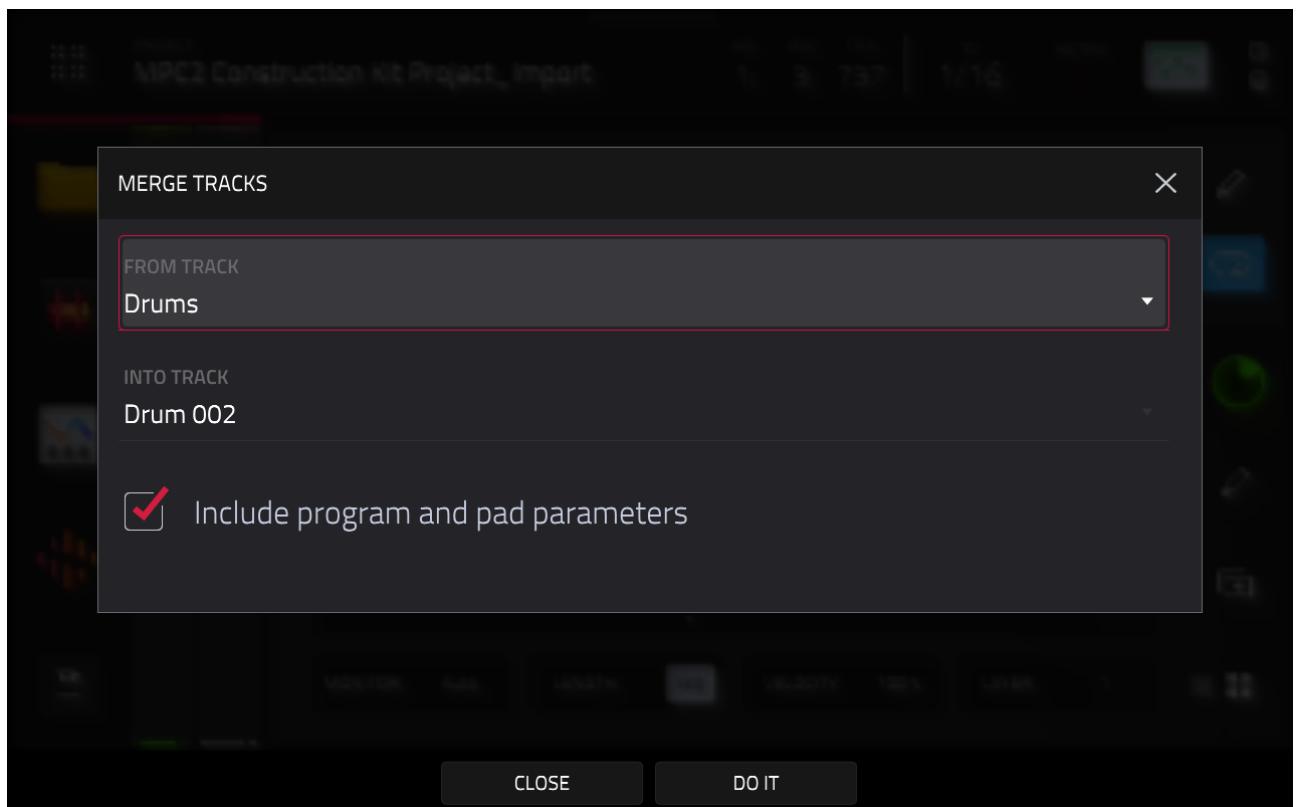


Simply copy the events from track 4 to track 1; make sure you select **MERGE**. Repeat for the '**Chords**' track. Now the bass and chord MIDI events are merged back into track 1. Delete the Bass and Chords tracks. This effectively creates the structure of the first example project in this chapter, 'MPC2 Single Seq Project.xpj'.

Now you can use the pad mixer for mixing the elements of your track, and pad mutes for muting. You can always use the '**explode tracks**' function to then give you the flexibility of separate tracks in your project at a later date. Or as we saw at the end of Section C, you can simply use the **Drum Pads As Stems** option instead.

OPTION 2: MERGE TRACKS

First change the **track type** for all your SEND TO tracks from MIDI to **DRUM**. Now select track 1 (the one containing the actual drum kit itself) and hit the **pencil** on the **Track tab** – select **Merge Tracks**:



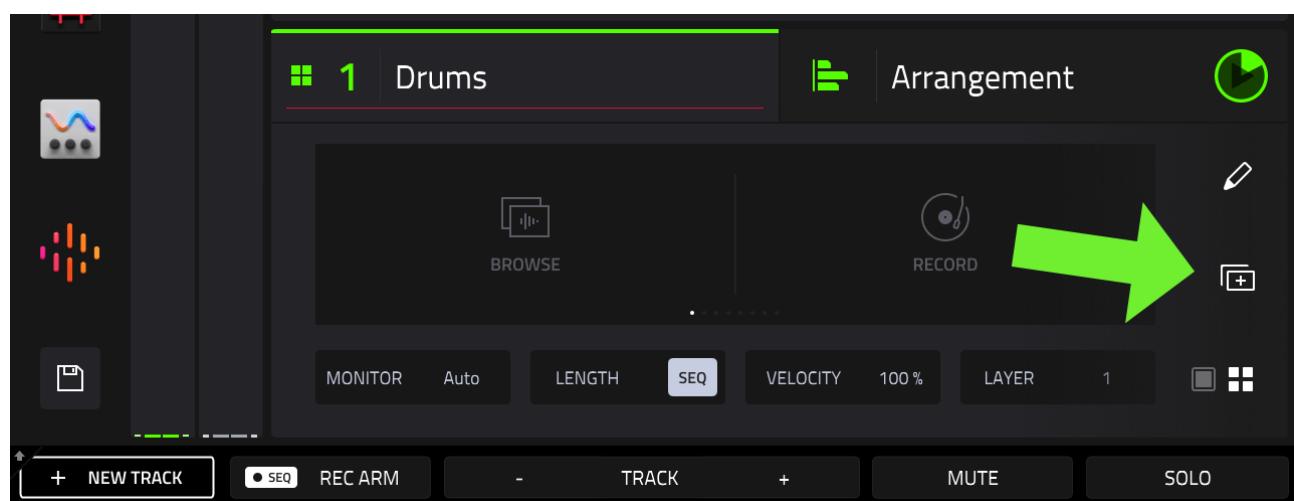
Make sure **FROM TRACK** is set to the track containing the actual kit. The **INTO TRACK** is your 'SEND TO' DRUM track. Check '**Include program and pad parameters**' and hit **DO IT**. This will copy all the pad parameter settings from the kit on track 1 and place them on track 4 as well. Repeat for track 5.

It's important to note that all tracks reference the same set of samples from the project's sample pool so there's no sample duplication whatsoever. Pad FX and DRUM FX are also copied over.

*'Merge Tracks' does not copy over any track **insert FX plugins**, only pad data. If your copied track uses track FX and you wish them to be applied to your other tracks, I would suggest to use the '['submix' workaround I detailed in chapter C09](#), this will avoid unnecessary duplication of FX plugin instances.*

OPTION 3 – DUPLICATE TRACK

This option is similar to the previous example. With **track 1** selected, hit the **+** icon in the **Track** tab:



This duplicates the current track to a completely new track – including any track insert FX. You can now '**COPY EVENTS**' from your Bass track to this duplicated track. Duplicate track 1 a second time and copy the **Chord** track events to this second duplicate. Remember to delete the original 'SEND TO' tracks afterwards as they are no longer needed.

If you are happy for each duplicate track to have copies of any pre-existing track FX inserts (and there may not be any in the first place), then this option is the quickest. If you don't want to duplicate track FX, then use the [submix workaround](#) mentioned previously.

I would normally go for option 2, although if I'm happy to then explode track 1 then option 1 is also quite robust.

PROJECT IMPORT CHECKLIST

Some things to check when you import your own projects include:

- Remember, always retain a backup (or three!) of the original MPC2 project, just in case you spot issues later down the line.
- Listen to the project; does it sound okay? If everything imported correctly there's really no reason for it to sound any different to the MPC2 version.
- Check the sequence parameters, such as tempo, length, track structure and so on. There should all be as per the original project.
- Are all samples loaded?
- Look at the new track structure and decide whether you wish to keep it or potentially look at combining tracks or converting 'send to' tracks into 'fully populated' tracks using any of the methods mentioned previously.

- Consider splitting up complex 'multi-song' projects into multiple 'single song' projects using the 'Individual Sequences' import - this will avoid MPC3 having to create one track-heavy 'unified' project.

D02 PROJECT & SEQUENCING FAQS

In this section we look at some quick troubleshooting tips and FAQs relating to projects and sequences

HOW DO I DELETE A SEQUENCE?

There's no dedicated 'Delete Sequence' function. You can '**clear**' a sequence via **MAIN > sequence edit pencil > Clear**, but this only deletes the recorded data on each track in the current sequence (MIDI events, audio regions). The sequence itself remains (name, bar length, tempo etc).

The workaround is to select an 'unused' sequence in your project and use '**Sequence Edit > Copy Sequence**' and copy this unused sequence over the sequence slot you wish to delete.

HOW DO I REORDER SEQUENCES?

There's no official functionality provided to reorder sequences, so use the '**Sequence Edit > Copy Sequences**' function and literally copy sequences 'around' the project - it's very convoluted. For example, to swap **sequence 3** with **sequence 1** (so seq 3 is in slot 1, seq 1 is in slot 3):

- Copy sequence 1 to **slot 4**
- Copy sequence 3 to **slot 1**
- Copy sequence 1 (from slot 4) to **slot 3**
- Copy an unused sequence over **slot 4**.

HOW DO I PERFORM OVER A MUTED TRACK?

Sometimes you want to mute the existing recorded events on a track but then play 'freestyle' over that muted track. This could be in a live situation, or while working on an arrangement. However, it is not possible to 'play' over a muted track. Two workarounds:

- Use the **DUPLICATE TRACK** function in MAIN (+ icon in track tab) to make a copy of the track; mute one track, perform on the unmuted duplicate.
- Create a **MIDI** track and set the **SEND TO** parameter to the drum track on track 1. Use the MIDI track for general recording/playback of drum kit events; you can then 'mute' the MIDI track when required (silencing any pre-recorded events) and perform additional live hits on the original drum track.

AFTER LOADING A PROJECT MY SAMPLES ARE SILENT!

Before MPC3, when you loaded a large project you had to wait around in the BROWSER until all the samples had been completely loaded into memory. In MPC3, loading is now effectively a 'background process', so when you load an XPJ file in the BROWSER, it appears that loading has completed almost instantly. However in reality, samples are still being loaded 'behind the scenes'.

For large projects it's possible that some samples are still in the process of loading when you try accessing them in your project, so you might get silence when hitting some pads, or perhaps no sound at all when initially hitting [PLAY START].

There isn't really anything we can do about this, it's just the way it is. For most projects it's not really a problem to wait a few seconds while the sounds load up in the background (previously you would have been waiting around in the browser instead).



*If you go to **MENU > PROJECT** you'll actually see a red cross next to any sample not yet loaded into memory.*

CAN I GROUP PADS TOGETHER WHEN EXPLODING A TRACK?

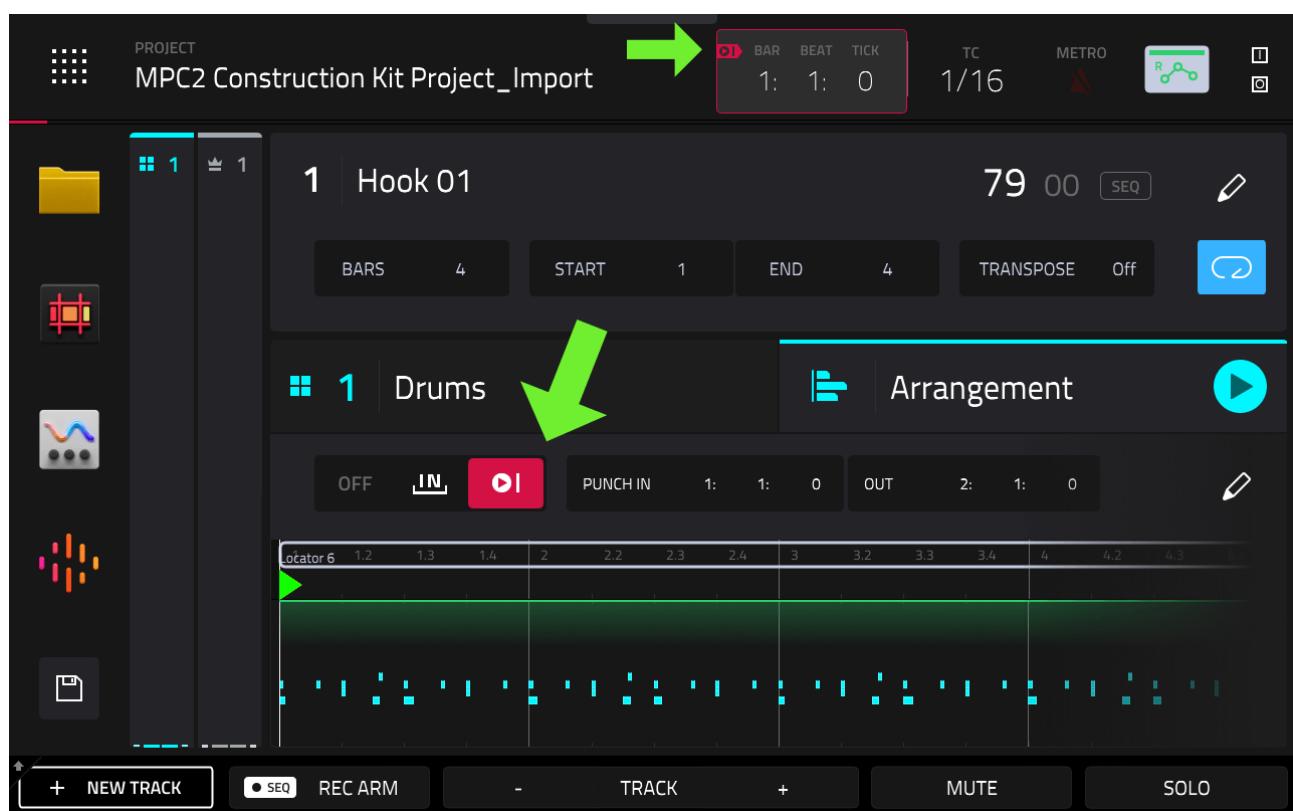
If you have a track containing events from multiple different instruments (e.g. a drum kit performance) you can '[explode](#)' it to create a new track for each instrument used (kick track, snare track and so on). But if pads are in the same '**mute group**' then they will explode together to a single track.

For example, if an open hat (A04) and closed hat (A03) are both set to MUTE GROUP 1, after exploding, you'll get a single 'hi hat' track that contains both pad [A03] and [A04] as well as the MIDI events for both these pads.

If you want to group pads that would not normally be added to mute groups (e.g. snare and rim shot) then temporarily set those pads to the same mute group (one that isn't used elsewhere in the track), explode the track, and in the resulting exploded 'snare' track set the snare pad mute groups back to 'off'.

HOW DO I GET A LONGER-COUNT IN BEFORE RECORDING?

If one bar count in is not enough, select the Arrangement tab in [**MAIN**] and enable **AUTO RECORD AT LOOP START**:



This feature requires that your sequence is set to **LOOP:ON**. After enabling, you'll also see a red arrow appear to the left of the time counter. Now you can just hit **[PLAY]** at any time location in your current sequence and the MPC will automatically begin recording the next time the sequence loops back to the beginning (1: 1: 0). Set back to '**OFF**' if you wish to disable this feature.

HOW DO I RUN MORE THAN 8 PLUGIN TRACKS?

You can only have a maximum of 8 'PLUGIN' type tracks in a project. You can however use '**SEND TO**' to point one or more MIDI tracks to any of these plugin tracks. So in this case, the MIDI track will trigger sounds from the same plugin preset as the 'SEND TO' track, but will allow you to create a separate MIDI performance with that same preset.

As discussed in chapters **C03** and **C04**, the other options here are to 'convert' some of your plugin tracks to free up plugin instances. For example, **Autosample** plugins to create **keygroup instrument** 'clones' of plugin tracks or bounce a plugin track to an **audio track**.

I FORGOT TO HIT RECORD, CAN I CAPTURE WHAT I WAS PLAYING?

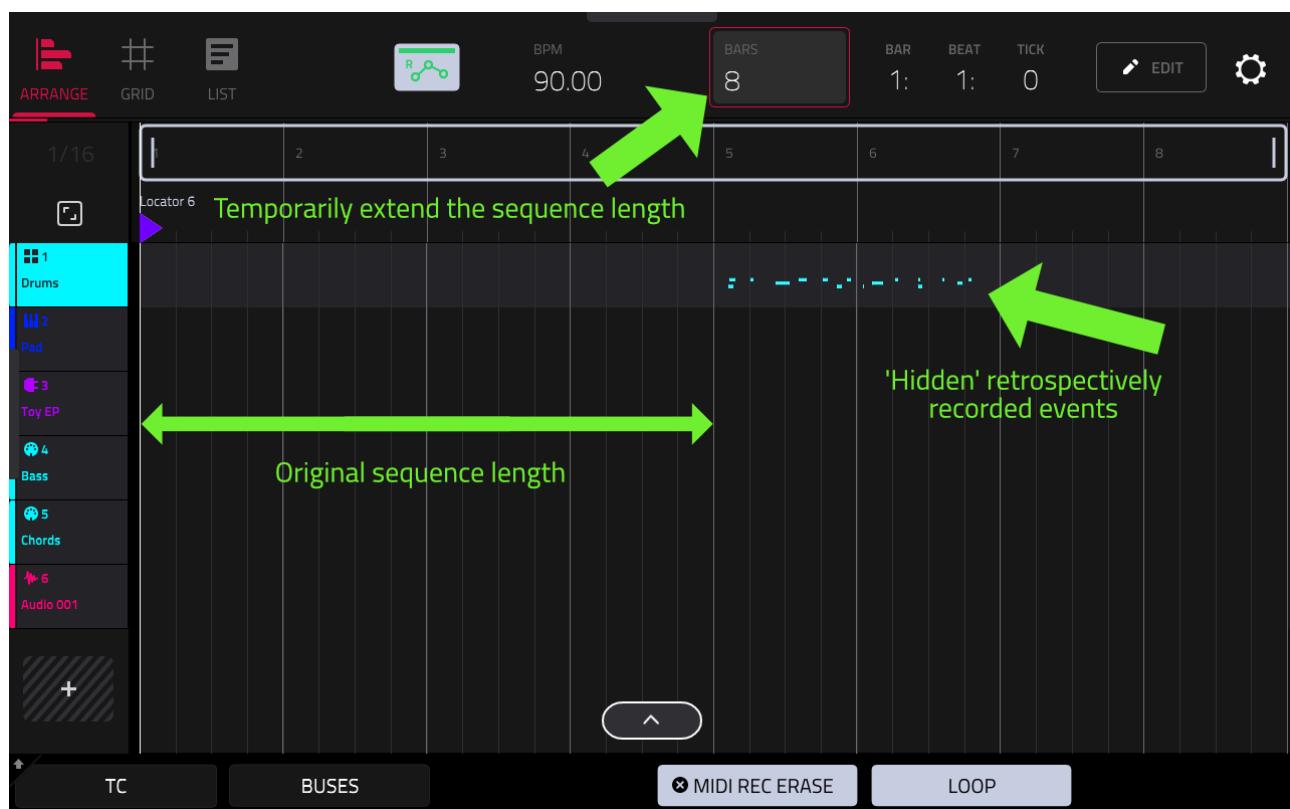
Yes, hit **[STOP]** and immediately press **[SHIFT]** and **[RECORD]** and the MPC will perform a '**retrospective record**', placing all the events you just played into your sequence. Just be aware that it will add these events *exactly* as played (any timing correct that was in place will be ignored).

Retrospective record still requires that your track is already set to **REC ARM**.

I CAN'T SEE MY 'RETROSPECTIVE RECORD' EVENTS!

Let's say you have a 4 bar sequence and it had already played through those first four bars before you started playing some events. After pressing 'retrospective record' those events will be placed in what is effectively a 'hidden' region of your sequence *after* bar 4.

To access these events, go to **ARRANGE**, temporarily increase the **BARS** and hit the **zoom reset button** and you should see the retrospective events:



Listen to the retrospective events and if you want to use them you can now use standard sequence editing tools to copy those events back into the 'active' portion of your original sequence - for example, use **SEQUENCE EDIT > COPY EVENTS**.

After salvaging the retrospective events, set your **BARS** back to the original length. At this point if there's any events still in the 'hidden zone', you can use **EDIT > Trim** to completely delete them.

HOW DO I TRY DIFFERENT KITS OR INSTRUMENTS ON AN EXISTING TRACK?

In MPC2 you could create a MIDI performance and then load a bunch of kits into memory and literally 'scroll' through and preview the different kits on your track in real time while the sequence was playing.

In MPC3 there is no program pool so this is no longer possible. The standard MPC3 way to try out different kits is to hit [**PLAY START**] on your sequence, go to the **BROWSER** and then simply load a new kit to that track. If you don't like it, load another, it will simultaneously delete and purge the other track removing it entirely from your project.



*In **BROWSER**, hit the **GEAR** icon - here you can change the default '**Clear unused samples on load**' action. If you uncheck this, loading a new kit to a track will replace the current kit on that track but retain its samples within memory.*

If you want to quickly switch back and forth between a few different kits, first load multiple kits into your project using the '**LOAD TO NEW TRACK**' option so each kit sits on its own unique track.

Now select (or create) an empty DRUM track and in the **XL CHANNEL STRIP** ➤ **I/O** tab use the '**SEND TO**' parameter to 'send to' the first loaded drum track. Record a MIDI performance on the empty track (you'll hear the drums thanks to 'send to'), press [**PLAY START**] on that track and start changing the **SEND TO** parameter to point to the various different DRUM tracks while the sequence plays.

When you find the kit you want to use with the MIDI events, use **Sequence Edit** ➤ **COPY EVENTS** to permanently copy the MIDI data to that DRUM track, then if you wish, delete the other tracks to free up memory.

HOW DO I COMPLETELY ERASE A TRACK?

There's many ways to delete all events in the currently selected track:

- Press [**ERASE**] and hit **DO IT**
- [**MAIN**] ➤ **Track Edit Pencil** ➤ **Clear**
- **ARRANGE** ➤ hold down on track header ➤ **Clear**
- **GRID VIEW** ➤ [**SHIFT**] ➤ **SELECT ALL** ➤ **DELETE**

HOW DO I ERASE SPECIFIC EVENTS?

- Play a sequence, hold down [**ERASE**] and hold down a pad to erase events for that pad whenever you pass them in the sequence

- **[ERASE]** > configure specific erase variables (time range, notes, etc)
- **GRID EDIT** > **erase tool**
- **GRID EDIT** > **select events with the select tool** & hit **DELETE**
- **LIST EDIT** > tap on an event (SHIFT + tap for multiple events) > **DELETE**

D03 TRACK & SAMPLE EDIT FAQS

This section contains quick tips and Q&As for working with tracks and samples.

WHAT IS THE 'CLASSIC MPC' NOTE LAYOUT?

On a new DRUM track in MPC3 the underlying MIDI notes assigned to the pads run in a *chromatic* order starting with note **C1 (36)** on pad **[A01]**:

A13	A14	A15	A16
C2 MIDI 48	C#2 MIDI 49	D2 MIDI 50	D#2 MIDI 51
A09	A10	A11	A12
G#1 MIDI 44	A1 MIDI 45	Bb1 MIDI 46	B1 MIDI 47
A05	A06	A07	A08
E1 MIDI 40	F1 MIDI 41	F#1 MIDI 42	G1 MIDI 43
A01	A02	A03	A04
C1 MIDI 36	C#1 MIDI 37	D1 MIDI 38	D#1 MIDI 39

This is referred to as **CHROMATIC C1** mapping. However, legacy MPCs used a different underlying MIDI mapping called '**CLASSIC MPC**', which looks like this on [**BANK A**]:

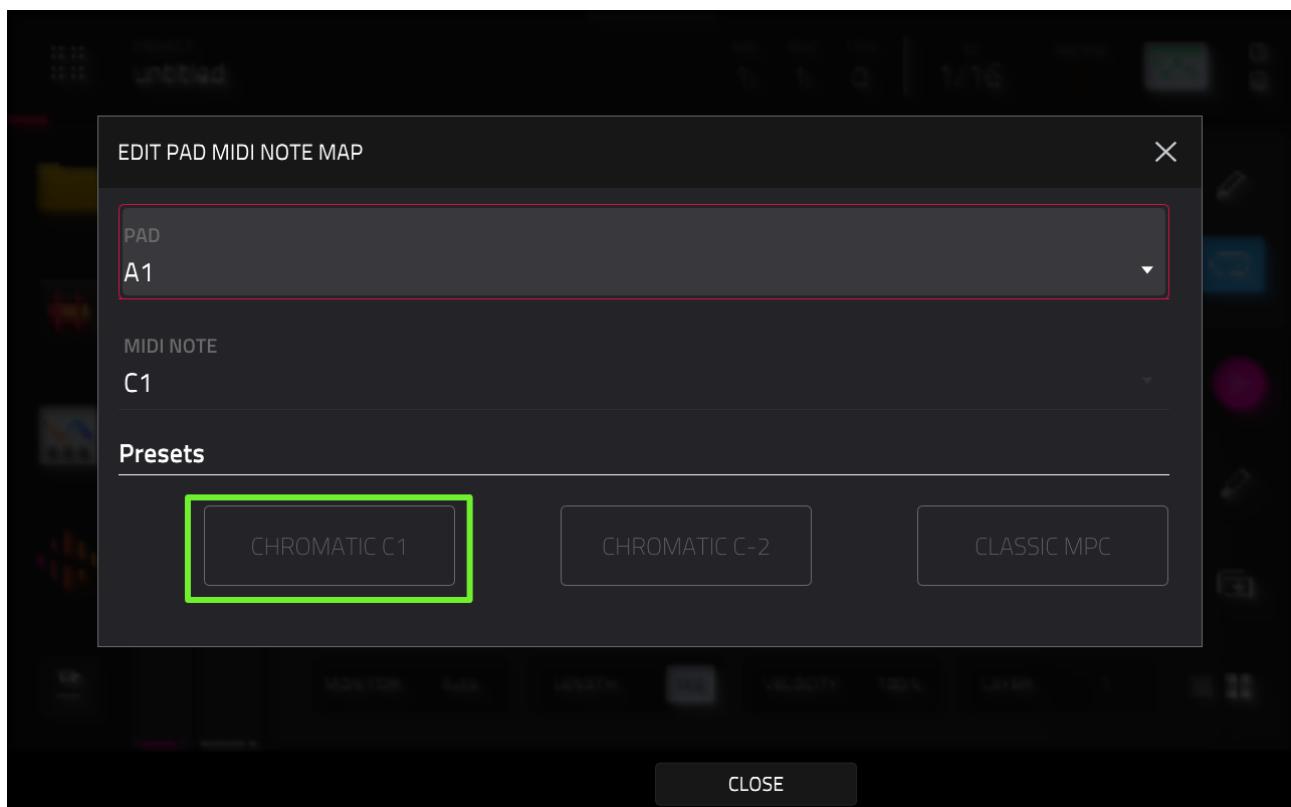
A13	A14	A15	A16
C#2 MIDI 49	G2 MIDI 55	D#2 MIDI 51	F2 MIDI 53
A09	A10	A11	A12
C2 MIDI 48	B1 MIDI 47	A1 MIDI 45	G1 MIDI 43
A05	A06	A07	A08
E1 MIDI 40	D1 MIDI 38	A#1 MIDI 46	G#1 MIDI 44
A01	A02	A03	A04
C#1 MIDI 37	C1 MIDI 36	F#1 MIDI 42	A#4 MIDI 82

This means any sequence originally created with a classic MPC mapped kit is unlikely to work as expected with a modern 'chromatic C1' kit, and vice versa. For example, if a kick was assigned to pad [A01] in a 'classic mpc' kit (midi note 37), the same sequence played with a 'chromatic C1' kit would trigger a snare from midi note 37 on pad [A02].

One problem is that many commercial libraries, including Akai's own factory libraries and expansions typically use both layouts, sometimes

mixing the two within the same library which means you can't easily 'mix and match' kits with a sequence.

However, you can easily convert any 'classic mpc' kits you come across by going to **MAIN > track pencil > 'Edit Pad Note Map'**:



Select '**CHROMATIC C1**' and the MIDI notes will be remapped while keeping the existing physical sample layout. So if pad [A01] was originally a kick with a MIDI note 37, after remapping [A01] will still be a kick, but it will be triggered by MIDI note 36 instead.



*To add to the confusion, 'DrumSynth Multi' kits use a **Chromatic C-2** layout; you can even select this layout as an option in the*

EDIT PAD MIDI NOTE MAP screen.

CLIP-STYLE LOOP TOGGLES

MPC2 had an additional type of program/track type called '*CLIP*', which was a track type focused on launching audio loops (referred to as 'clips' or 'audio clips'). Within a CLIP program you could assign an audio loop to a pad and 'toggle' its playback on and off by tapping the pad.

MPC3 no longer supports CLIP tracks but it is possible to 'fudge' similar 'loop toggle' functionality on a DRUM pad instead.

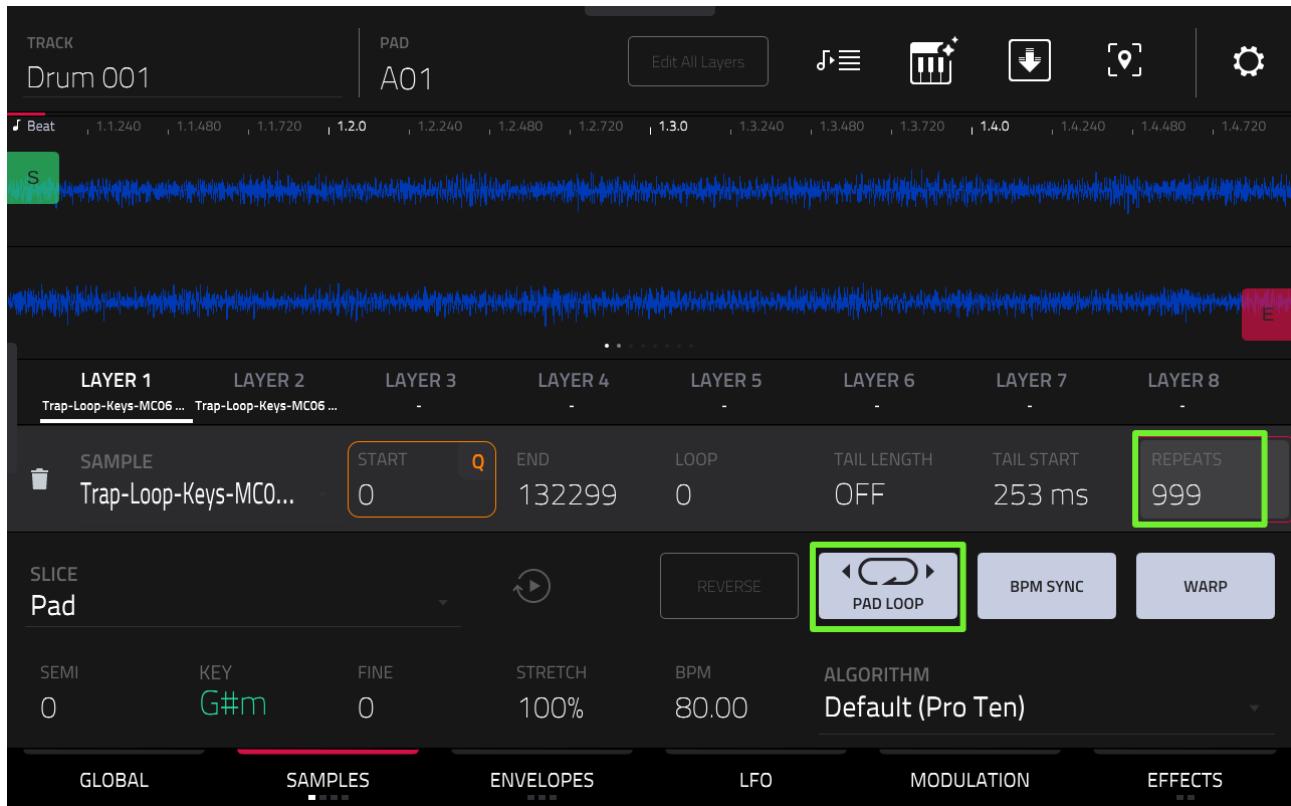
Create a **DRUM** track, configure a pad to **ONE SHOT** pad play, **CYCLE** layer play and pad **POLY** to **Mono**.

D03 TRACK & SAMPLE EDIT FAQS



Now assign a looped sample to **LAYER 1**, set **REPEATS** to **999**, and turn on **PAD LOOP** (optionally turn on **WARP** if you wish the loop to automatically match sequence tempo).

D03 TRACK & SAMPLE EDIT FAQS



On **LAYER 2**, assign any sample you wish, but set the **LEVEL** to **0**.



Hit the pad to launch the sample on LAYER 1 and hence begin playback of the loop. At this point, it will begin looping for the number of **REPEATS** specified (**999** is the highest value you can enter here).

To manually stop loop playback, simply tap the pad again. The '**CYCLE**' layer play means that the second time you hit the pad, the *silent* **LAYER 2** is triggered. As the pad is set to **MONO** play, only one layer can play at any moment in time, so our silent layer instantly mutes the loop on layer 1, effectively acting like an 'off' switch for the pad.

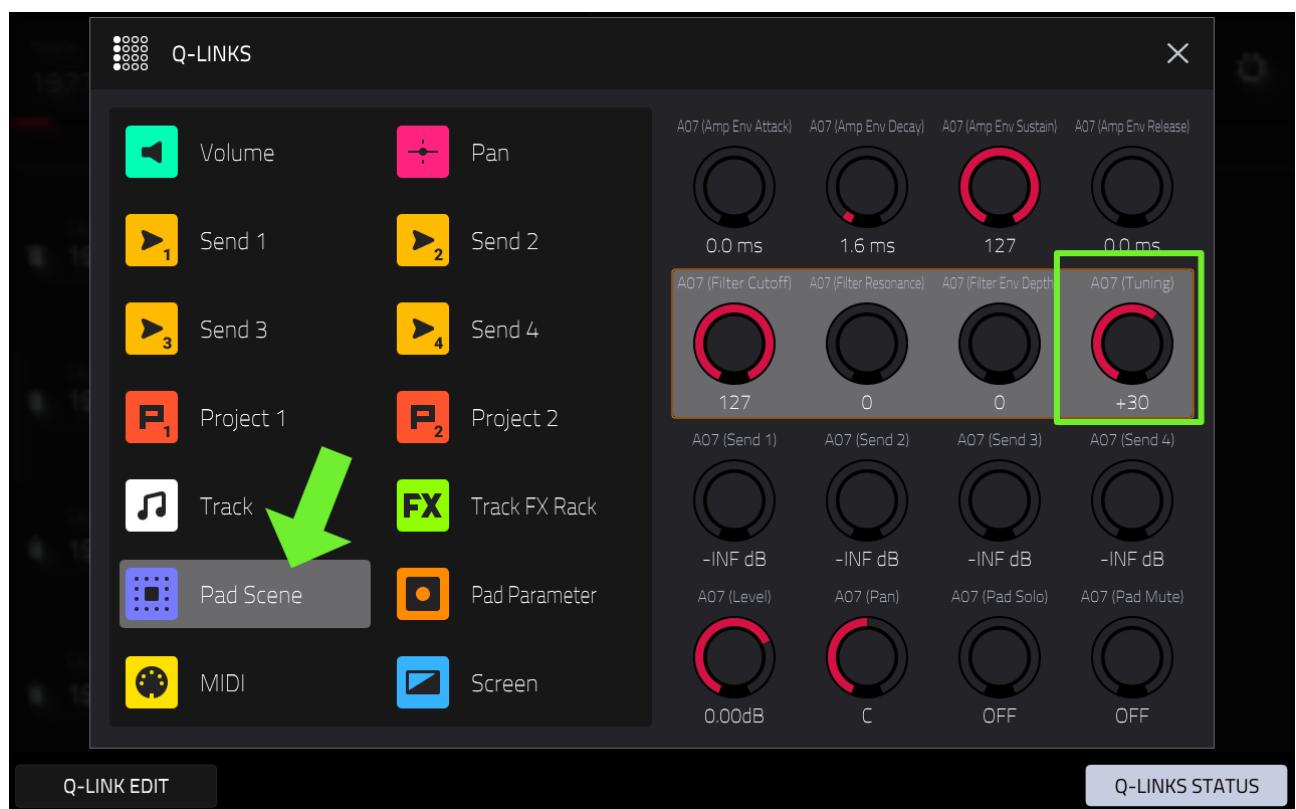
Hit the pad again to re-launch the loop on LAYER 1. Now you have 'loop toggle' playback which can be used to launch loops in a live performance.



*One CLIP feature that is still missing is the option for '**launch quantisation**' – this is where you could, for example, hit the pad some time before the end of a bar and the MPC waited until the start of the next bar before actually launching the loop. It's similar to the TC option in the TRACK MUTE screen, or the 'Next Sequence' functionality.*

HOW DO I RE-TUNE AN ENTIRE PAD?

While you are in **TRACK EDIT**, hold down the **[Q-LINK]** button and select **PAD SCENE** mode:



Now you can use (Q-LINK 3) to tune the entire pad - this is the bottom (Q-LINK) in **[Q-LINK BANK 3]**.



This 'Tuning' parameter is not visible as a touchscreen editable parameter anywhere in TRACK EDIT, it's only available to view and edit via this one Q-LINK.

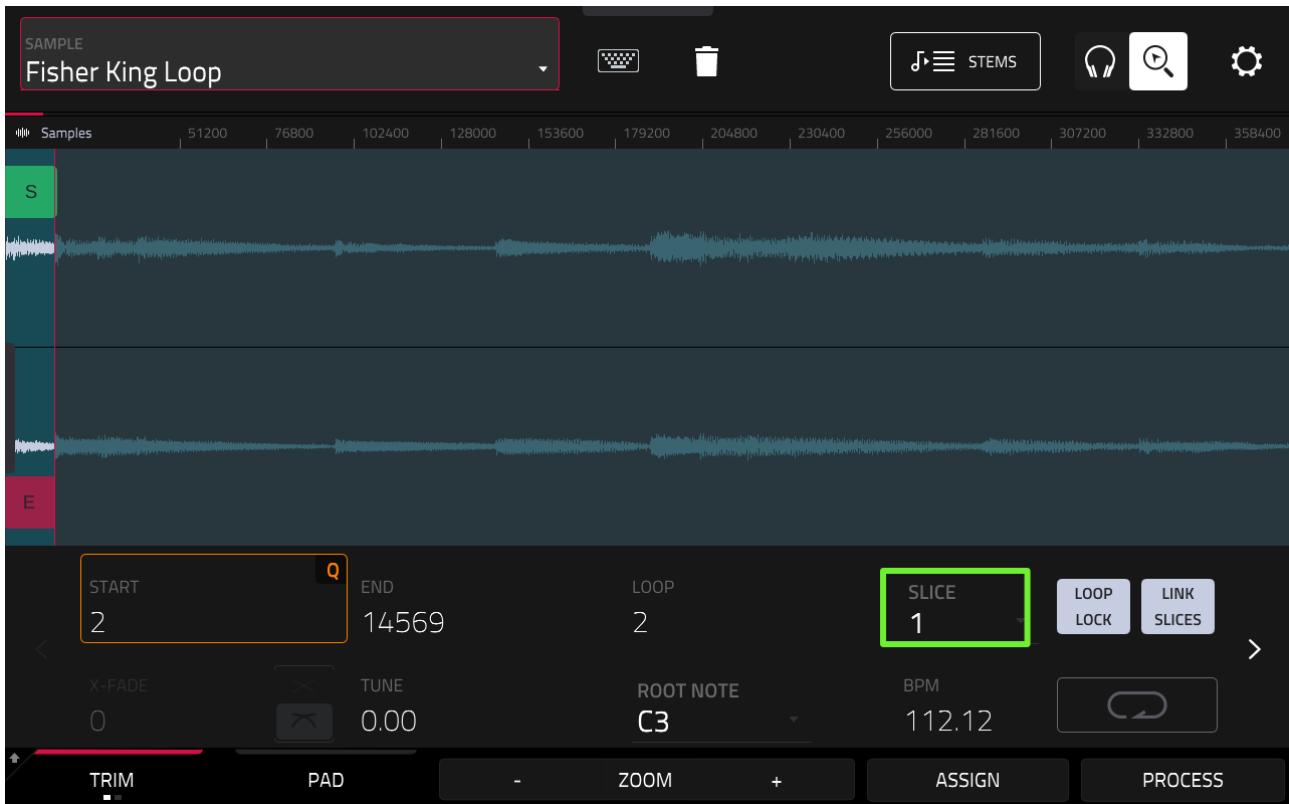
Alternatively select **EDIT ALL LAYERS** at the top of the TRACK EDIT screen and use the **SEMI** and **FINE** parameters on one layer to change the tuning on all layers equally (effectively tuning the entire pad).



Remember to turn off 'Edit All Layers' afterwards.

WHY AM I SEEING INDIVIDUAL SLICES IN SAMPLE EDIT > TRIM?

After returning directly from the CHOP screen you might find that SLICE is set to a specific slice number:



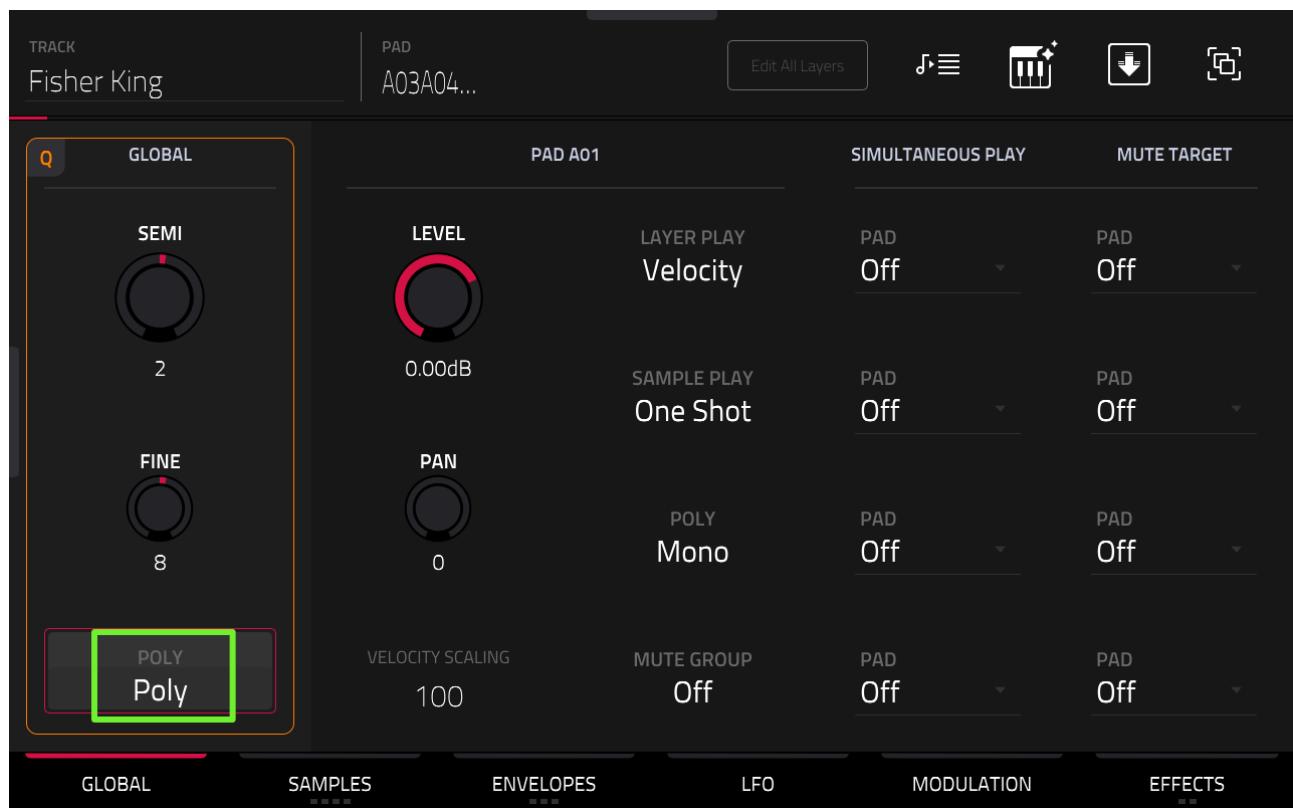
To edit the whole sample, simply set **SLICE** to **ALL**.

WHY ARE SOME PROCESS OPTIONS NOT AVAILABLE IN SAMPLE EDIT?

Some processing options won't work on individual 'slices' (e.g. time stretching, discard) so if you are editing a slice rather than 'SLICE:ALL' these options will be missing from the **PROCESS** page, even if you accessing it from the TRIM screen.

WHY ARE MY PADS CUTTING EACH OTHER OUT?

Most likely you are using a 'chopped' kit generated from one of the '**CONVERT**' options in **SAMPLE EDIT > CHOP**. These automatically set your resulting track to monophonic (**MONO**) playback – in these tracks, only one pad can play at any given moment in time. If this is not the effect you want, go to **TRACK EDIT > GLOBAL** and change track **POLY** to '**Poly**'.



HOW DO I FINE TUNE A PLUGIN?

Sometimes you may find yourself working with samples that are not at standard '**concert pitch**' which means they have to be slightly re-tuned to sit nicely with all your existing plugin and keygroup instruments. However, some people prefer the vibe of working with samples that are a little off from concert pitch, in which case you need to tune all your instruments to match your sample.

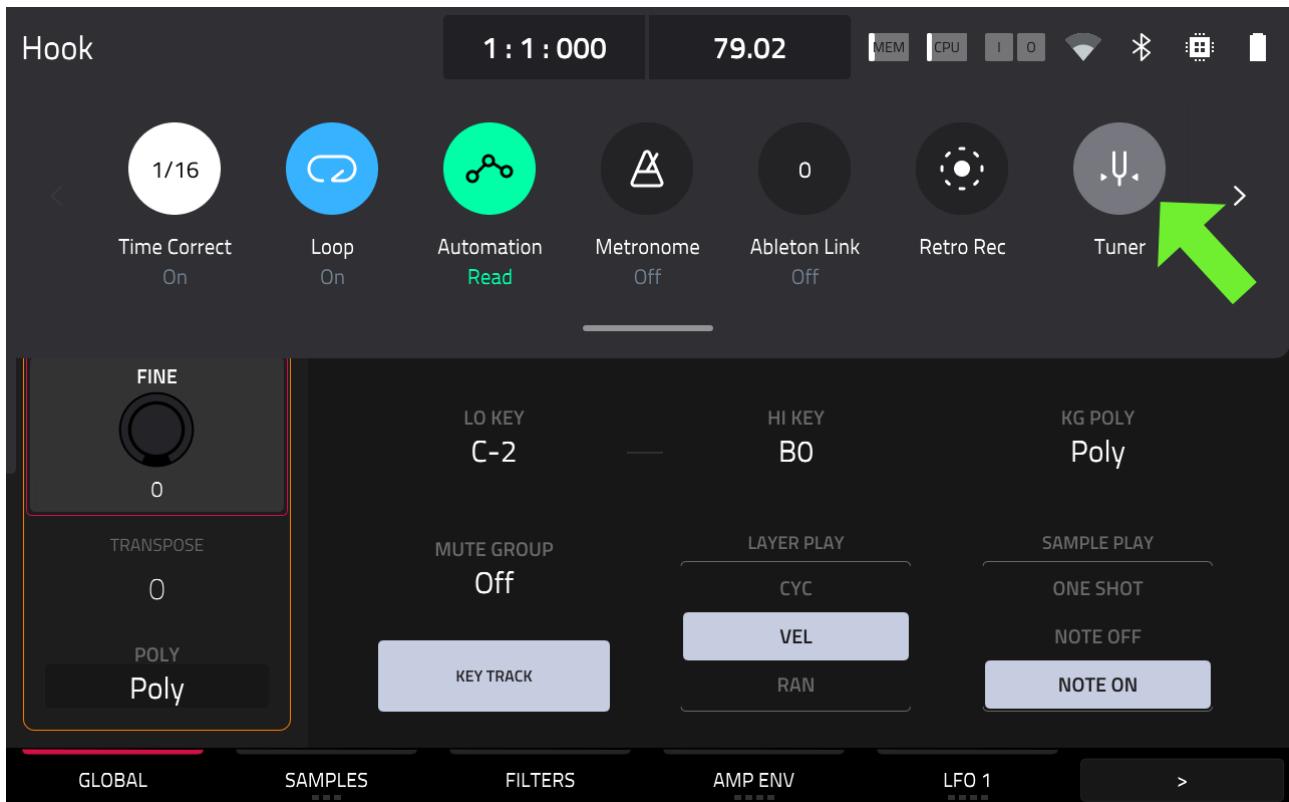
However, Akai synth plugins are normally fixed at 'concert pitch' and don't normally have a master global tuning option. Workarounds include:

- **Autosample** the plugin and fine tune the resulting keygroup track
- Insert a **pitch bend event** into the track via **LIST EDIT (Insert > MIDI Automation > Pitchbend)**. Set the pitch bend to fine tune the output of the plugin.
- Use **AIR > Pitchshifter** to change the pitch of the plugin (this will have some impact on the sonic quality and timbre of the plugin's sound).
- Similarly, you could try **AIR > Vocal Tuner** which allows you to change the concert pitch value from 440Hz. Again, this will have some impact on the sound.

HOW DO I TUNE A KEYGROUP INSTRUMENT WITH THE TUNER?

Go to **TRACK EDIT > GLOBAL** where you can use the '**FINE**' control in the first **GLOBAL** column to re-tune the entire instrument to match the tuning of

your sample. Notice that on this screen, the FINE control is accessed by (Q-LINK 9). Now 'pull down' the **top menu** and hit the **TUNER** icon:



Set **INPUT CHANNEL** to **Resample L+R** and set the **FREQUENCY OF A** to match the tuning standard (e.g. **440** = concert pitch).



Hit a pad on your keygroup instrument and tweak (Q-LINK 9) until you get the tuning as close as possible to **0.00 ct** – it's often almost impossible to get exactly 0.00, but +/-0.2 is definitely good enough!

CAN I OVERDUB TO AN AUDIO TRACK?

No, the only screen where audio overdubbing is possible is the **LOOPER** where you can continually overdub over the same looped region. Overdubbing in the looper is a 'destructive' type of overdub as it is not possible to separate the layers that you build here, it just becomes one composite audio file.

A workaround when initially recording to an audio track is to create an additional audio track and record your effective 'overdub' to this second track. This has the advantage of keeping the layers completely separate, allowing you to mix and individually mute each layer. *Remember you are limited to 8 audio tracks per project.*

D04 FILE MANAGEMENT FAQS

Frequently asked questions relating to file management and the browser.

HOW DO I MOVE FILES OFF THE INTERNAL DISK?

It's easy to accidentally save projects and other files to the internal factory disk, but as the internal disk is not accessible from a computer this makes it tricky to backup or access that content from outside the MPC.

If you have a project on the internal disk, load it into memory and go to **SAVE > Project As** and save it to a new location. Delete the old project from the internal disk to free up some space.



Never let your internal drive fill up as it can cause your MPC to become unstable.

If you've saved kits or samples to the internal disk, load them into memory and save them all into a single project onto a removable drive.

CAN I USE DISK STREAMING ON INSTRUMENTS AND KITS?

Yes, go to **MENU > PROJECT**, tap and hold on a sample and manually assign it to '**Stream from Disk**' – repeat for all the samples in your instrument and then re-save your project. Just be aware that Akai do not recommend this as it's fairly easy to create a disk bottleneck by using busy sequences, or using too many sustained notes. In these cases your sequence will simply drop those notes, leaving silence.

CAN I SAVE MEMORY USING MP3S OR OTHER COMPRESSED FILES?

No, once loaded into memory all samples are converted into 32 bit float audio, regardless of their original audio format. So a 5 minute stereo mp3 sample will use the same memory as a 5 minute stereo WAV sample.

Do however consider using FLAC files to save disk (storage) space – these are uncompressed like WAV files but are more optimised and use significantly less storage space.

HOW DO I INSTALL AN XPN EXPANSION IN STANDALONE?

Expansions created for the MPC Software use a special installer in '**XPN**' format. To install these XPN format expansions into standalone MPCs you have two options:

1. Drag the XPN into the MPC Software and after installing, go to **File > Export > Expansion** and export to your MPC disk (just make sure it's connected via Controller mode)
2. Alternatively, drag the XPN file into your favourite compression application, such as 7zip. You might need to change the file extension to **'.zip**' first. Now extract the contents to a folder (the exact name is unimportant, just name it after the expansion). Copy this folder inside the '**Expansions**' folder on your MPC disk.

WHY DON'T MY BROWSER 'FOLDER' SHORTCUTS WORK?

Sometimes when you press a browser shortcut folder it does nothing. In these cases, quickly hit any other shortcut folder and then tap the original shortcut folder and it should work fine.

WHAT'S THE DIFFERENCE BETWEEN AN 'XPM' AND 'TRACK' FILE?

A **track file** is an MPC3-specific file that saves all settings, samples, macros, FX and MIDI data associated with a track. A track consists of two elements; the track file itself (**.xtd** for DRUM tracks, **.xty** for KEYGROUP tracks) and a **trackData** folder containing the samples used within the track. It's a complete snapshot of an entire sequencer track, and re-loading this to a track will exactly recreate the original track.

An **XPM** file is an MPC2 'program' file which in many ways is similar to a track. For example, a drum kit saved in XPM format contains all the pad mappings, envelope, filter and LFO settings, FX and 'track Q-LINK' settings.

It does not however contain any MIDI data, no advanced macros nor any other settings which relate to MPC3-only features. The samples used in an XPM program are not stored in a separate folder, they are instead placed in the same folder as the XPM file itself.

If you only work with MPC3, save the **track file**. If you intend making kits and instruments that can be loaded into MPC2 (and the Akai Force 3.3 or older), then save as an XPM file.

CAN I LOAD MPC3 PROJECTS IN MPC SOFTWARE 2?

No, MP3 projects are not backward compatible, neither are MPC pattern files (**mpcpattern**) made in MPC3 , nor track files. **XPM** and **MIDI** files should work fine.

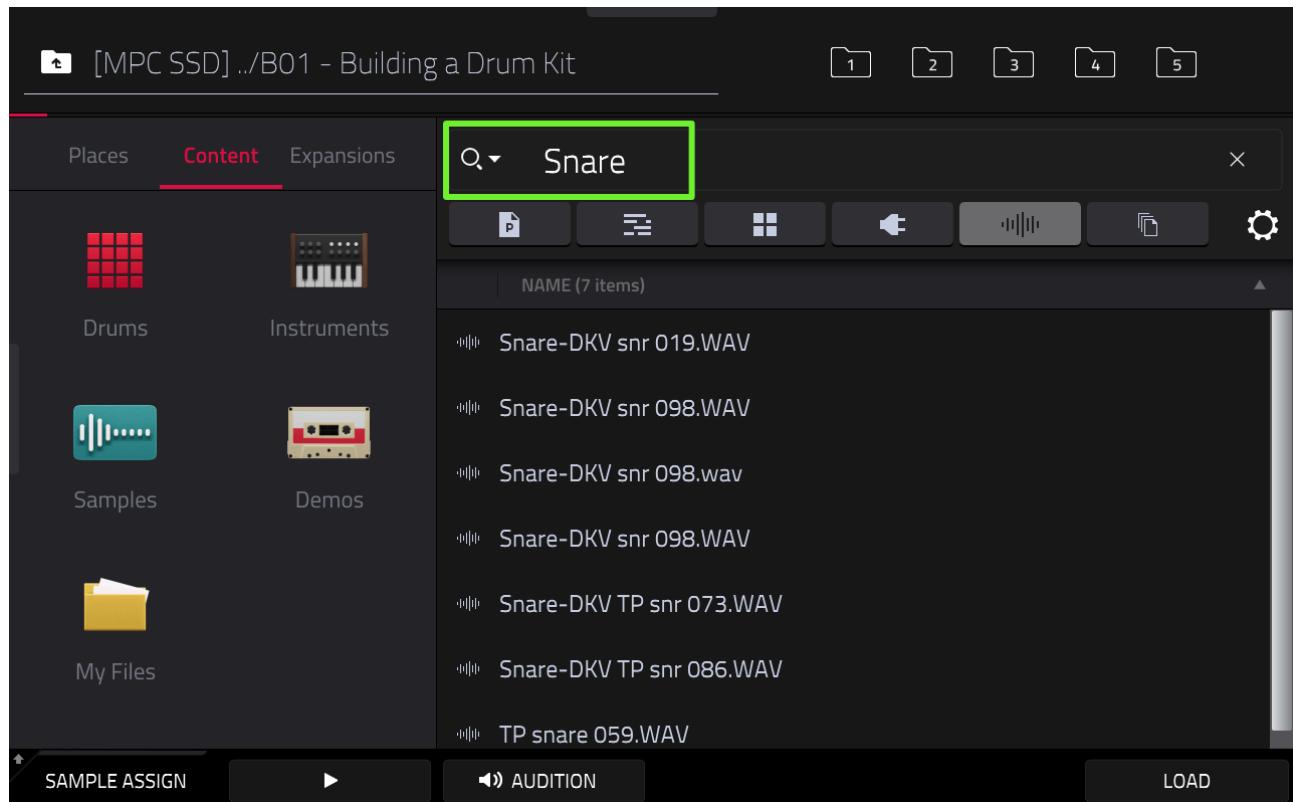
WHAT IS SAMPLE TAGGING?

Sample tagging refers to naming your files with keywords that help identify particular attributes of that file. For example, a kick drum can have a name like '**Kick-808 kik01.wav**' where the 'tag' is 'Kick'. A drum kit could be called '**Kit-Hiphop-Crushed Drums.xtd**' where the tags are 'Kit' and 'HipHop'.

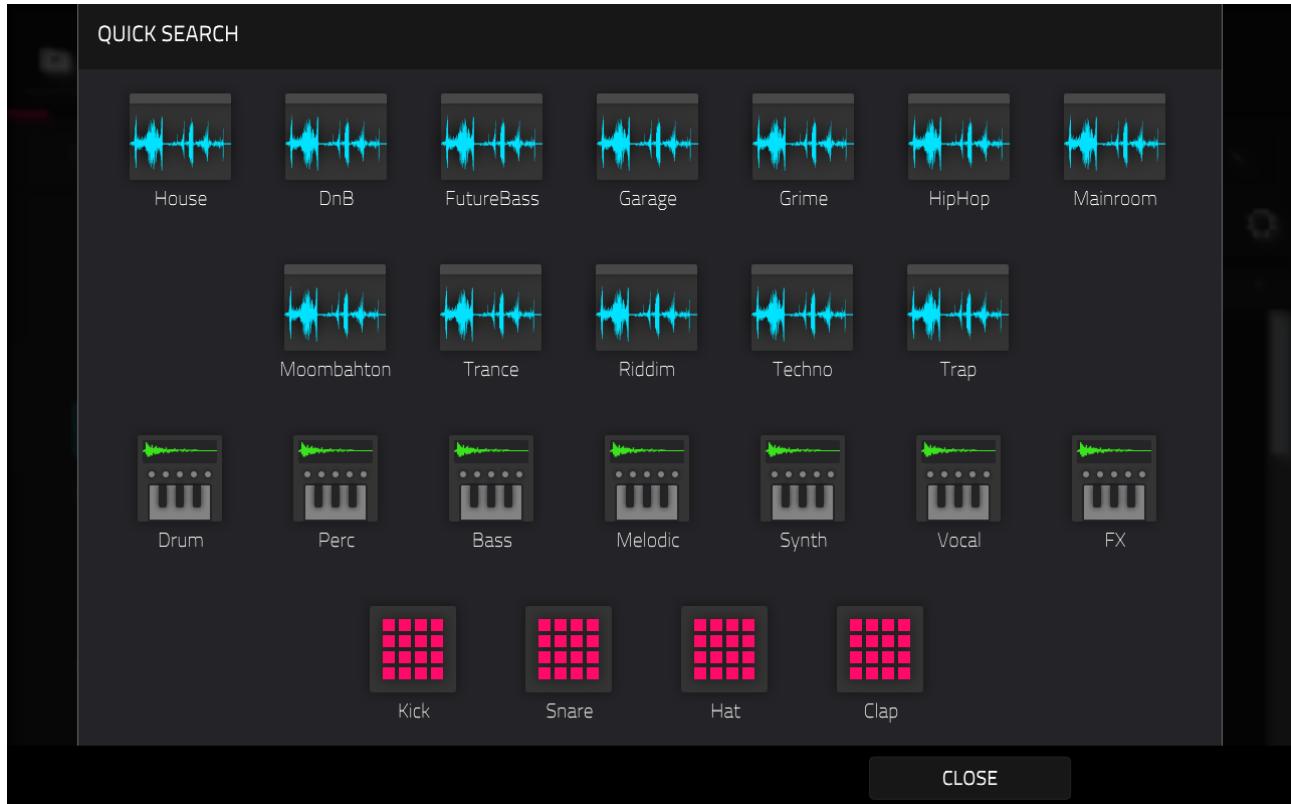
You don't have to use hyphens to separate tags, you could use a space instead.

With the tag in the file name you can use the '**Search**' box in the browser to easily find a particular type of sound, kit or instrument – it will return any

files that contain the search phrase, both in the current folder and within any sub folders within that folder.



Sample tagging is optional and there's no specific tags that you must use, so just use whatever tags suit your search habits. That said, Akai provide some ready-made 'quick search' tags from the down arrow icon on the search box:



DOES PURGING DELETE SAMPLES FROM MY DISK?

No, purging (**MENU > PROJECT > PURGE**) only removes samples from the currently active 'sample pool' of your project. The default action is to remove samples that are currently not assigned to any track, but you can also remove 'all samples' from memory if you wish.

Purging is purely a way to free up memory usage in your project, it does not touch any samples stored on your disk – these will always be there unless you choose to manually delete them.

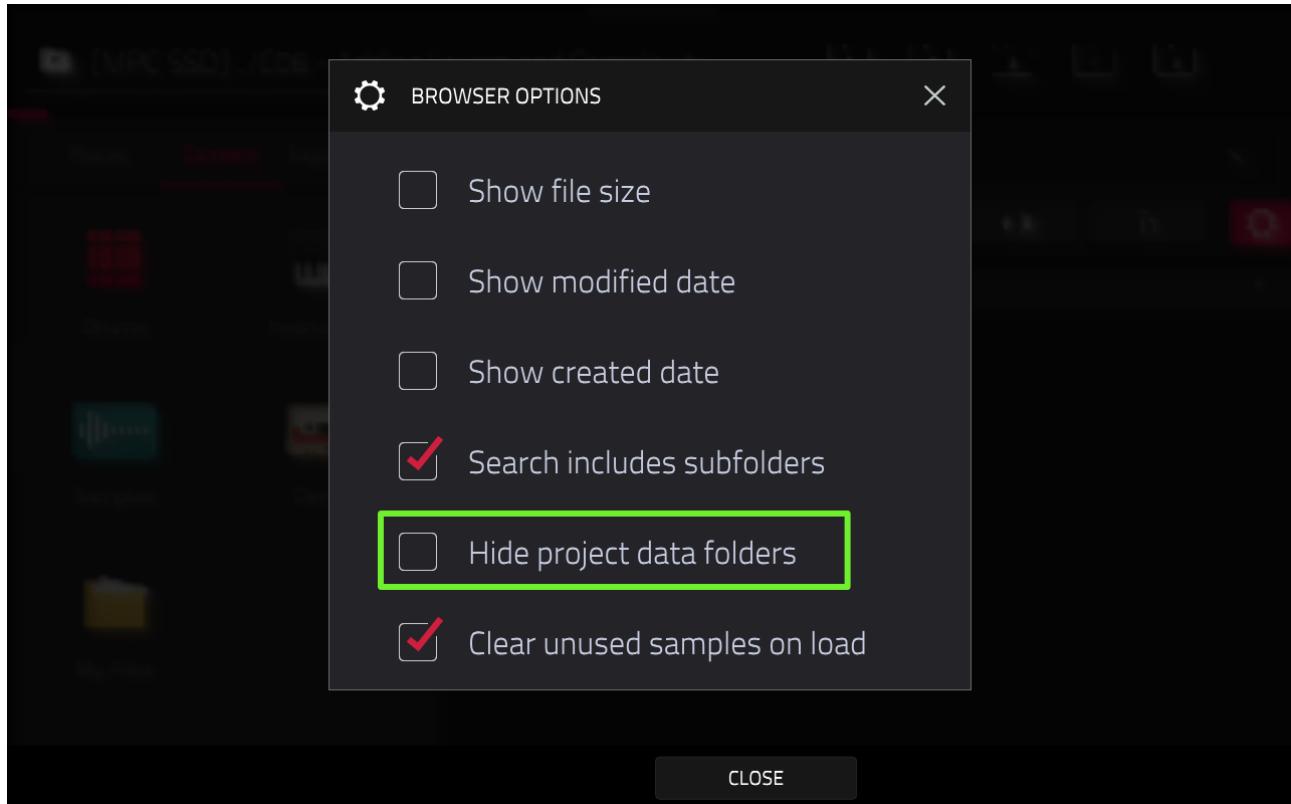
HOW DO I REDUCE THE DISK STORAGE SPACE USED BY PROJECTS?

Each time you save a project, all the samples in memory at the time of saving are saved to the **projectData** folder for that project. If you subsequently purge any of those samples from memory, the original samples are still stored inside the projectData folder, even though they no longer form an active part of the project.

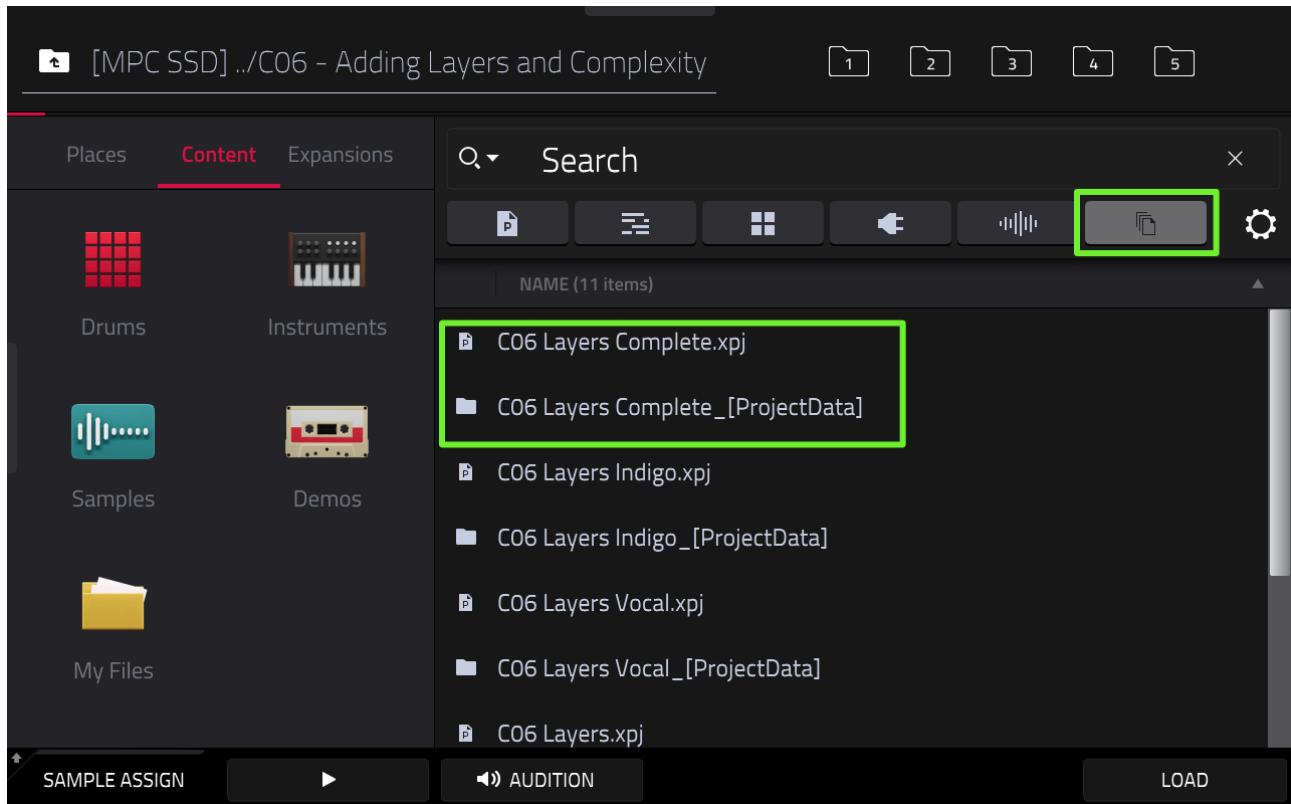
This can be useful as a type of backup 'archive' of every sample ever used in that project (for example you might want to re-visit a sample you purged from the project a long time ago). However if you are continually adding new samples to a project, saving and then purging, the projectData folder can eventually get quite large.

In these cases, consider re-saving the project with a modified name; this new version of the project will only contain the samples currently in active memory. You can now head over to the BROWSER and delete the old project from disk to free up the storage space.

Remember to use the **GEAR** icon to uncheck '**Hide project data folders**':



Additionally, select the '**ALL FILES**' filter and all the projectData folders and XPJ files will be revealed.



Use **[SHIFT]** > **DELETE FILE** to delete both the **projectData** folder and **XPJ** file.

D05 MAKING BROWSER PREVIEWS

Browser previews give you a quick demo of how a kit, instrument or project sounds without having to first load it into memory - in this tutorial we'll look at how to easily create previews for all files on your disk.



Please note that this guide does not require any specific files, just load up one of your own existing projects and use this guide to create some browser previews from the kits and instruments within it.

HOW DO I MAKE BROWSER PREVIEWS?

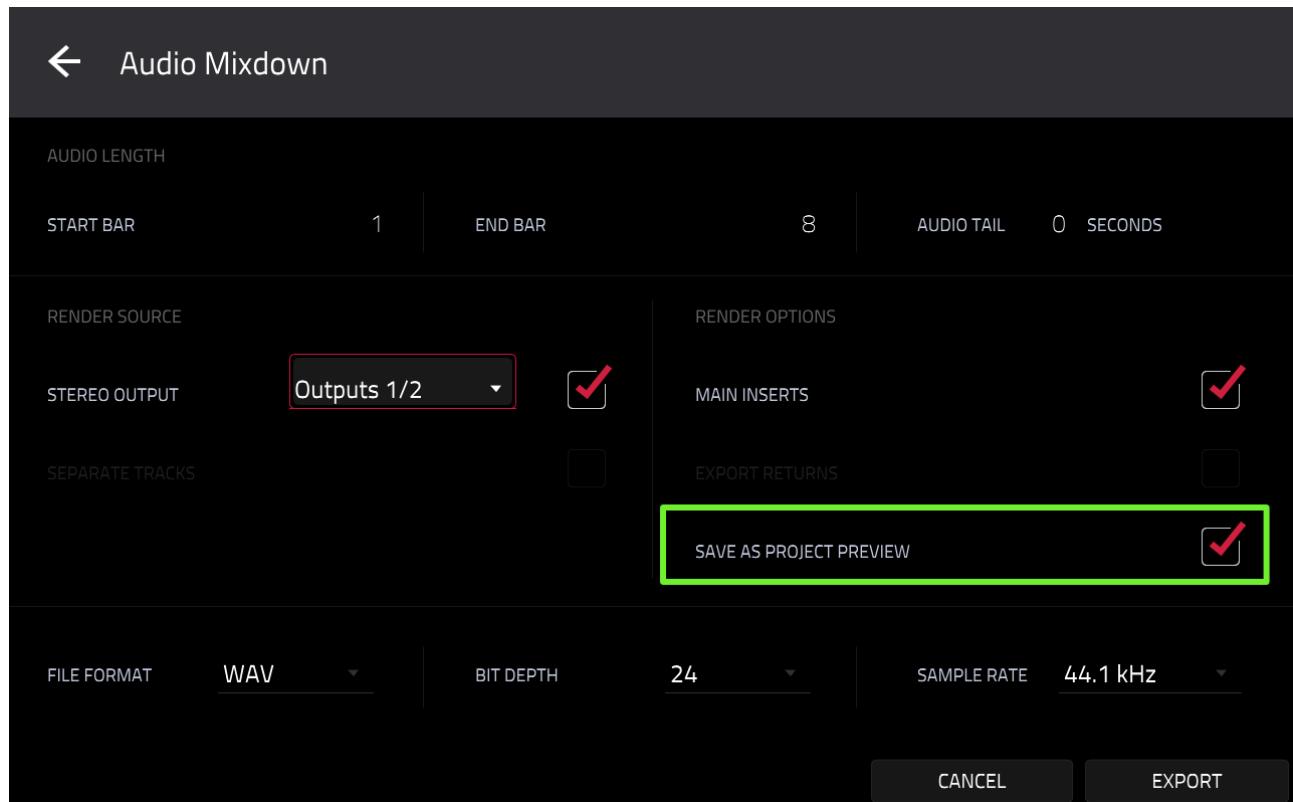
'**Browser previews**' are the snippets of audio that you may have heard play when you tap on a kit or instrument when browsing through a commercial expansion. However you can actually set up your own browser previews within any folder on your disk, it doesn't need to be part of an expansion.

These previews are not generated automatically and have to be specifically created and then 'attached' to your files.

ADDING A PROJECT PREVIEW

This is the easiest browser preview to create and the only one that doesn't require a computer.

First, go to the **BROWSER**, and load up one of your own projects. Select any sequence, go to **SAVE > Audio Mixdown** and check '**SAVE AS PROJECT PREVIEW**':



Hit **EXPORT** and the resulting mixdown will be automatically used as the browser preview for your project. If you ever want to replace the project

preview, carry out the same procedure again but with a different or updated sequence from the project.



*To hear the preview, just tap on the **XPJ** file in the **BROWSER** and press the '**PLAY**' button in the bottom menu bar - alternatively hit the **AUDITION** button and set this to **AUTO**. Now your previews will play automatically each time the file is selected*

ADDING A TRACK PREVIEW

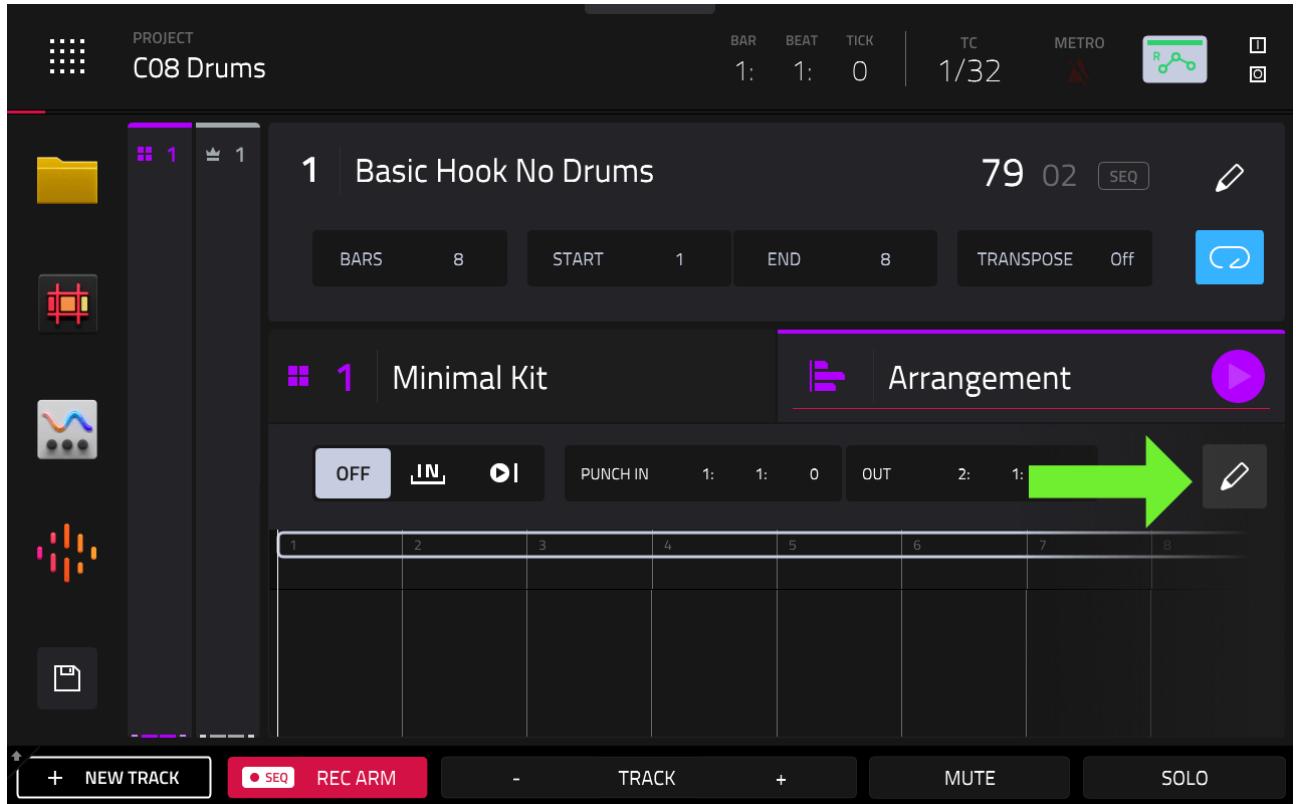
Let's say you've created a nice drum kit and was to save it on your disk so you can re-use it in other projects and would like to hear an audio preview each time you click on it to remind you what the kit sounded like.

In your project, select the track containing the kit and record a short (2 or 4 bar) MIDI performance with the kit.

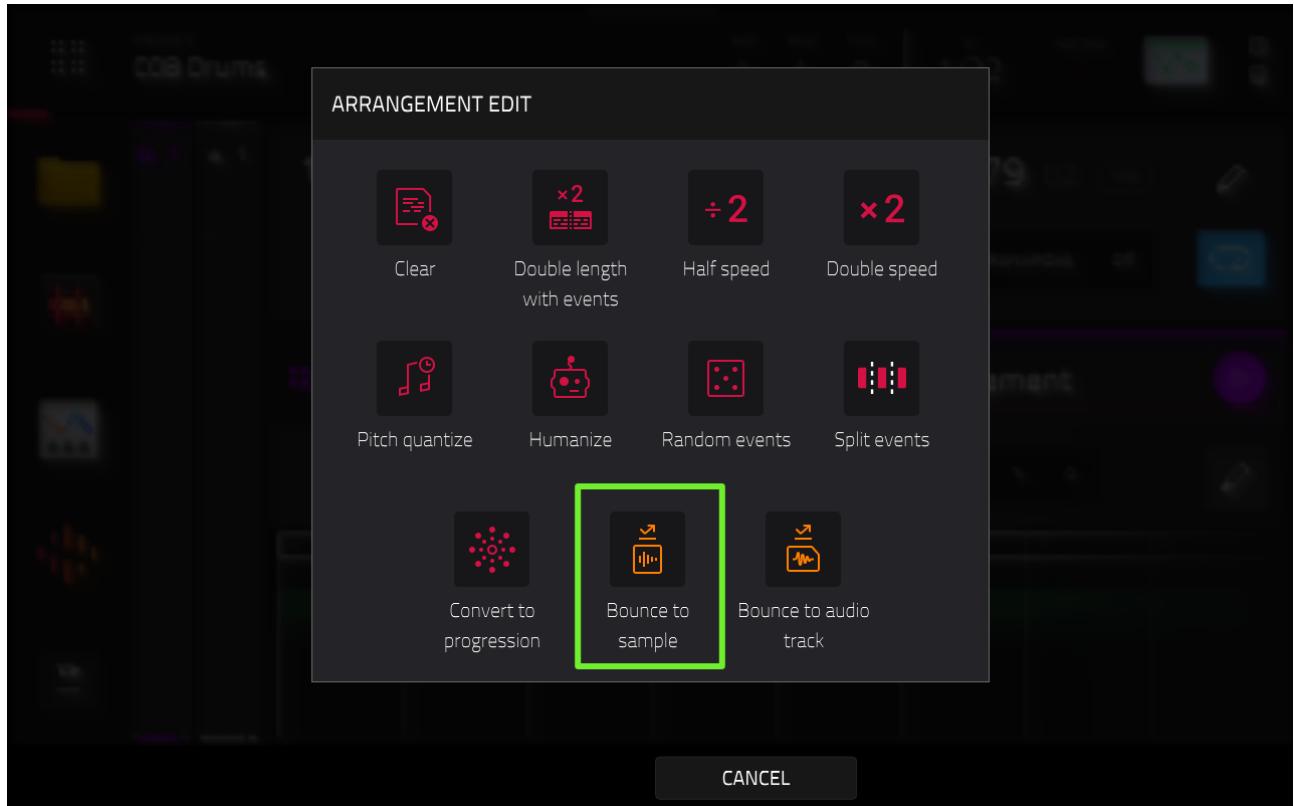
Now save this as a 'track file' - **[MENU]** > **SAVE** > **Track**. As I've mentioned previously in the course, it's a good idea to have a folder on your MPC disk that is dedicated to storing these 're-useable' elements, be it kits, instruments or MIDI patterns. It's also important that this folder is not on the 'internal' disk as we need to be able to access it from a computer.

So for example, save a kit to the folder '**Sound Library** > **Drum Kits**' - let's use the example name '**Minimal Kit.xtd**'. Now return to **[MAIN]**, select the **Arrangement** tab and hit the **track pencil**:

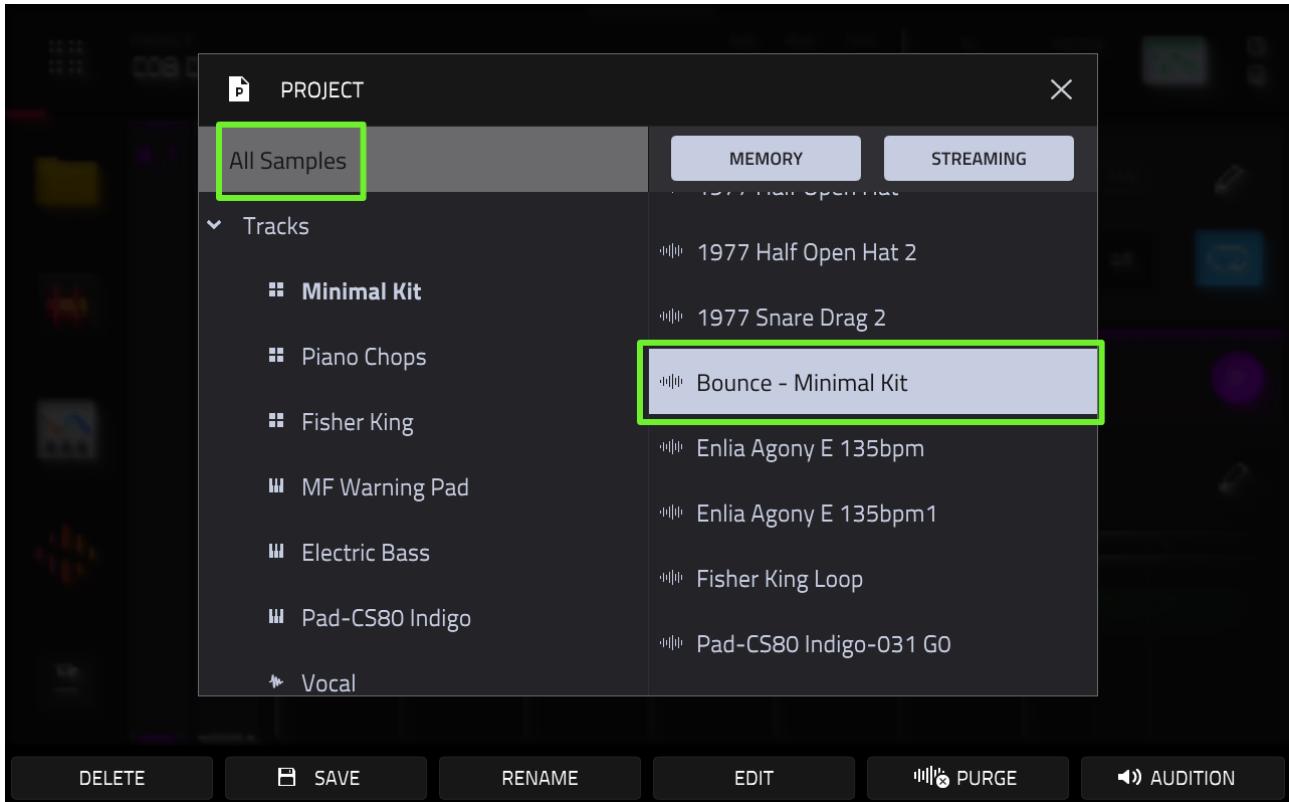
D05 MAKING BROWSER PREVIEWS



Select '**Bounce to Sample**' to create a mixdown of this specific track:



The bounced samples is placed into your project sample pool, so now go to [MENU] > PROJECT and select '**All Samples**'



Tap on the bounced sample '**Bounce - Minimal Kit**', hit **SAVE** and save it to the same folder that your Minimal Drum Kit track file was saved to. Repeat for any other kits.

You can also do the same with 'keygroup' tracks. Again, record a short MIDI 'performance' using your custom keygroup track and save your keygroup track file (**XTY**) to your '**Sound Library > Instruments**' folder on your MPC disk. Create an audio bounce of the track in the same way you make the drum track bounce sample. Save your bounce sample to the '**Instruments**' folder.

When you are done, connect your MPC via USB to a computer and go to [**MENU**] > **chip icon** > **CONTROLLER MODE** and your MPC disk should pop up as a removal drive in your computer – please refer to [chapter A02](#) for

more information about connecting to a computer for file transfer purposes.

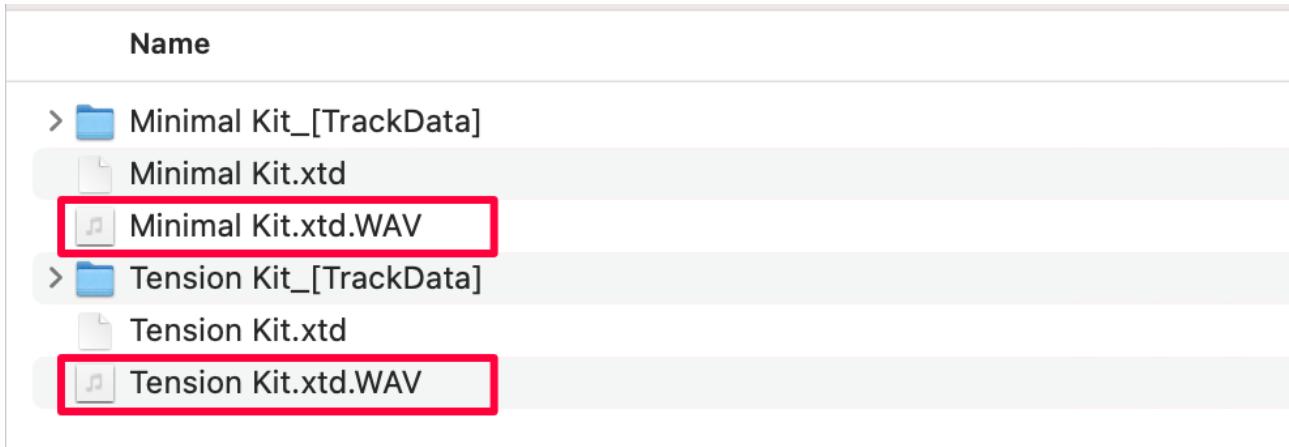
From your computer, select your MPC disk and enter the '**Sound Library > Drum Kits**' folder.

Name
Bounce - Minimal Kit.WAV
Bounce - Tension Kit.WAV
> Minimal Kit_[TrackData]
Minimal Kit.xtd
> Tension Kit_[TrackData]
Tension Kit.xtd

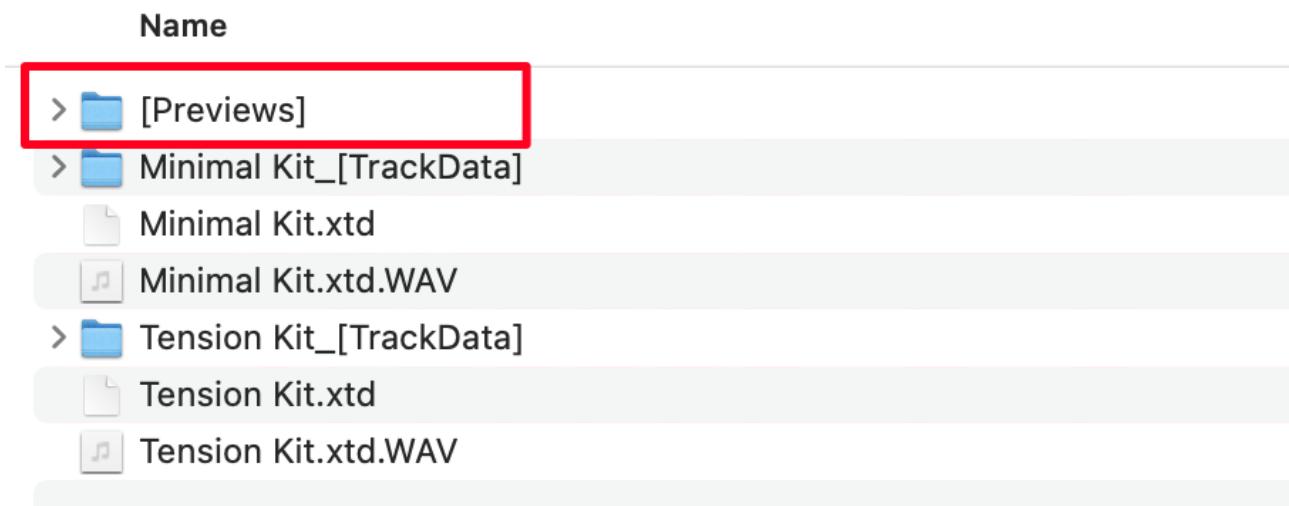
For each drum kit you saved you should see three files – for example:

- **Minimal Kit.xtd** – this is the first 'element' of the actual 'track' file.
- **Minimal Kit_[TrackData]** – this contains all the samples used in the track file
- **Bounce - Minimal Kit.wav** – this is your bounced audio mix down of the track

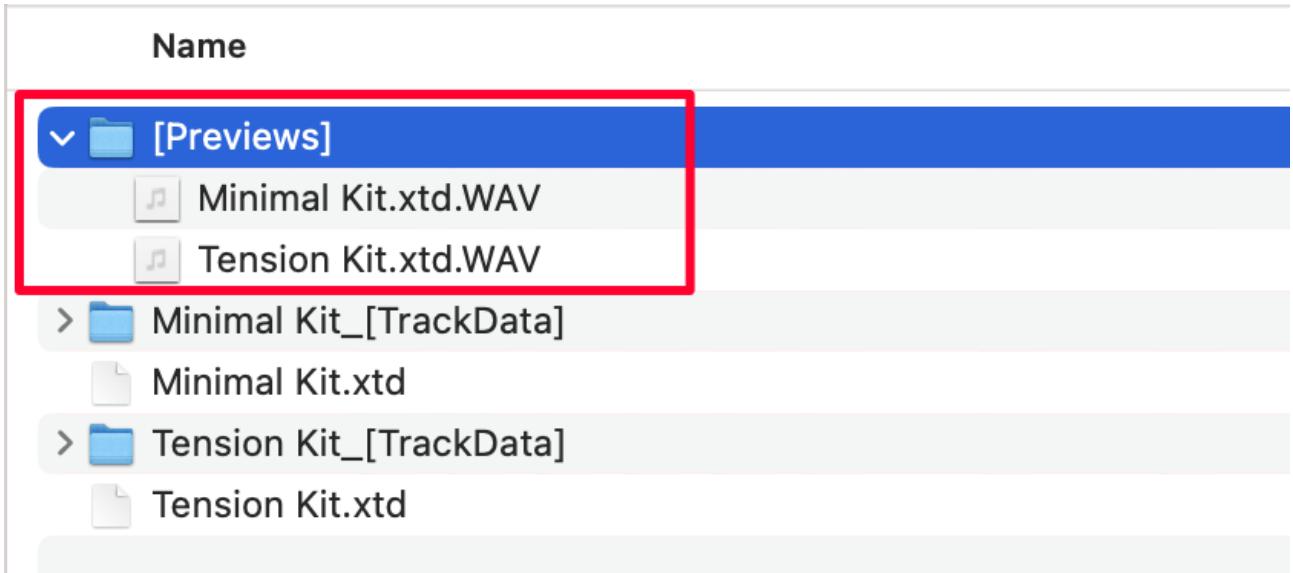
To associate the preview file with its track, rename '*Bounce - Minimal Kit.wav*' to **Minimal Kit.xtd.wav**. So that's the entire track name (including file extension) with **.wav** appended to the end:



Repeat this process for any other kits inside your **Drum Kits** folder. Now create a folder called **[Previews]** – include the square brackets and the capital 'P':



Now drag the WAV files inside the **[Previews]** folder:



Job done. When you return to standalone mode you'll hear the preview each time you tap on the kit (assuming **AUDITION > AUTO**).



*The **[Previews]** folder is always hidden within the MPC browser, so it's only possible to manage its contents within your computer.*

The process is the same for keygroup programs, except these have the XTY file extension, so the preview file must be in the format **instrument_name.xty.wav**

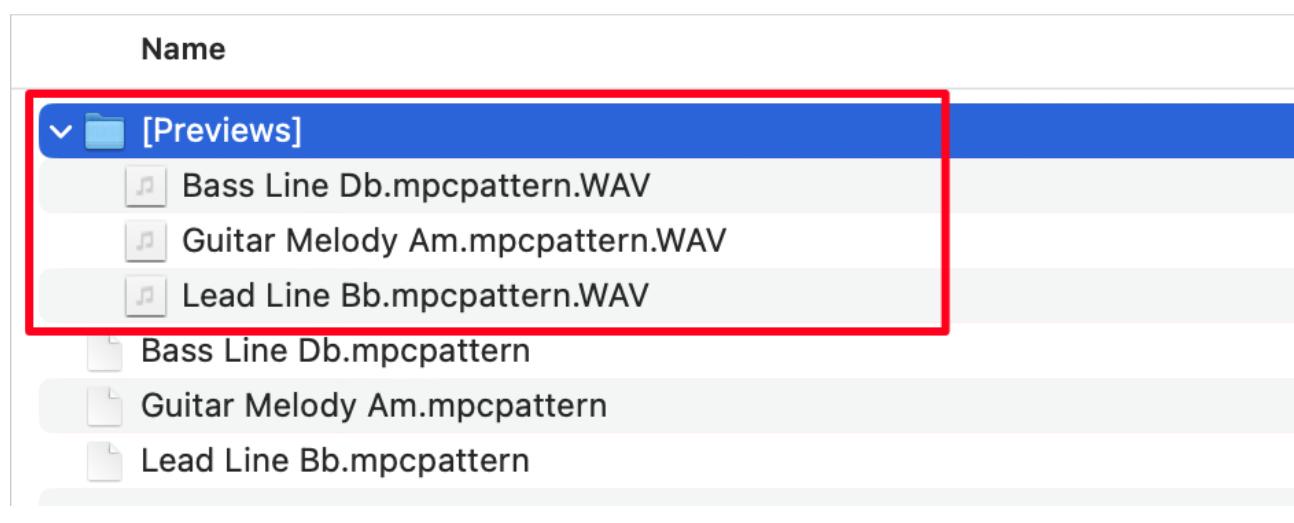
CREATING PREVIEWS FOR OTHER FILE TYPES

Previews can be attached to any file type, not just tracks and projects – I believe as long as the browser can load it, it can have a preview attached.

If you've written a nice melodic riff on a plugin or keygroup track, go to '**SAVE > Track as MIDI/Pattern**' and select '**EXPORT MIDI AS: Pattern**'.

Save the pattern inside a folder on your MPC disk, such as '**Sound Library > MIDI Patterns**'. Now return to **MAIN** and perform a '**Bounce to Sample**' on the track, saving the bounce file to your '**MIDI patterns**' folder.

Connect your MPC disk to your computer and rename the bounce files to match your patterns, e.g. **Bass Line Db.mpcpattern.wav**. Create a **[Previews]** folder and place your previews inside.



If you organise your files into sub folders, then each sub folder must have its own [Previews] folder to cover the files located within that particular sub folder only, it's not possible to place all your browser previews in one single centralised location.

You can also create previews for your favourite plugin presets, although in all likelihood you will save your custom presets to the 'User' category within the plugin itself, so it's not a file you would normally access from the browser. However, if you did want to create a folder of plugin presets for distribution, simply name your previews in the format '**preset_name.xpl.wav**'.



*While the 'bounce to sample' feature always creates WAV files, you can convert to other formats within your computer if you prefer (e.g. using software like Audacity). The MPC supports the uncompressed formats **FLAC**, **WAV** and **AIF** and 'compressed' formats **MP3** and **OGG**.*

06 HARDWARE & SYSTEM FAQS

This article covers common questions relating to system and hardware topics.

WHAT DOES 'RESET PREFERENCES' ACTUALLY DO?

It resets most (but not quite all) of the changes you may have made in the MENU > PREFERENCES screen. Settings like project defaults, pad sensitivity, default plugins, auto save settings etc. Resetting can sometimes fix random glitches after a firmware update – just remember you'll have to reapply all your favourite settings after resetting.

SO, HOW DO I 'FACTORY RESET' MY MPC?

The MPC does not feature a complete 'Factory Reset' option, but you can carry out the following steps to effectively take the software back in time to its original 'out of the box' state:

- **Reset User Preferences** – Go to PREFERENCES > INFO > RESET PREFERENCES to perform a reset of your user preferences
- **WIFI** – 'Forget' all your added WIFI network passwords
- **Bluetooth** – 'Remove' all your paired Bluetooth devices

- **Splice** – log out of your Splice account
- **Activations** – log out of your inMusic account on this screen
- **MPC Documents** – in the BROWSER, 'SHIFT > DELETE FILE' for any user added content (projects, tracks, etc).
- **Firmware** – if you want to go this far (I think this is overkill), download the earliest firmware you see listed for your specific model [here](#), copy it to a USB stick and from PREFERENCES > INFO > UPDATE > 'USB Drive Update' (see below)

HOW DO I MANUALLY UPDATE MY FIRMWARE?

If you prefer not to have your MPC 'online' you can install new firmware updates via USB. You can also use this method to downgrade to an older firmware version (if you find the current firmware is just too buggy for you).

First download the desired firmware image file from [Akai's firmware download page](#). You'll see three downloads for each firmware:

MPC Key 37

VERSION - **3.4.3**

MAC

Version 3.4.3

 DOWNLOAD

PC

Version 3.4.3

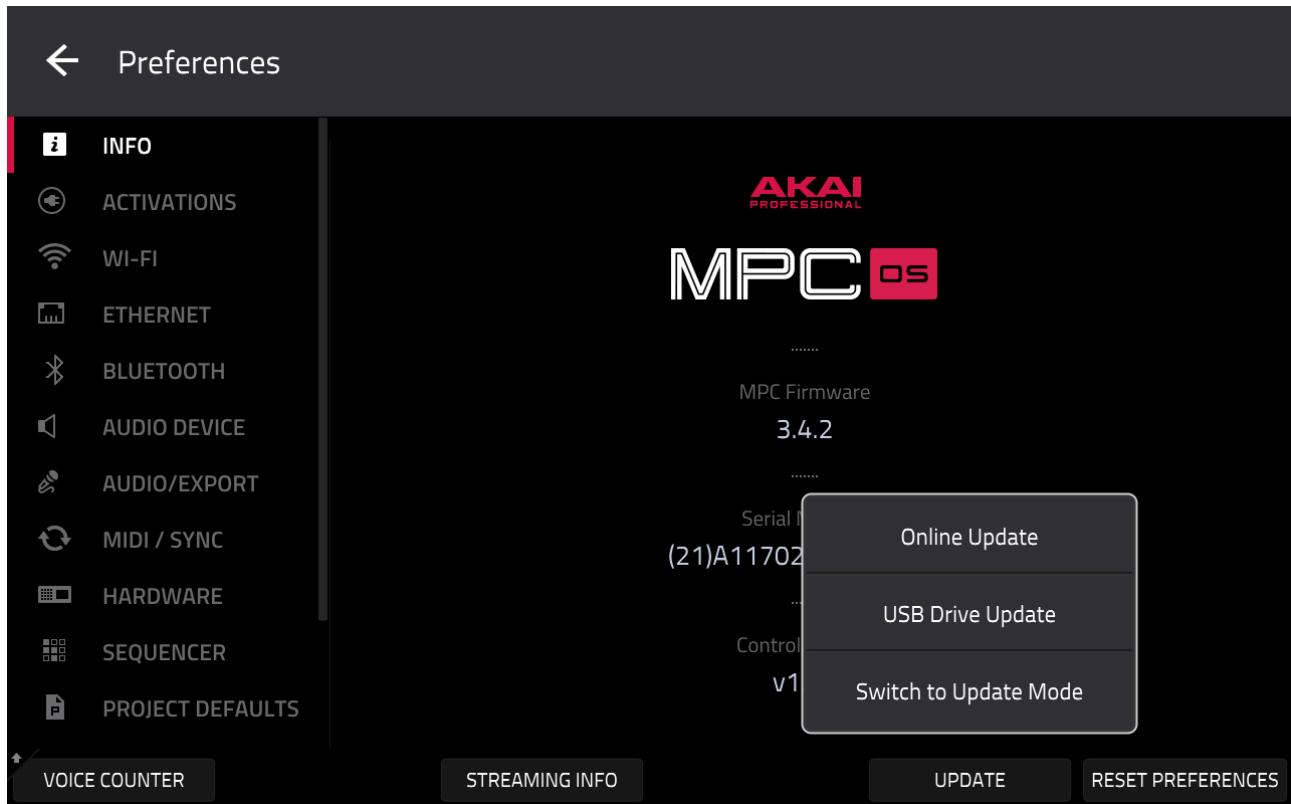
 DOWNLOAD

USB

Version 3.4.3

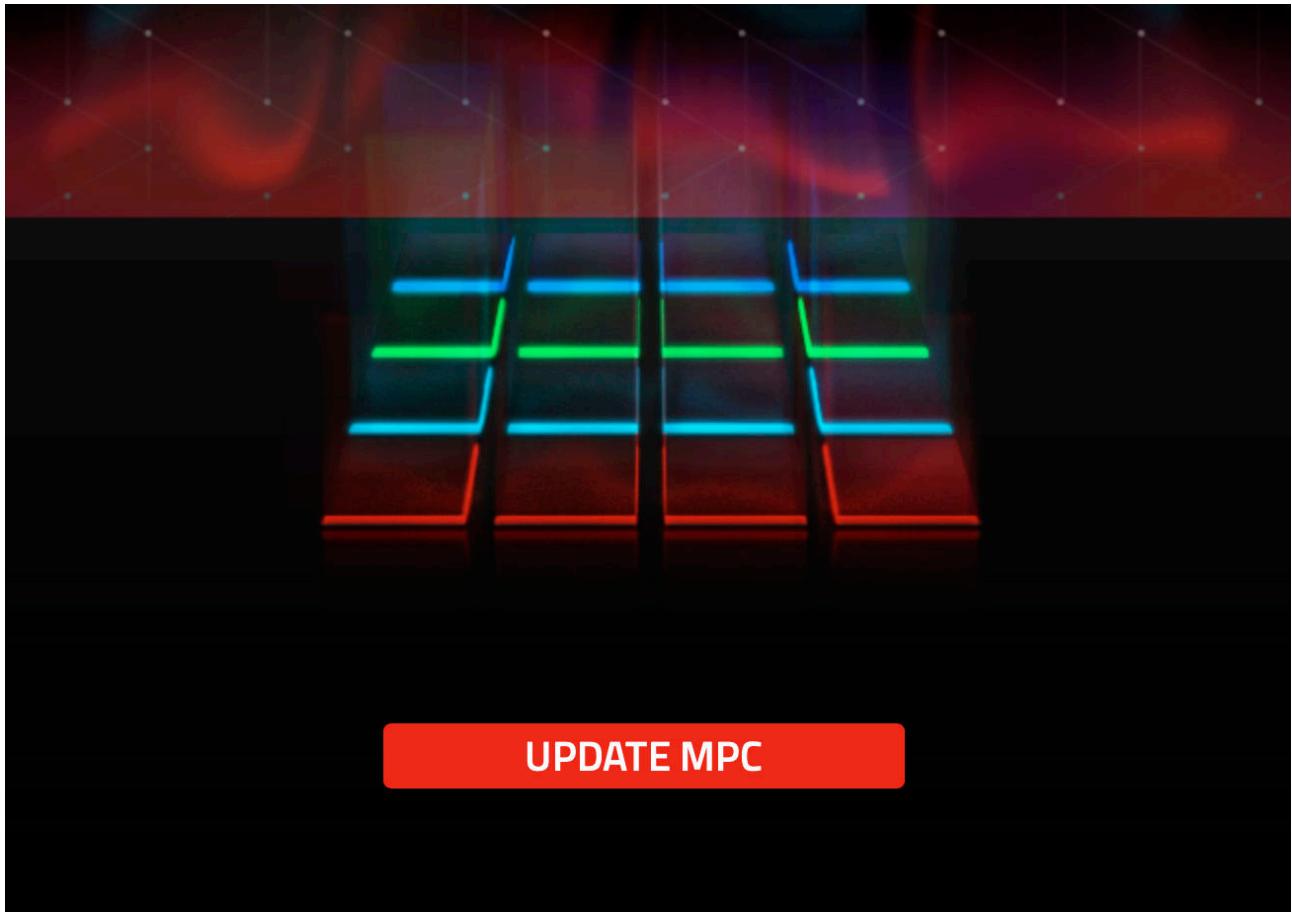
 DOWNLOAD

I generally prefer the USB drive option; simply download the **USB** image file and transfer it to the root location of a portable USB drive (e.g. USB flash drive). Don't try to open the .img file on your computer as you'll get an error. Now pop the USB flash drive in your MPC USB port and go to **PREFERENCES > UPDATE > USB Drive Update**.



Follow the instructions and eventually the MPC automatically reboots into the new firmware (it can take a few minutes, be patient, don't switch off power!). Go to **MENU > PREFERENCES** to check the firmware version.

Alternatively, download the **MAC** or **PC** application and run it - you'll see the following:



Now connect your MPC to your computer via USB and from the **PREFERENCES > UPDATE** page, select '**Switch to Update Mode**'. Now back on your computer hit **UPDATE MPC** and follow the instructions to perform the update.

WHICH FIRMWARE UPDATE METHOD IS SAFEST?

Strictly speaking, the 'update' options are really just initial 'file transfer' options – they just determine how the firmware image is initially copied to your MPC; be it online download, copied from a USB drive or sent to the MPC via USB cable.

The *actual* updating process doesn't begin until the firmware image has been fully transferred and checked by the system. At this point the transfer method you selected is irrelevant.

So all three methods are equally 'safe'. Just be aware that a firmware update always carries some risk – for example, if you were unfortunate to have a power cut in the middle of an update you might potentially 'brick' your MPC.

WHAT HAPPENS IF I BRICK MY MPC AFTER A FIRMWARE UPDATE?

This is very, very unlikely, but if you somehow do brick your MPC (e.g. power cut mid-update) hopefully when you boot up it should default into 'UPDATE MODE' – in which case, connect it via USB to a computer and run the Mac or PC updater with the latest firmware image.

You can also try forcing update mode by holding down the following buttons while powering on

MPC Live / MPC Key: **[BANK C]** + **[FULL LEVEL]** + **[ERASE]**

MPC One: **[FULL LEVEL]** + **[BROWSE]** + **[BANK C]**

MPC X: **[16 LEVEL]** + **[NEXT SEQUENCE]** + **[BANK C]**

Otherwise, open a support ticket with Akai for advice on how to force your particular MPC into 'update mode'.

CAN I DOWNGRADE TO MPC2?

Yes, if you really hate the MPC3 workflow, or prefer to work back and forth with the MPC Software (which is currently still at MPC2) you can downgrade your MPC firmware to any MPC2 version that is supported by your MPC model. Please note that any new MPC model released from 2025 onwards is unlikely to support MPC2! After downgrading you can still go back to MPC3 if you wish.

To downgrade firmware, simply follow the USB firmware updating process listed previously. [Get in touch](#) if you're interested in my older MPC Bible 2 course which was made specifically for MPC 2.x.

Remember, MPC 2.x is no longer officially supported by Akai, so don't expect any further bug fixes!

MPC ONE ETHERNET – HOW DO I GET ONLINE?

If you have an original MPC One, there was no wifi support so to update your MPC or perform any other network based tasks (e.g. Splice, plugin activations etc) you needed to use the ethernet port on the back of the MPC.

The problem is finding a nearby ethernet port to connect to! You can run a physical ethernet cable from your internet router to your studio but this can be quite an epic or impractical task. Another option is to install a second WIFI router in your studio which piggybacks off your primary WIFI network (e.g. wifi extender, mesh router etc) - you can then connect your MPC to the ethernet port at the back of the second WIFI router.

My preferred option is to create a **Powerline network**. Just plug one adapter into an electrical socket near your router and connect its ethernet port to a port on your router. Then plug a second Powerline adapter to an electrical outlet in your studio and plugin your MPC into the ethernet port on this second adapter. Even the most [basic Powerline system](#) should be fine for MPC requirements.



Some MPCs seem to suffer from problematic wifi connectivity, so an ethernet connection can sometimes be the best option for these MPCs as well - if your MPC doesn't have an ethernet port, connect a '[USB-to-Ethernet' adapter](#) into a spare USB port on your MPC.

WHAT IS THE MPC SOFTWARE?

The [MPC Software](#) is a software application you can install to a Mac or PC that provides a DAW style version of the MPC which also supports third party VST plugins; when you buy MPC hardware, you receive a license for the MPC Software (grab it in your [inMusic account](#)).

At the time of writing MPC Software is still stuck at 'MPC 2.x' and has not been updated to MPC3 yet, hence it cannot load MPC3 projects. So for most users of MPC3, it's generally not recommended to use MPC Software unless you have a very specific reason to do so.



You may also have heard of [MPC Beats](#) – this is just the free, but feature-limited version of the MPC Software.

WHAT IS CONTROLLER MODE?

Launch the MPC Software on your computer and then connect your MPC via USB and enter **MENU > CONTROLLER MODE**. At this point your standalone MPC becomes a 'controller' for the MPC Software DAW – so you can use all the hardware buttons and dials and control the software functionality using the touchscreen UI.

However as MPC Software is still stuck at MPC 2, controller mode currently uses the old MPC2 touchscreen UI, and of course is limited to MPC 2 features and workflows with no support for your MPC3 projects.

Hopefully MPC Software 3, and hence support for MPC3 controller mode is coming at some point in 2025...

APPENDIX A: ESSENTIAL SHORTCUTS & PREFERENCES

BUTTON COMBINATION SHORTCUTS

In this section I wanted to list some of the undocumented button combinations that I have come across (please let me know if you discover any others and I will add these in the next edition).

Please note that you can often replace [**SHIFT**] with a 'quick double tap'.

[**MENU**] + **pad**: mode shortcuts (mirroring the 16 pad grid in MENU, where pad 1 = NEXT SEQUENCE etc)

[**SHIFT**] + (DATA WHEEL): change some parameters with finer resolution

[**SHIFT**] + [**PLAY START**]: Metronome on/off

[**SHIFT**] + [**STOP**]: Return sequence to beginning (1: 1: 00)

[**SHIFT**] + [**RECORD**] (or [**OVERDUB**]): Retrospective record

[**SHIFT**] + [**TAP TEMPO**]: Switch between global or sequence tempo

[**SHIFT**] + [**MAIN**]: Track View or Grid View (model dependent)

[**SHIFT**] + [**16 LEVEL**]: Notes/Pad Perform mode

[**SHIFT**] + [**MENU BUTTON**]: move through menu 'sub-screens' in reverse order, for example 'TRACK EDIT > SAMPLES' screens, 'TRACK EDIT > ENVELOPES' screens.

[**SHIFT**] + [**Q-LINK**]: change Q-link column in reverse order, or Q-LINK EDIT (preferences dependent) .

[SHIFT] + (Q-LINK) dial - change values in smaller increments (select screens only, e.g. pad mixer etc).

[SHIFT] + **[SCREEN CONTROL]** on MPC X

[SHIFT] + <**CURSORS**>: Zoom in and out of GRID VIEW (MPC X)

[SHIFT] + both up & down <**CURSORS**>: Default GRID magnification (MPC X)

BROWSER >**[SHIFT]** > **LOAD SEQUENCES** – loads any MIDI data stored in a 'track' file

'BUTTON HOLD' SHORTCUTS

Many hardware buttons on the MPC reveal pop up dialogs and other functionality when hold down for more than 1 second:

[TEMPO] - change sequence tempo

[REC] or **[OVERDUB]** - access recording settings & retrospective record

[MAIN] - quick track select

[MENU] - toggle between MENU and previous screen

[NOTE REPEAT] - quickly set TC & ARP

[FULL LEVEL] - replaces 'half level' with a custom user value (activate with **[SHIFT]** + **[FULL LEVEL]**)

[Q-LINK] - access Q-LINKS screen (**[SCREEN CONTROL]** on MPC X)

RECOMMENDED BROWSER SHORTCUTS

These are just suggestions, but follow the recommendations used throughout the course

- **Browser Folder '1'** - your 'Projects' folder

- **Browser folder '2'** – the MPC Bible Project Files folder
- **Browser folder '3'** – your 'Sound Library' folder
- **Browser folder '4'** – your 'Exports' folder (mixdowns, separated tracks etc)
- **Browser folder '5'** – leave free for future use

- **Sounds Browser > Drum Tracks > 'Drum Kits'** (shortcut to the Drum Kits sub folder inside your Sound library folder).
- **Sounds Browser > Keygroup Tracks > 'Instruments'** (shortcut to the Instruments sub folder inside your Sound library folder)

RECOMMENDED PREFERENCES

Essential '*non default*' settings to apply in the **MENU > PREFERENCES** screen as well as via 'gear icons' in various screens.

AUDIO/EXPORT > BPM DETECTION RANGE: 58 to 115 BPM

HARDWARE > FLASH TAP TEMPO LIGHT: uncheck

SEQUENCER > DISPLAY RESOLUTION: 996 PPQN

PROJECT DEFAULTS > DEFAULT DRUM/KEYGROUP FILTER: Off

PROJECT DEFAULTS > DEFAULT PLUGIN: your favourite plugin

PROJECT LOAD/SAVE: NEW PROJECT BEHAVIOUR: Empty Project

PROJECT LOAD/SAVE: NEW PROJECT DIALOG: Demo/Template/Recent

GENERAL > SHOW MODE SHORTCUT PANEL: checked

GENERAL > SHOW QLINK STATUS WHEN TOUCHED: checked

GENERAL > COLLECT USAGE STATISTICS: unchecked

MENU > Hold & drag your favourite icons to the left hand side (shortcut panel) and generally re-arrange icons to suit your workflow

SAMPLE EDIT > SETTINGS > CUE PREVIEW: BEFORE

SAMPLE EDIT > SETTINGS > SLICE PREVIEW: BEFORE

SAMPLE EDIT > SETTINGS > AUTO SCROLL: PAGE

SAMPLE EDIT > [SHIFT] > O SNAP: ON (*not remembered between project loads!*)

TRACK EDIT > SETTINGS > ZERO SNAP: ON

TRACK/PAD MUTE > SETTINGS > Use Track Colors: Checked

TRACK/PAD MUTE > SETTINGS > Mute Events Write Automation: Checked

TRACK/PAD MUTE > SETTINGS > Mute Events Undoable: Checked

LIST/GIRD EDIT > SETTINGS > AUTO-SCOLL: PAGE

APPENDIX B: AUDIO CONNECTION GUIDE

In this section I'll look at some common ways to integrate an MPC into a small studio set up, specifically focusing on audio connections – for help with MIDI connections, check out chapter C03.

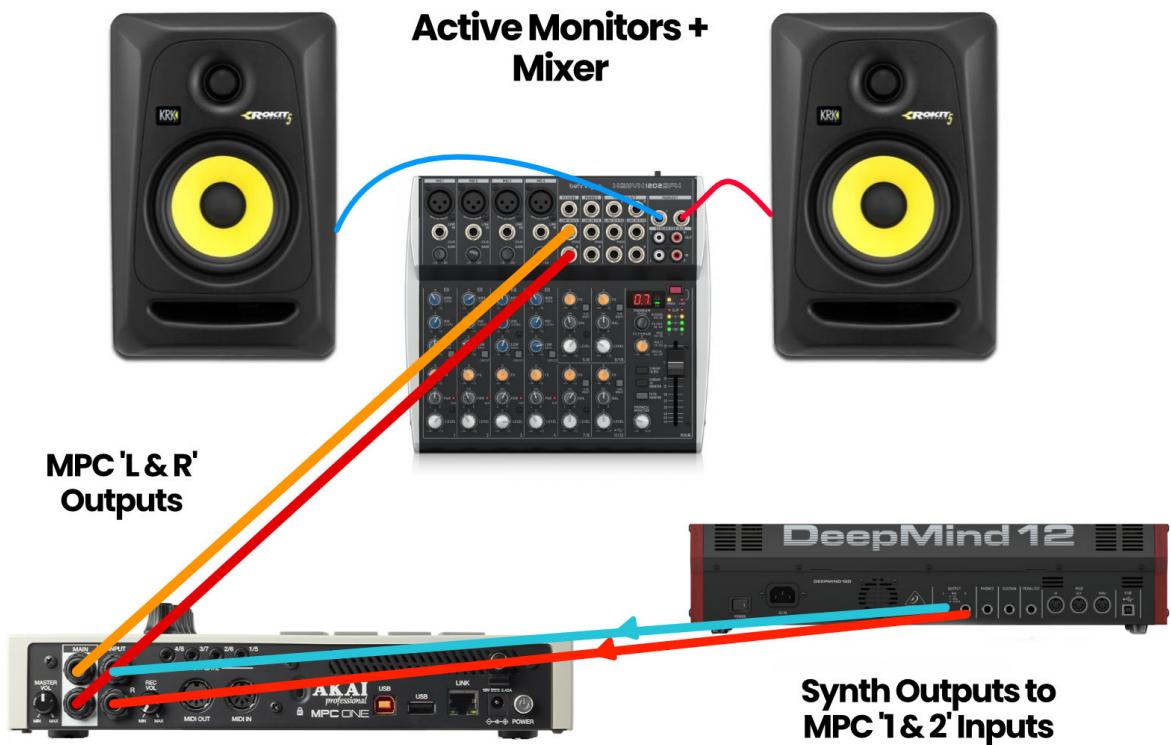
MPC AUDIO CONNECTIONS

Most MPCs will spend much of their life as an integrated element of a studio, often alongside many other devices including a computer, synths, other samplers, microphones, guitars, outboard FX, tape recorders, and turntables.

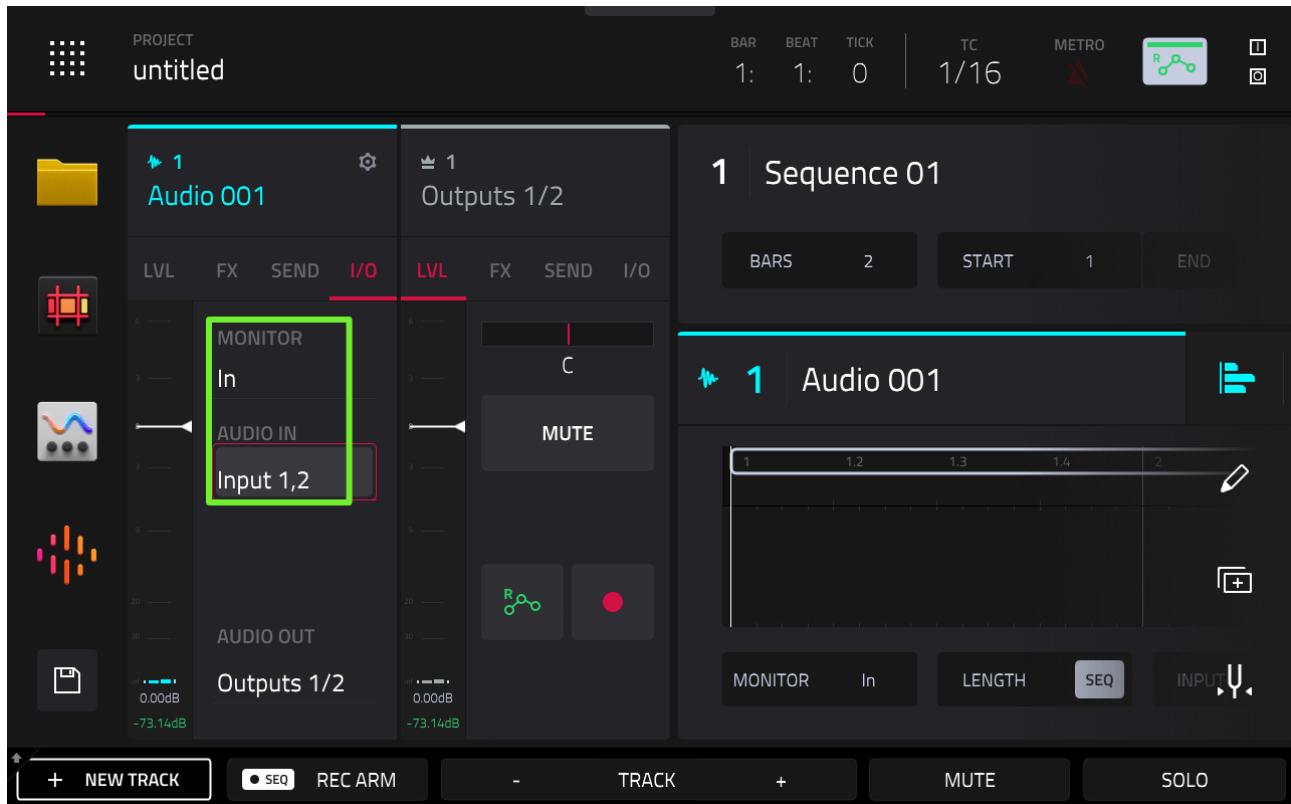
When considering how to configure everything you'll have to look at both outgoing and incoming audio requirements. There's literally hundreds of different permutations and combinations, so I'm going to keep it simple and focus on some of the most common, tried and tested setups.

SIMPLE 'DIRECT TO MPC' SET UP

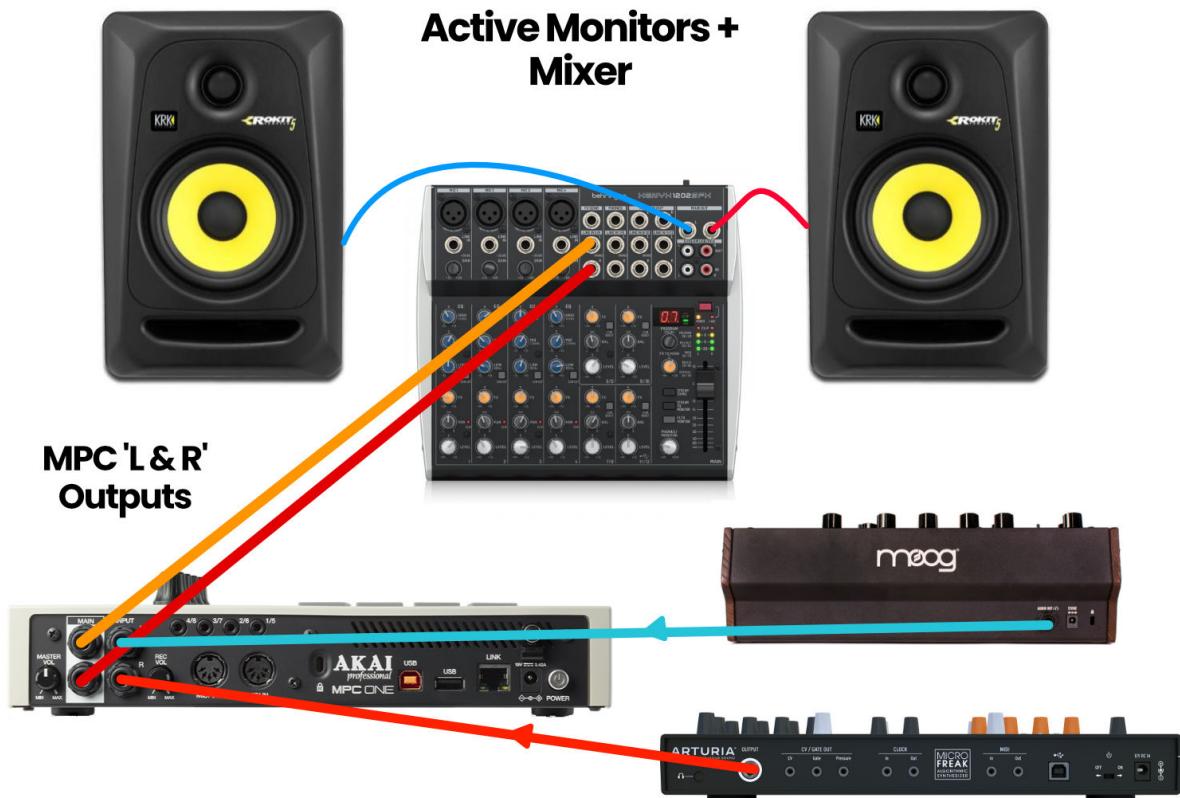
If you have a simple studio with maybe a single stereo synth and an MPC, then you could just connect the audio output of your synth into the MPC audio inputs. Then the MPC is connected to your monitoring system (often via a mixer):



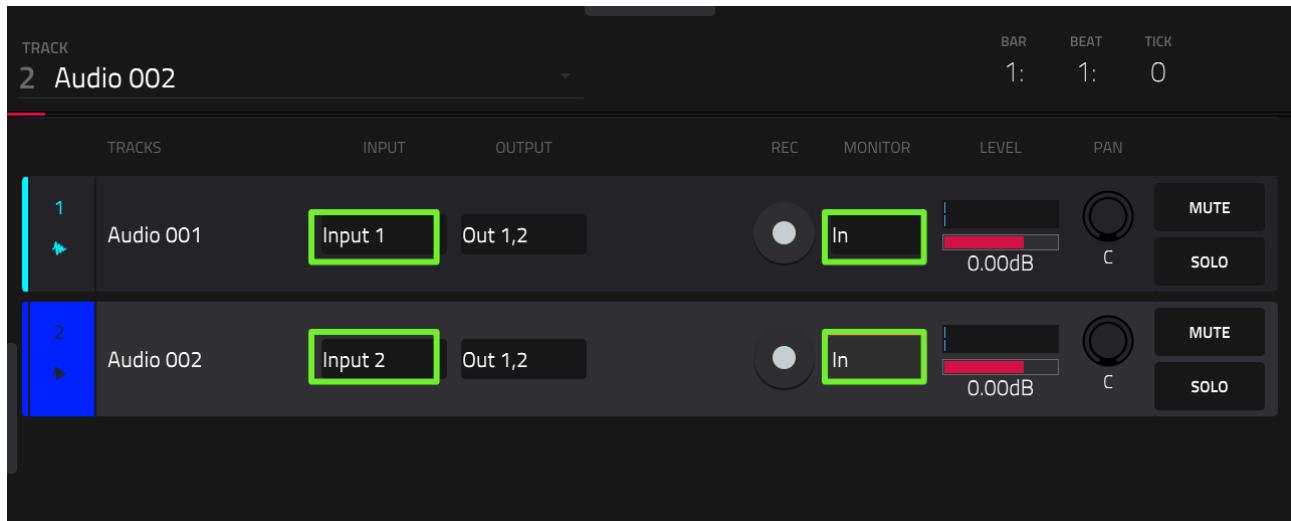
In your MPC you would simply assign '**Inputs 1,2**' to an audio track and your synth audio is always available inside your MPC project (set your audio track to **MONITOR:IN**).



The more inputs your MPC has, the more synths (and other devices) you can connect this way. And remember many synths only have a 'mono' output, so these only require a single audio input, so even on an MPC One, you can in theory directly connect two synths this way:

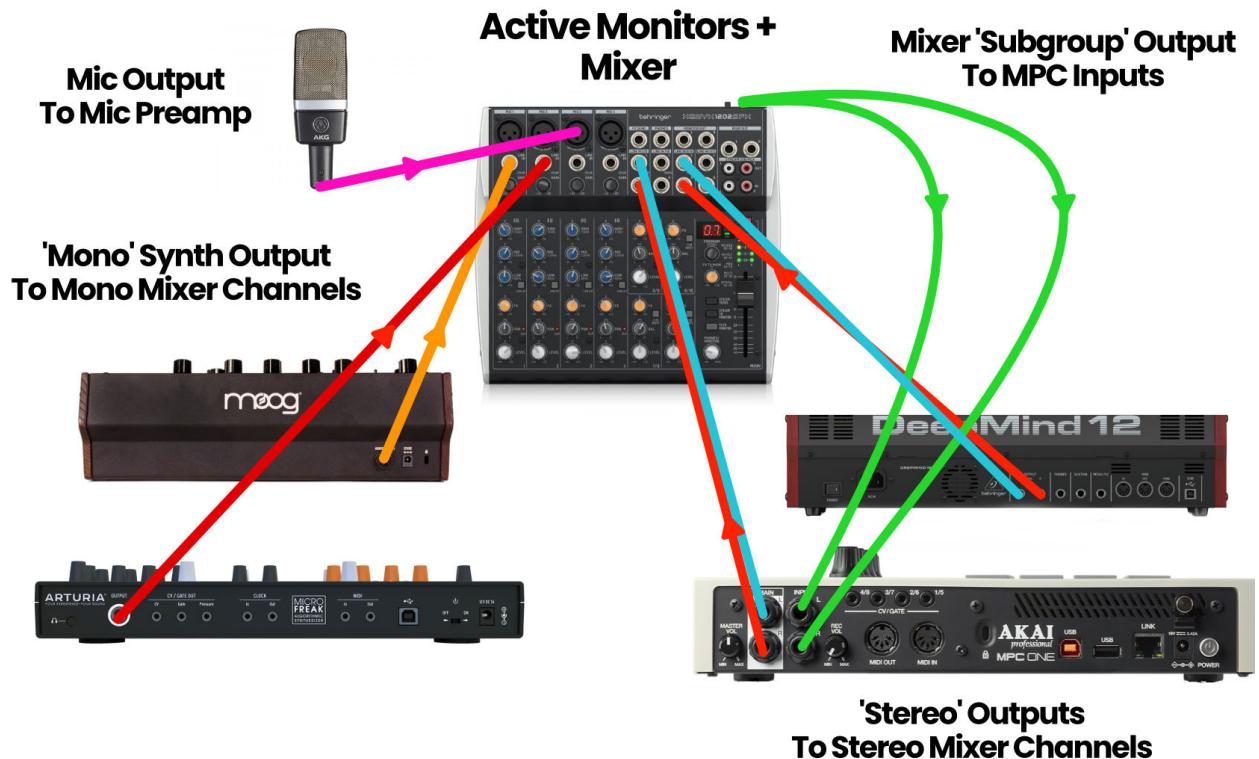


In this case, synth 1 goes to an audio track set to input '1', and a second audio track set to 'input 2' handles the audio for synth 2.



USING A 'MASTER' MIXER

Another option is connect *everything*, including your MPC, to your mixer, which in turn is connected to your studio's monitoring system:



Then permanently connect the mixer's 'auxiliary' or 'subgroup' output to the MPC audio inputs. Then when you want to record a particular synth into your MPC via the SAMPLER or an audio track, you can temporarily route that synth's mixer channel exclusively to the subgroup output only (and directly hence into the MPC's recording inputs).

USING A 'SUB' MIXER

Another option is to utilise a second mixer, often referred to as a '**sub-mixer**' to combine the audio outputs of several devices. Here you connect all your synths and samplers to inputs on the sub-mixer, then the stereo output of this mixer is routed to the main audio inputs of the MPC.



The MPC is then connected to the monitoring system, either directly or through the main mixer. The combined audio output of all your synths is then routed to an MPC audio track and sent to the main monitoring chain. When you need to sample a specific device, just solo it in the submixer.

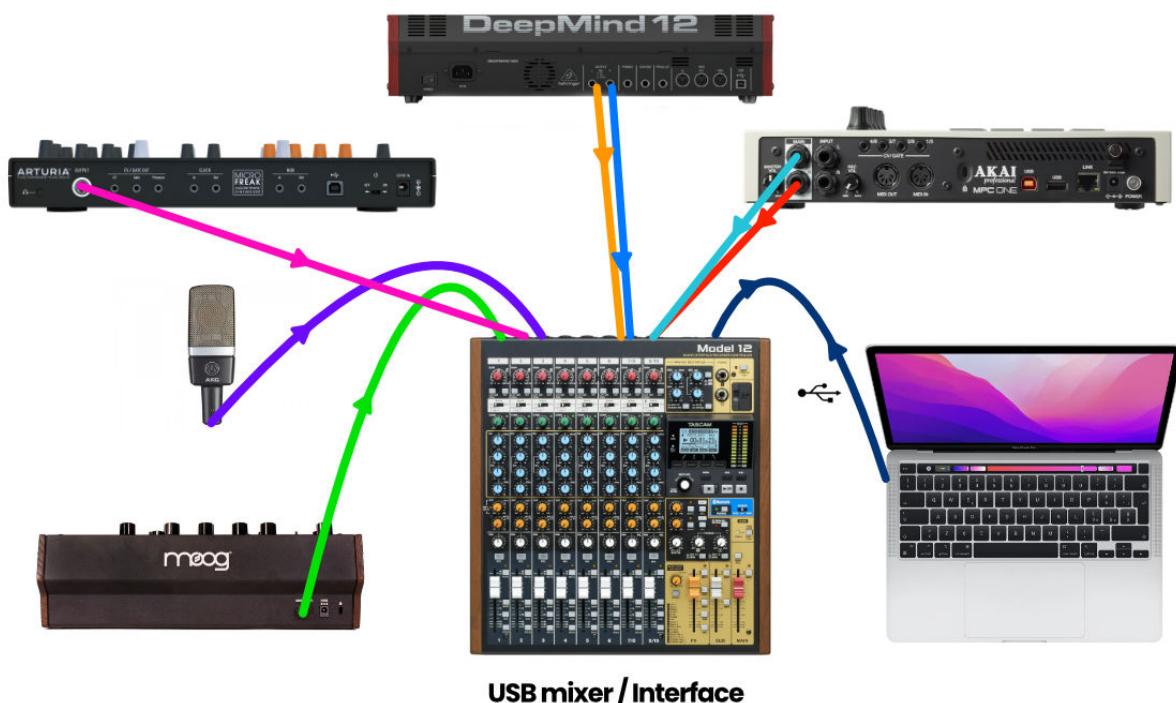
INCORPORATING A PATCHBAY

If you have a lot of equipment to connect, no matter which set up you use, I'd recommend you think about using a patchbay to avoid constantly plugging and unplugging cables. With a patchbay you discretely connect all your equipment to the inputs at the back of the patchbay and then use small patch cables to quickly configure connections between devices from the front inputs only:

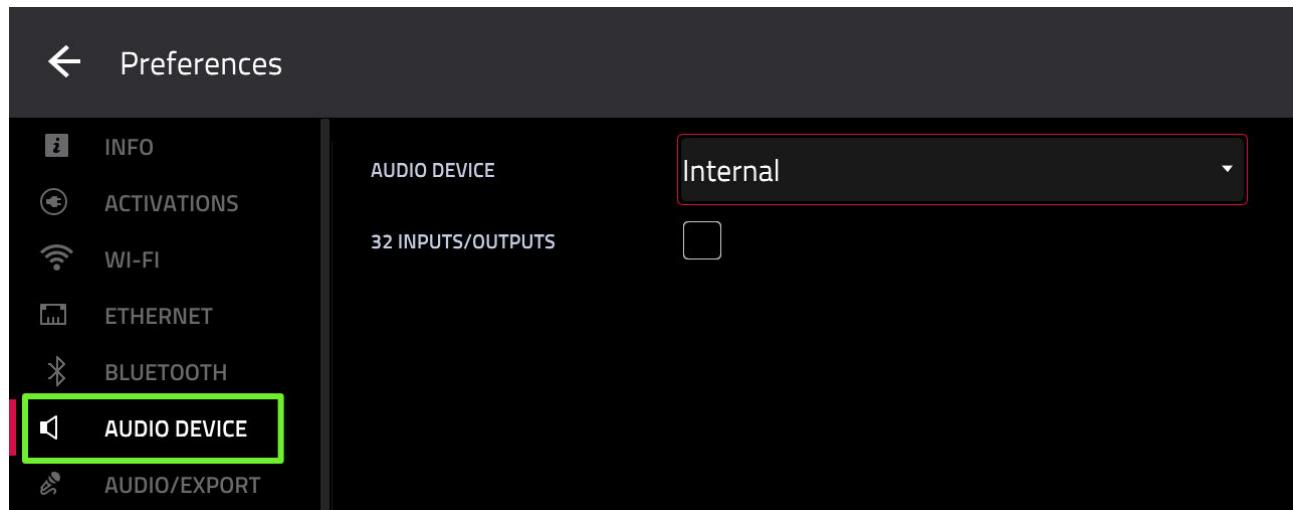


USING AUDIO INTERFACES & USB MIXERS

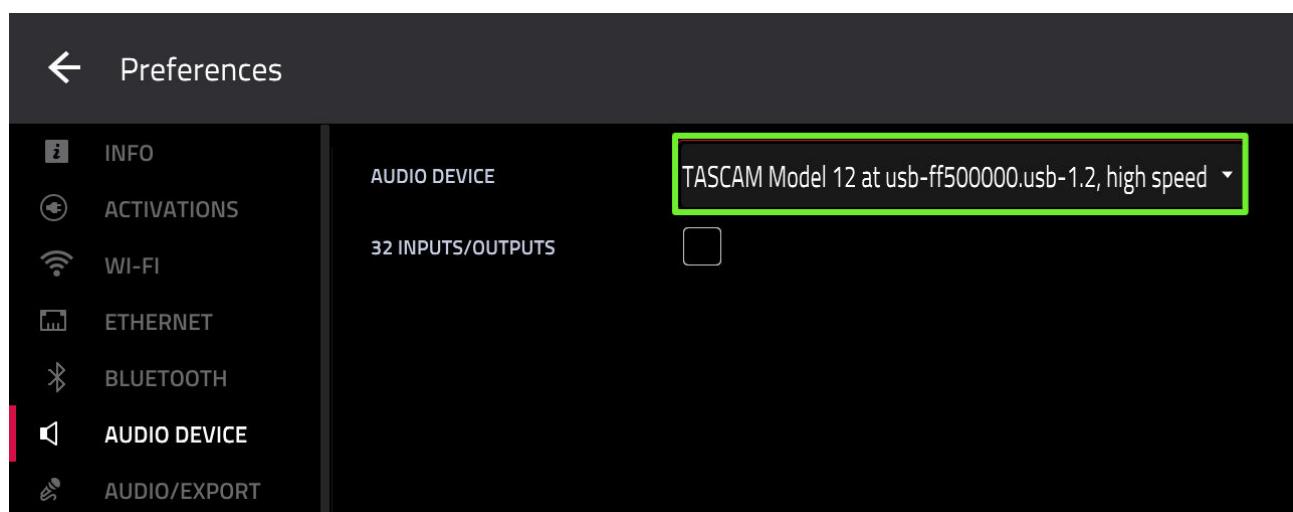
Computer audio interfaces and USB mixers with plenty of available inputs can be connected via USB to a computer while all the other devices, including your MPC, are permanently connected to the audio inputs of the interface. This configuration could be popular with producers who like to centre their studio around their computer:



In fact, a USB mixer like the **Tascam model 12** (or any other 'compatible' USB audio interface) can also be used to *replace* the internal audio device of your MPC. Simply connect it to a spare USB A port on your MPC and go to **[MENU] > PREFERENCES > AUDIO DEVICE**:



Select your connected USB interface and all audio in and out of your MPC will now be handled by the interface (the MPC headphone output will also be disabled, so you'll need to use the headphone port on your interface).

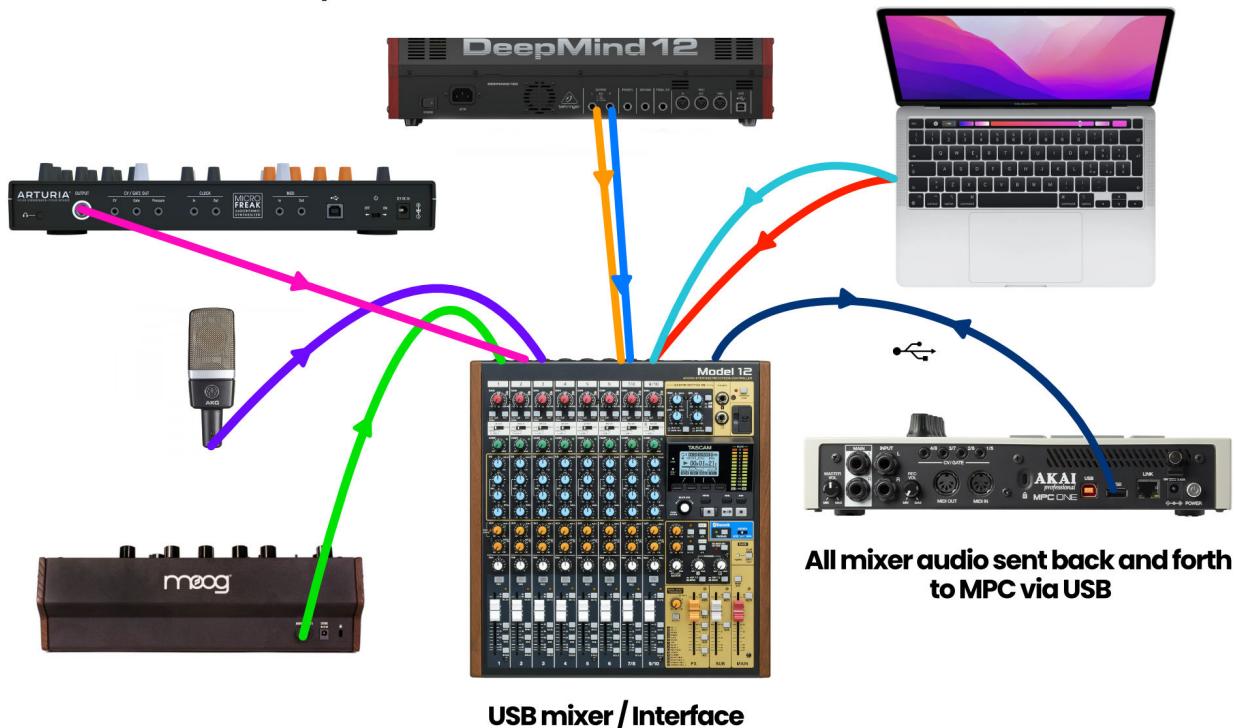


This is a way of increasing the total audio inputs and outputs of your MPC, as well as potentially improving the quality of the audio chain within your MPC (although the internal MPC audio interface is perfectly fine).



*USB audio interfaces and USB mixers must be '**class compliant**' and able to run at **44.1kHz**. Unfortunately even interfaces that meet this specification have been known to suffer from audio crackles and errors, and sometimes even supposedly 'working' models can receive negative reports from some users - currently Akai make no official recommendations, but check out the [List of Working/Non Working USB Interfaces](#) topic at MPC-Forums for the latest user submitted feedback.*

With your MPC acting as the USB 'host', it takes over the role of the computer used in the previous example:

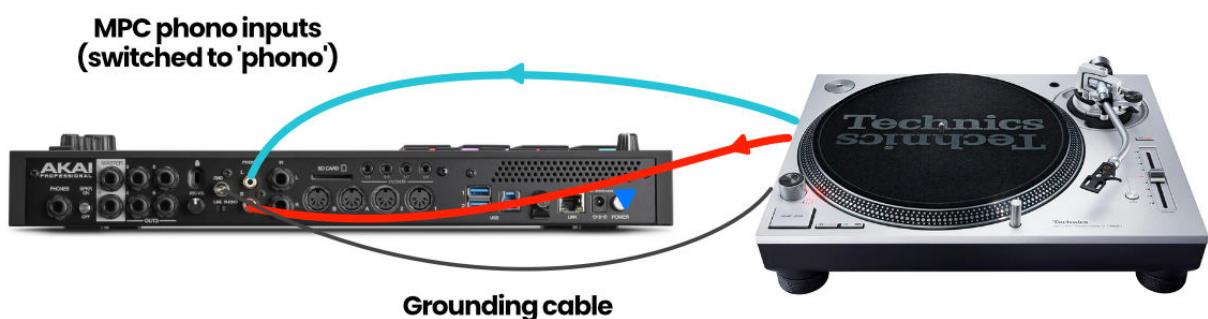


Here the MPC is central hub for all audio in your studio, and any other device can be connected to spare input channels on the USB mixer, and hence be available to use within the MPC with no additional cable routing required. If you ever need to record a connected synth via the SAMPLER or an audio track in your MPC, just use the device's mixer channel in the SAMPLER's INPUT field.

In the example above, the microphone is physically connected to **mixer channel 3** on the interface, so to record into your MPC direct from the microphone, simply set the 'INPUT' in the SAMPLER (or audio track) as '**Input 3**'.

SAMPLING FROM TURNTABLES

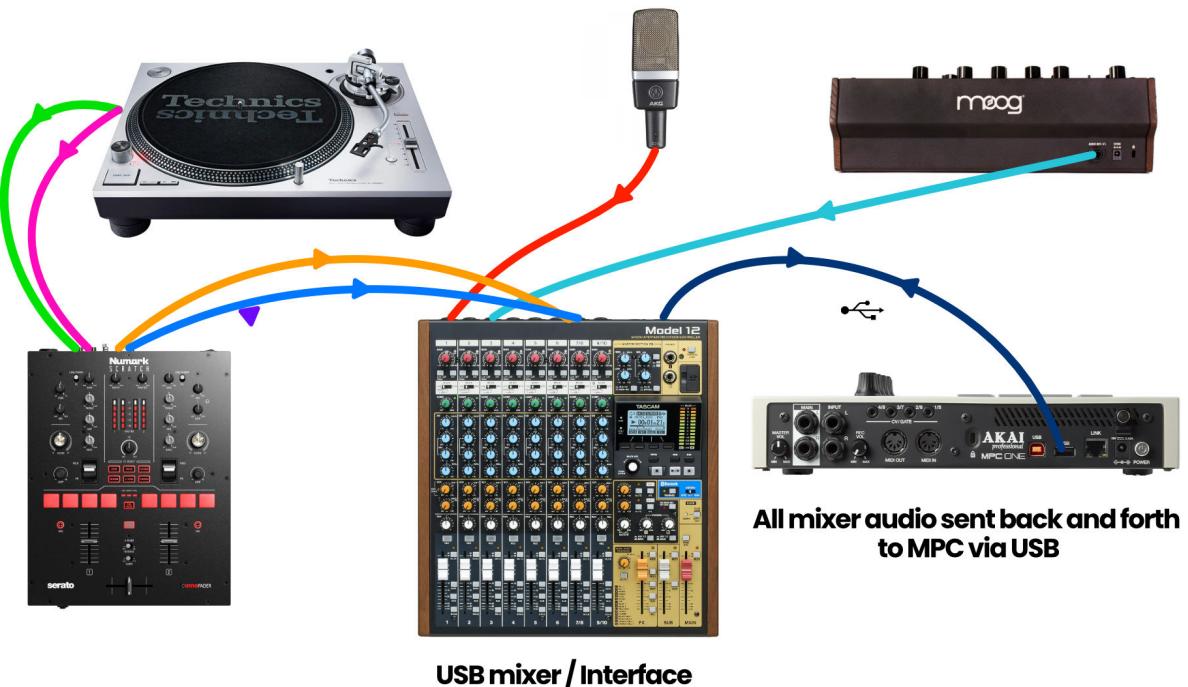
The output of a 'traditional' turntable is at '**phono**' level which requires preampfification to line level. If your MPC has dedicated phono inputs (e.g. MPC Live, MPC X) then you can connect 'phono level' turntables directly to the MPC – remember to switch the connection from 'LINE' to 'PHONO':



Make sure you also connect the ground cable to prevent hum.

Many modern turntables also feature a dedicated '**line level**' output, in which case can be connected directly to any standard line level input on your MPC or mixer.

Another option is to connect your turntable to a DJ mixer and then connect the DJ mixer to your MPC or a channel on your main mixer. The output of a DJ mixer will be at line level.



SAMPLING FROM PHONES & PORTABLE DEVICES

You can easily sample audio from any web site or app via your phone or laptop. The output from these devices is 'one level' so needs no pre-amplification.

If your device has a 3.5mm (1/8") stereo headphone output (e.g. laptop headphone output), use a cable which features a stereo 1/8 inch jack at one end, and a pair of 'split' 1/4 inch jacks at the other:



If you are sampling from a phone or tablet without a headphone output, you can use a cable like [this one](#) which supports lightning ports and USB-C (as well as 3.5mm headphones) - I've tested this one on an iPhone 13 Pro, an iPad Pro, and the headphone port on a MacBook Pro and it worked perfectly with all of them:



RECORDING FROM MICROPHONES

If your MPC has dedicated microphone inputs (e.g. MPC X) then you can use any microphone simply by plugging the mic directly into the MPC inputs:



Otherwise use the dedicated pre-amps in your mixer or interface as shown in previous set up examples.

Microphones are generally either **dynamic** or **condenser**. If you are using a condenser mic, engage the **48v phantom power** switch on your mic preamp (never use phantom power with dynamic mics).

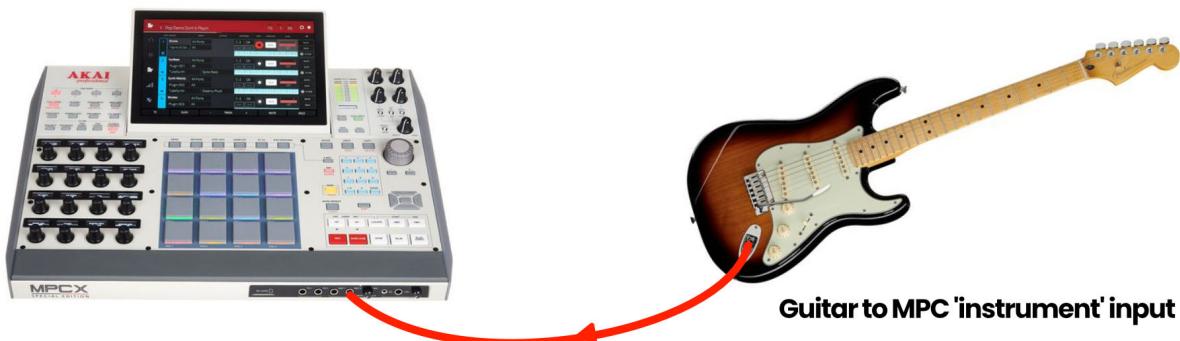


It is possible to plug dynamic mics directly into normal MPC inputs, however the level will normally be quite low. However it's still probably usable enough if there's no other option!

RECORDING GUITARS

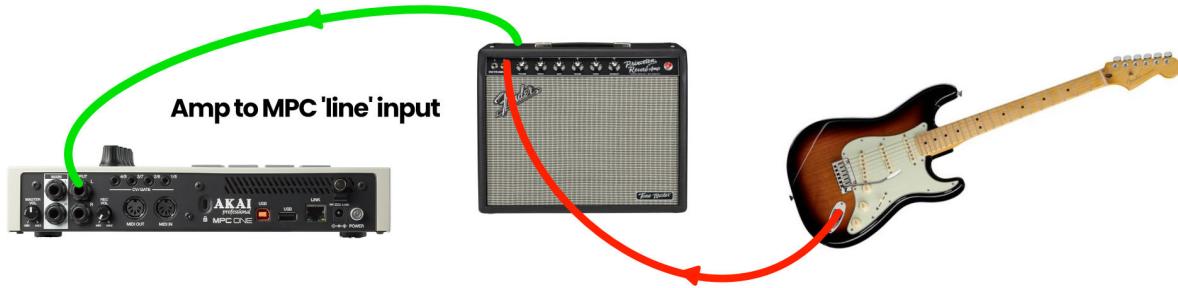
Electric guitars (including bass guitars) and some electric pianos output at '**instrument level**' rather than line level, so while you can connect these instruments directly to a 'line level' input you might find the overall level is a bit quiet requiring you to crank up the MPC's recording input gain (and hence increase the background noise).

This is not a problem on the MPC X and MPC Key 61 as they have dedicated '**instrument**' inputs which contain a special pre-amp that provides a low noise boost to instrument level signals. And if you use a USB interface, this will also likely have dedicated instrument inputs.



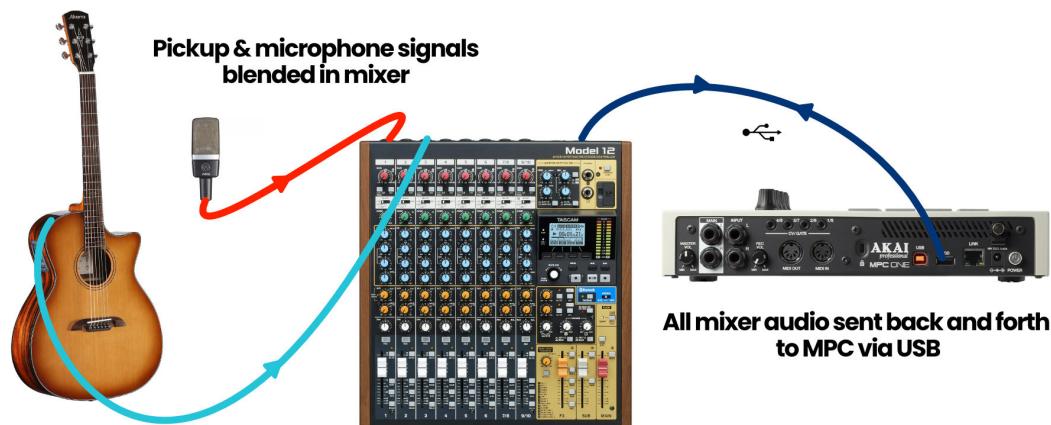
For other MPCs you might have to just test your particular instrument on your standard line inputs and judge whether its output is good enough for your needs (for most uses it will probably be fine).

Another option is to first connect the instrument to a guitar amp. Most amps have a 'line level' output so this can be connected to your MPC or mixer. An amp may also impart a desirable 'tone' to your signal (or at least come with quality built-in amp simulation FX).



Another option is to use a microphone to record the output from the amp's speaker. Simply position the mic front of the speaker and experiment with the exact positioning until you get the desired sound.

If you have an acoustic guitar then you'll need to use one or more microphones, preferably condensers. Your acoustic guitar may have a built in pick up system, in which case you can treat this in the same way as you would an electric guitar. That said, it's common to also record the acoustic output as well so you can experiment with a blend of the mic and pickup sources.



APPENDIX C: ADDITIONAL RESOURCES

ESSENTIAL MPC RESOURCES

- [MPC Samples](#) – Huge selection of MPC expansions, specialising in multisampled drums and instruments. And home of the MPC Bible!
- [MPC Tutor](#) – My personal blog, lots of free articles, reviews and MPC tutorials
- [MPC Forums](#) – the largest MPC community on the planet, running since 2002 with over 1 million posts and over 80,000 members. My main hang out!
- [MPC Stuff](#) – mods and replacement parts for all MPCs
- [Crates Motel](#) – Mixing & mastering videos with an MPC focus, from Conan Manchester.
- [Reddit MPC Users Group](#) – largest MPC group on Reddit, run by Cubilas.
- [MPC Facebook Community](#) – consistently friendly and helpful Facebook community for MPC heads.

SAMPLES USED IN THE TUTORIALS

- **Justin Allan Arnold:** [The Fisher King](#). Licensed under [Creative Commons: By Attribution 4.0](#)
- **Sascha Ende:** [Bar Performance 1](#). Licensed under [Creative Commons: By Attribution 4.0](#)
- **Enlia:** [Agony](#) . Licensed under [Creative Commons: By Attribution 3.0](#)

- **Gloria Steinem:** [Address to the Women of America](#) (Public Domain)

ACKNOWLEDGEMENTS

The MPC Bible would be possible without the help of my family and friends in the MPC community:

- First and foremost, my wife and kids who've barely seen me these past few months, thank you for your endless love and support
- '[Lampdog](#)' who has helped me run MPC Forums for the past 20+ years!
- Mike from [MPC Stuff](#) who has kept me supplied with spare parts, MPC mods and repair support for the past two decades
- The [MPC modding community](#) who created the scripts to make it possible to take screenshots and perform the day-to-day file management of my MPC. Big thanks to [Fitz Kik](#), [Amit Talwar](#) and Dawid Gałuszka
- And huge respect to everyone who spreads the great feedback and positive vibes about the MPC Bible project across social media. Every kind word I read motivates and inspires me to make the MPC Bible even better.

APPENDIX D: RELEASE HISTORY

REVISION 1

Release date: April 30th 2025

Compatibility: MPC Firmware 3.4.3

Summary: 90+ pages of new content, updated Expansions, bug fixes.

Added: 'Section D: Troubleshooting Q&A' (more content to be added here over time).

Added: 'MPC2 Project Migration Guide'

Added: 'Making Browser Previews Guide'

Added: Multiple FAQs and quick tips covering various topics, such as projects, sequencing, file management etc

Added: 'Instruments Selection' expansion now contains more instruments

Fixed: All samples within projects now use uppercase '.WAV' instead of '.wav' file extensions to avoid 'sample not found' error on NTFS formatted disks

Fixed: Missing samples in B02 and B04 folder

Fixed: 'B08 Keygroup Instrument' project now starts with correct sequence.

Fixed: Various minor bugs throughout the book

INITIAL RELEASE

Release date: April 11th 2025

Summary: First MPC Bible 3 release, created for MPC 3.4.3 standalone firmware.