

# 3

## Working with the Step Sequencer and Channels

In this chapter, we will cover:

- ▶ Gauging fundamental areas
- ▶ Exploring Channel settings
- ▶ Sending a channel to a mixer slot
- ▶ Working with Graph editor
- ▶ Using the Keyboard editor
- ▶ Working with patterns

### Introduction

The step sequencer is where you enter your steps. These are the areas on your various channels where you can place MIDI notes and all audio event triggering. You can pull up the step sequencer by pressing *F6* and either finding it in the **VIEW** menu or clicking the **View step sequencer** icon (the second icon from the left in *Fig 3.1*). The steps are arranged in horizontal order in the time scale, from left to right, encompassing grey and reddish-looking square boxes. Directly to the left in every single row on the step sequencer is an FL Studio channel, which is the sound of any given row of steps. The process of entering these steps is accomplished by left-clicking on the enter steps and right-clicking on the erase steps. Also, to the left of every channel are the panning, volume, and solo parameters.

The channels in the step sequencer are the backbone of your entire music production. They will be made up of all of your WAV and MP3 files, virtual instruments, automation, and audio clips. They will change different colors based on the FL Studio default setting, and this will help you recognize certain channels. You can easily rename channels to make your project more organized. You can also filter your channels using the group channels together function. FL Studio, by default, will also group your channels, as seen at the bottom left of the step sequencer. You will also set your beats per bar on the step sequencer and label your patterns. The patterns in the step sequencer will become arranged in your playlist to form your music production, which we will discuss in succeeding chapters.

Also within the step sequencer are the Graph and Keyboard editors; they will allow you to further shape your sound and fine-tune it to your own creative tastes. Within each channel, you have properties that can shape your sound, which are the channel settings that we will review in this chapter. Sounds from the FL Studio browser will be placed into a channel within the step sequencer to add layers of sounds into your project. The step sequencer contains each sound that you are using, and it is the building block of your entire project. When you have your creative juices flowing, you will be able to form your groove or harmonies very fast using the step sequencer. This is almost being "in the zone", so to speak, because you may lose track of time when being extremely creative.

## Gauging fundamental areas

The step sequencer contains a plethora of areas that can be clicked on and explored to aid your music production.

### Getting ready

In order to get started using the step sequencer, open up FL Studio and press the *F6* key to toggle it. Additionally, go to the **VIEW** menu and then select **Step Sequencer**. When the step sequencer is selected, you will see a small checkbox next to it. A third way is to simply click on the step sequencer symbol. The step sequencer is the second button from the left in *Fig 3.1*. You will also want to have your FL Studio Browser open so you can browse the sounds, which in turn will be sent to your channels. However, you may also load the samples from your **Channel settings** window in the step sequencer or drag them from your computer into an FL Studio channel. You may right-click directly on a channel and then select **Insert** or **Replace**.



Fig 3.1

## How to do it...

Let's take a look at the fundamental areas of the step sequencer. This opens up to many other levels and subtopics. The following screenshot shows the step sequencer:



Fig 3.2

► **Beats per bar for this pattern:**

The following steps will help you set the beats per bar value for a pattern:

1. Hover your mouse over the small box in the left-hand corner (see the number **4** in Fig 3.2). Observe the FL Studio hint bar to see **Beats per bar for this pattern**.
2. Click on **Drag up or down to adjust your beats per bar** and it will adjust the steps accordingly. Release your mouse button when you reach the number you want.

► **Pattern selector:**

1. Hover your mouse over **Pattern selector** (where it says **Cookbook Pattern 1** in Fig 3.2).
2. Click on it and it will populate the patterns you have used so far. Keep in mind that you can rename each pattern to your own liking; otherwise, the patterns will keep its default labels of the generic patterns 1, 2, 3, and so on.

► **Swing:**

Sometimes, it is important that you offset the timing of your groove and make it more human. *Chapter 9, Humanizing Your Song*, is dedicated to doing exactly that. *Fig 3.3* shows the adjustment of the swing slider on the title bar. It shows the beats of your waveform and how their start time is being shifted. It pushes your groove ever so slightly in time to the right, and the areas in red represent the down beat in 4/4 musical time.

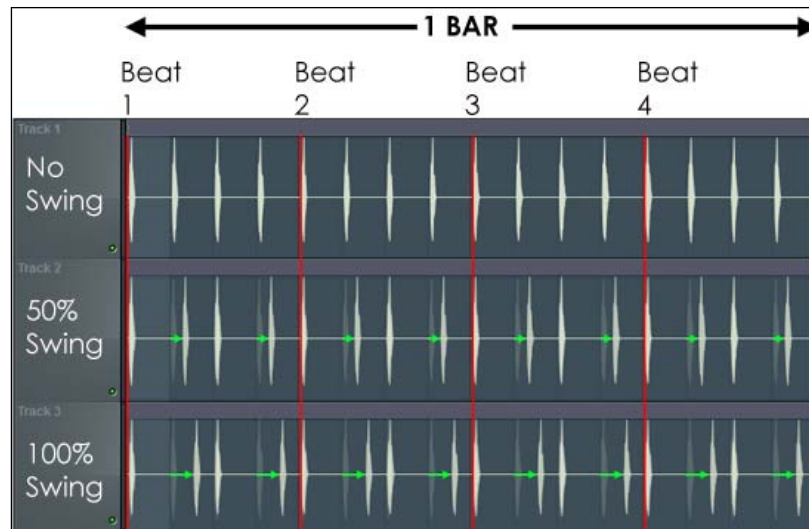


Fig 3.3 Image courtesy: The FL Studio help file

1. Click on the small swing button next to the swing.
2. You may slide the small box to the right and adjust your swing percentage (remember to check the FL Studio hint bar as discussed previously).

► **Graph editor:**

The **Graph editor** tab provides the added ability to tweak your various steps. Each note can be moved individually. Take a look at the following screenshot:



Fig 3.4

1. Click on the first button to the right of the swing slider to bring up the **Graph editor** section. If **Typing keyboard to piano** is turned off (your QWERTY keyboard), you may press the G key to engage **Graph editor**.
2. It will then populate the options from left to right, including **Pan**, **Velocity**, **Release**, **Mod X**, **Mod Y**, **Fine pitch**, and **Shift**. Note that in Fig 3.4, the **Snare** channel is selected with the small green light. You must select a channel with the small green light and then click on **Graph editor**. You can then control that particular channel with **Graph editor**. Each row on the parameters correlates to each step on a given channel.
3. Left-click anywhere in **Graph editor** to enter data for steps, which will show up in any given Graph editor parameters. This will show up as a vertical readout in FL Studio.

► **Keyboard editor:**

**This** turns each step into a full-fledged piano turned on its side, as shown in the following screenshot:



Fig 3.5

1. Click on the mini keyboard symbol in the top right-hand corner of the FL Studio step sequencer.
2. Click on the notes you desire for the steps in your particular channel. When you open **Keyboard editor**, every individual step can be changed into a new note if desired. This is like a piano with all of the keys, but the layout is vertical instead of the regular, horizontal one. If you turn your head to the left, you can see that it is in a piano. You can click inside **Keyboard editor** and your selection will be shown in orange, which will also automatically activate the particular step in question.
3. Scroll up and down with your mouse; you may also click, hold, and drag vertically with your mouse on every column of **Keyboard editor**. This will help you quickly find notes in octaves that are higher or lower on the keyboard. This allows for speedy inspiration and is another useful tool to create music, random melodies, and rhythms. Right-clicking on a note will delete its note data and also leave a faint red color where you last engaged a note.
4. Hold down *Ctrl* when clicking-and-dragging to simultaneously move all the notes up or down in pitch.

► **Mute/Solo Button:**

1. Hover your mouse over the small green circle button, shown in the following screenshot, at the far left of a channel in the step sequencer:



Fig 3.6

2. When you left-click on a channel, you can turn a given channel on and off. As a shortcut, simply press numbers 1 to 9 at the top of your QWERTY keyboard to mute on or off. The numbers correlate with the channels from top to bottom.



Fig 3.7

3. When you right-click on a channel, it will open up the options in the preceding screenshot.
4. Also, hold *Ctrl* + 1 and other numbers at the top of your QWERTY keyboard as a shortcut (again, the numbers correlate with the channels).
5. Select the **Solo** button to mute all of the other channels and only hear the audio from your isolated selection. You can also hold *Ctrl* and click on the green light to make the channel a solo selection.
6. We will review the creation of automation clips in *Chapter 10, Recording Automation*.

7. Note that in the previous option of **Link to controller...**, you may use a MIDI controller to turn the **Solo** button on or off or control the volume and panning knobs. Please review the recipe *Working with MIDI controllers and MIDI pads* in *Chapter 4, Building Your Song*, for more details. There are many physical knobs and sliders that can be utilized in MIDI controllers if you enjoy using the feel of your hands in lieu of clicking with a mouse. Essentially, any parameter on your computer screen can be controlled using a MIDI controller.

► **Channel panning knob:**

1. Hover your mouse over the knob directly to the right of the **Mute / solo** button in *Fig 3.6*. The hint bar will tell you that it is, indeed, the channel panning parameter. You will also see a small FL Studio symbol that represents how far left or right you are pushing your sound.
2. Left-clicking, holding, and dragging up or down correlates with a right/left crossfade, respectively. Hold down *Ctrl* to make the knob move slowly. You may place certain instruments to the left, right, or somewhere in between based on your creative taste. Although a fundamental property of all music productions, panning can have a huge impact on your final mood, mix, and production.
3. Right-click to select additional options. You may reset the knob here to return it to FL Studio's default position. *Alt* + left-click will also reset it.
4. Right-clicking will also give you the automation clips and the **Link to controller...** options, both of which will be covered later in the book.

► **Channel volume knob:**

1. Click on the volume knob and pull up or down to adjust the level of your channel. Directly to the right of the channel panning is the **Channel volume** knob in *Fig 3.6*. FL Studio will also show a small readout of the volume setting when the volume knob is engaged.
2. Hold down *Ctrl* before engaging your mouse button to have more control over the volume. This will enable you to adjust your level in small steps rather than large steps and may help in cases where only a small tweak is needed.
3. Right-clicking will allow you to reset the volume to FL Studio's default position, create an automation clip, or link to a MIDI controller (using **Link to controller...**).
4. This is arguably the most important aspect of music production—the relative volume of one instrument or part to another. They should not be clipped or set too high, which could cause distortion. The step sequencer makes it very easy to adjust the volume as the volume knob is included directly to the left of every channel. We will review other volume adjusters later in the chapter.



► **Channel:**

1. Left-click on a channel to bring up the **Channel settings** window. We will review this in the next recipe of this chapter, titled *Exploring Channel settings*.

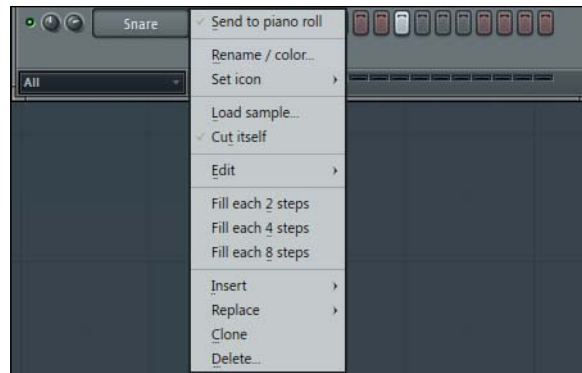


Fig 3.8

2. Right-click on a channel to open up the additional options. In the preceding screenshot, we right-clicked on the **Snare** channel.
3. Select **Fill each 2 steps**, **Fill each 4 steps**, or **Fill each 8 steps** to command FL Studio to automatically fill your steps in the channel that you have selected. This may help when you are testing out hi hats, shakers, and percussion, or in any creative way that you can think of.
4. Select **Rename / color...** to better organize your project to your individual system. A quicker shortcut is pressing *Shift* + click.
5. Select **Set icon** to help with the organization if necessary.
6. Select **Clone** to make an exact copy of your selected channel. This will not include the steps or the Piano roll information, but cloning a channel will produce the same parameters as the original channel that is being cloned. This means that the panning, volume and all the knobs within the **Channel settings** window will be cloned. The cloned channel will then appear directly below the original channel that is being cloned. This is very useful when you want to make a variation of an existing instrument that you are using and don't want to lose the original.

► **Channel select:**

The **Select** tab is the small green slit to the right of the kick channel in Fig 3.6.

1. Left-click on the green slit button currently engaged to select all the channels, and have the green slit button highlight all of your channels in your given pattern.

2. Right-click to select the additional channels, which includes your currently selected channel. Alternatively, you may press *Shift* and click on the desired channels.
3. Right-clicking on a channel select will also remove the channel selection.
4. Knowing which channels have been selected is crucial to understanding how to copy and paste channels or patterns and when you will send certain channels to the FL Studio Mixer. We will review these details in subsequent chapters. Also, multiple samples can be triggered at once via multiple MIDI triggers or controllers.

► **Steps:**

Left-click or right-click on the steps in the step sequencer (grey or reddish blocks) to trigger your sound or virtual instrument (refer to *Fig 3.2*).

### How it works...

The beats per bar set the number of steps in each step sequencer pattern. When working your beats per bar with a standard 4/4 time pattern (which is mostly used in popular music genres such as Indie Rock, Pop, Alternative, EDM, and Hip Hop), you can set this number to **4, 8, 16, 32, or 64**. This will enable you to have a standard beats and bar pattern, and after engaging the Space bar while in pattern mode, your pattern will loop around to form a seamless loop. If you are working with a 3/4 time pattern, you may set your beats per bar for this pattern to the number **6 or 12**. The loop you form can happen very quickly, and that is a reason why FL Studio is one of the easiest programs to use.

Each pattern may have a different and individual beats per bar. You may set the number of beats per bar in the **GENERAL** settings of the song project (press *F10* and then go to **Project | GENERAL**). By using the Piano roll, you will eradicate this entire issue of setting individual beats per bar values because you will be able to stretch your notes infinitely.

You may have up to 999 patterns using FL Studio, and each pattern will incorporate as many channels as you desire.

Using the space bar is vital to working with the step sequencer in all phases of your music production. This will enable you to stop your current loop and restart it from the beginning so that you can revise the steps you have entered at the start of the sequence if you wish to do so. Alternatively, you can let the loop play through, and it will cycle back to the beginning.

You may add as many channels as you want to whichever patterns you desire in the step sequencer. Remember that these patterns will later be used to arrange and build your song in the FL Studio Playlist, which is covered at the start of *Chapter 5, Using the Playlist*. For example, pattern 1 may include only your kick drum pattern, and you may rename it to *Kick*; pattern 2 may include only your hi hat pattern, and you may rename it to *Hi Hat*; pattern 3 may be your virtual instrument violin pattern, and you may rename it to *Violin*; and pattern 4 may be a guitar bassline, and you may rename it to *Bassline*.

A key function in all of this is copying and pasting channel data in addition to cutting channel data (erasing the channel data in the step sequencer). Channel data is anything to the right of a channel. This can be MIDI data, audio, a Piano roll, automation data, controller data, and so on. You will want to use the channel **Select** button (small green slit) on the channel in question. For example, let's pretend you have many channels and many steps filled in the step sequencer, all within pattern 16. In an example of pattern 16, you could have a cymbal channel, a piano channel, and a shaker channel, all on separate channels, but within the same pattern 16.

In order to separate the sounds from the pattern, which will later be used in the FL Studio Playlist (*Chapter 5, Using the Playlist*) when building your song, you will want to use the channel **Select** green slit, press **Ctrl + X** to copy and delete its sequencer data (because you are moving it elsewhere), navigate to a new pattern, and finally press **Ctrl + V** to paste it in. You may do this with multiple channels at once. You will not have to adjust the channel **Select** button in this process. It will remain in place on your given selected channel or channels. Using this method will allow you to work with one pattern of your choice when adding sounds and instruments and let you be creative with it. You will then have to separate the individual pieces and parts of your production by cutting and pasting channels or using the **Split by channel** feature covered later in this chapter. You can copy, paste, and cut channel data like you would with text in a Word document. Using the beats per bar and pattern selectors is all up to the user. How you divide your pieces and parts and arrange them is another crucial piece of the music production process.

The key features of working with the **Graph editor** are **Velocity** and **Shift**. The Graph editor can also adjust the panning and fine-tuning of the music file – using the **Fine pitch** function can make slightly flat instruments sound really cool. When working with the step sequencer, using the **Velocity** tab allows you to adjust the volume for each individual step on the step sequencer. **Velocity** is a tremendous tool for virtual instruments, guitars, and pianos because the lower the volume, the more soft and gentle the notes are conveyed. When you move the **Graph editor** to adjust the value of **Velocity**, you will be able to adjust the orange columns on each step in the step sequencer on a given channel. This will make things less robotic and add a human feel. Feel free to experiment with the velocity of your music in the **Graph editor**, and make sure you have the channel **Select** button engaged on the channel data that you want to adjust with the **Graph editor**. Another key feature is something you will find when you slide the **Graph editor** function all the way to the right. There you will find the **Shift** function, which offsets the timing of the notes ever so slightly. At a maximum **Shift** value, it will play the next step. Again, you will be able to adjust the columns of the **Graph editor**, which in this case will show in a blue column. The key reason for using the **Graph editor** is to adjust individual notes or events in lieu of working globally and affecting them all. The step sequencer is extremely intuitive when used this way because everything is located on one screen, and you don't have to navigate very far to make considerable adjustments to your music project. It's unbelievably powerful in its own right—just look under the proverbial hood!

Using the **Keyboard editor** on the step sequencer also makes it easy for the user to make quick changes to their music project. If you are using this, you are dealing with the tone and key of your sounds in any given channel. As discussed earlier, the **Keyboard editor** is a piano that has been turned on its side, and you may enter the piano notes by simply using your mouse. Note that using the **Keyboard editor** can come in handy when dealing with a multitude of sounds. You can adjust the key of your percussion or virtual instruments. Changing the pitch of an audio sample will adjust the playback speed. Changing a virtual instrument note will adjust the MIDI note value. Any note placed in the steps of the step sequencer can be manipulated with the **Keyboard editor**. Also, remember that each note that you press using your mouse in the **Keyboard editor** will automatically place a step in the step sequencer on your given channel.

Using the **Mute/Solo** button is something that is done during the mixing process. In FL Studio, the moment you start using the step sequencer, you are immediately immersed into the mixing process because you have control over the mute/solo feature, panning feature, and volume. Muting or soloing your channel can provide you with access to hear what your project sounds like with your channel, without your channel, and with only your channel. Soloing a channel can help when you really need to hear what is going on with your audio and in the cases of a vocal performance. Sometimes, you may hear a pop or click noise in your music project, and soloing something allows you to "find the culprit," so to speak. Soloing is also used when making equalization adjustments, which we will discuss when reviewing the FL Studio Mixer. When mixing, you will want to hear how your tracks/channels sound by themselves and also in the context of the entire mix. The content of your entire mix is incredibly important, so you may use muting or soloing, as you see fit, to build your music project and for the process of choosing your arrangement.

The channel panning and channel volume features are also crucial elements in any musical project. Panning will allow you to add interest to your song and place instruments tactfully to the left or right to make all of the elements of your song sound harmonious. You may also automate panning whenever you want to. We will review automation in *Chapter 10, Recording Automation*. The volume is arguably the most important part of mixing instruments because you want each channel to be at an optimal volume relative to all of your other channels. This also goes for when you have vocal tracks or any external instrument. Your vocals will need to "sit" well with all of the instruments in your project. Mixing instruments and vocals also includes additive or subtractive **equalization (EQ)**, which will be reviewed in *Chapter 6, Using the FL Studio Mixer and Recording Audio*. You also want your percussion and all of the instrument channels to be set at the proper volume. Decreasing or increasing the volume on given channels is up to the musical creator and their creative taste. Holding down the **Ctrl** button while moving up or down with your mouse allows you to adjust the volume in smaller increments with more control.

Using the steps in the step sequencer gives you immediate feedback of the steps you have placed. This is all about left-clicking to input data and right-clicking to erase a step. You may also click-and-drag with either mouse button to easily fill or erase successive steps.

Note that your main project tempo in FL Studio is directly correlated to the steps in the step sequencer. If you have a drum beat with MIDI data, this can be slowed down or sped up by adjusting your project tempo.

You may also use the *Alt* + up/down arrow key to move your selected channel(s) up or down in the step sequencer. This may help organize your project. You can find this option under the **CHANNEL** menu in the main window of FL Studio. The options will show **Move selected up** or **Move selected down**.

### There's more...

Often, you may want to start your project by adding channels with percussion and starting your drum beat. This means that you may add channels that include a kick, hi hat, snare, cymbal, and other percussion and enter the steps as you see fit. After this, you may add virtual instruments, sounds, and then a bassline. On the other hand, it is also handy to start with a MIDI part or harmony, add some other instruments, and lastly make your drum beat. In this fashion, you can really pick percussion that fits your existing harmonies and bassline. Nevertheless, some people enjoy starting with the drum beat and adding their harmonies and notes later on. Of course, you can record live music to a click track with many instrument players to develop the human chemistry and vibe. Again, there are no true rules in music production; use whatever method works best for you.



Keep in mind that many people prefer to use the **Piano roll** option after adding channels in the step sequencer. We will review the **Piano roll** in Chapter 4, *Building Your Song*.

### See also

- ▶ *Working with the Graph editor*
- ▶ *Using the Keyboard editor*
- ▶ The *Using the Piano roll* recipe in Chapter 4, *Building Your Song*
- ▶ The *Using patterns to build a song* recipe in Chapter 5, *Using the Playlist*

## Exploring Channel settings

Working with FL Studio channels and the settings inside them allows you to tweak your sounds with a plethora of options and quick presets. Generally, a **Sample/shape properties** tab (**SMP**), an **Instrument properties** tab (**INS**), a **Miscellaneous** tab (**MISC**), and a **Special tools & functions** tab (**FUNC**) is visible when you click on a given channel. When you are working with virtual instruments, virtual plugins, or any type of software synth, you will find a **PLUGIN** tab, that is, the plugin properties. In this tab, you will be working with the settings and parameters of your third-party plugin; this means that you will be able to use software synths and virtual instruments from multiple manufacturers and sources, including the free **Virtual Studio Technology (VSTs)** available online. With third-party plugins and free plugins, you will see that a screen readout pops up when you click the **PLUGIN** tab, and it generally allows you access to presets, parameters, knobs, and the virtual keybed or keyboard. The free plugins are designed by coders, geeks, underground designers, and those that believe in freeware. Most VST plugins and software synths are .dll files. There are always exceptions to the rule as VST3 plugins use a .vst extension. We previously reviewed how to install virtual plugins and effects in *Chapter 1, Configuring FL Studio*. With plugins that are part of the FL Studio factory installation, you will have access to the **PLUGIN** tab, which has immediate parameters and control modifiers.

### Getting ready

As discussed earlier, your channels are the backbone of your music project and contain all of the sounds that you are using. Press **F6** to bring up the step sequencer, or go to the **VIEW** menu and select **Step sequencer**. A third way to bring up the step sequencer is to use your mouse and click the second button from the left in *Fig 3.9*. It shows the tiny square steps inside the step sequencer. In order to bring up the channel settings and subfolders, click directly on a channel.



Fig 3.9

### How to do it...

Let's take a look at the channel settings inside the channels on the step sequencer, which can be considered subtabs.

- **The SMP tab:**

The **SMP** tab is the place where you will use audio manipulation tools such as pitch shift, time stretching, normalizing, and reversing. The following screenshot shows all the **Channel settings** tab options:

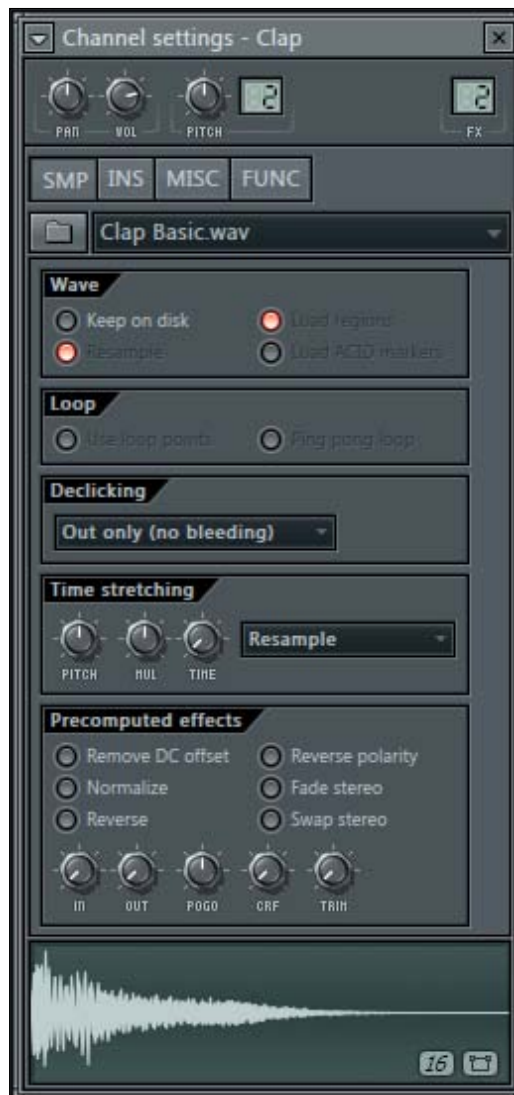


Fig 3.10

1. Click on a channel in the FL Studio step sequencer. If the channel is an audio sample, it will default on the **SMP** tab as shown in the previous screenshot. With virtual instruments, it will default to **PLUGIN**.
2. Use the panning (**PAN**), volume (**VOL**), and pitch (**PITCH**) knobs based on your creative taste. Again, with the volume, make sure your level is not clipping. These knobs may be automated like any other knob in FL Studio, which we will review in *Chapter 10, Recording Automation*.

3. In the *Fig 3.10*, the channel has the name `Clap Basic.wav`. Click on the folder symbol directly to the left of that to bring up your computer file hierarchy to see where your given sound is located. Also, use the folder symbol to change the sample.
4. Click and explore the precomputed effects at the bottom of the window and the color of the small circles will change to orange when selected. They require no computational power to be played, which makes them super useful. You can hear the changes while viewing the visual feedback of your given waveform at the bottom of the **SMP** section. Since they are precomputed effects, you cannot automate these knobs. Automation will be covered in *Chapter 10, Recording Automation*.
5. Click and explore the knobs at the bottom to shape your wave form readout and modify your sound. Many of these knobs create sounds and chords that are much smoother. These knobs can be automated by being drawn with your mouse movements or using a MIDI controller.
6. Adjust the knobs under the **Time stretching** area. These knobs can speed up, slow down, or change the pitch of your waveform. We will review crucial tools involving time stretching in *Chapter 7, Sampling Using Edison*. Right-click on **TIME** to automatically apply a specific bar length to your sample.
7. Click on the waveform to hear a preview of your current sound properties.
8. Right-click on the waveform to bring up the additional options.



► **The INS tab:**

The **TIME** section of the **INS** tab has the shape and envelope of your sine wave samples—you may also adjust it to **TNS** (tension). The following screenshot explores this option:



Fig 3.11

1. Click on the **INS** (instrument) tab within your channel settings. It will default to the volume properties of your sound envelope. A red drawing will be visible, which you can adjust or right-click to toggle between **TIME** and **TNS**. The **TNS** screen will display a from drawing and adjust the curve between the points, as shown in the following screenshot:



Fig 3.12

2. In Fig 3.12, you can see the **TIME** mode, which has turned the **DEL**, **ATT**, **DEC**, and **REL** knobs all the way to the left. This will help with triggering samples when you press and hold them on a MIDI keyboard, with your mouse, or in the Piano roll. When you press the knobs quickly and briefly, the sample should cut off completely. This means that you also have this cutoff ability in the FL Studio Piano roll, which will be reviewed in *Chapter 4, Building Your Song*. Be sure to look at the subtab and envelope values of **PAN**, **VOL**, **CUT**, **RES**, and **PITCH**. The small orange light in the left-hand corner must be engaged to make each envelope active. The **PAN** option does not support an envelope.
3. The envelope of your sine wave in the **TIME** mode includes **Attack, Decay, Sustain, and Release (ADSR)**. Attack is the time it takes to go from the minimum to the maximum. Decay is the time it takes to go from the maximum to the sustain level. Sustain is the level you stay at for as long as you hold the key (or sustain pedal). Release is the time it takes to go from wherever you are to the minimum.
4. Envelope parameters are modified over time per event.
5. Click on **TNS** to adjust the tension with the same knobs. You can also right-click on either the **TIME** or **TNS** knob to select either. In the tension edit mode (**TNS**), you can adjust the curves of the purple sine wave drawing.

Further shape your sound using the **Low Frequency Oscillator (LFO)** and Filter areas. This will modulate your sound. An LFO modulating an oscillator will produce vibrato, which is a frequency modulation. An LFO modulating a filter will produce an auto wave effect, which is a timbre modulation. An LFO modulating an amp will produce tremolo, which is an amplitude modulation. You may choose between sine waves, triangle waves, and square waves.

The filter section controls the lows, mids, and highs of the given sound. In the real world, this is the reason you can hear the bass and thumping from a neighbor's apartment or a dance club on the street. When the doors to a dance club are opened, the music's high end is released. Standing outside, it is only thumping that you will hear. Mod X is the filter cutoff frequency that can cut the highs with a low pass filter and cut the lows with a high pass filter. After the cutoff point, the filter will start doing its job. Mod Y is the filter resonance that controls the ringing of the frequencies at the cutoff. In LFOs, these parameters are modified over time, periodically.

► **The MISC tab:**

The following steps will show you the settings for the MISC tab:

1. The **VOL** knob under **Levels adjustment** can amplify your sound, in addition to all of the other volumes. The step sequencer volume knob goes up to 100 percent. This knob in the **MISC** tab goes up to a whopping 200 percent. The **Levels adjustment** area is handy for automation, which will be reviewed in *Chapter 10, Recording Automation*. The following screenshot shows the **Levels adjustment** tab:



Fig 3.13

2. The **Cut by** feature is found in samplers such as the MPC, software samplers such as the FPC, and Battery. Usually, notes will roll into each other. Click on **Cut** to make the signal stop and cut it off when the next note hits.
3. Multiple notes are handled through the **Polyphony** section. This is the maximum amount of voices/notes that you can use simultaneously. If you lower this number, you will save CPU power and increase computer performance.
4. On the keyboard at the bottom, you can change the channel root note to something different from the main project by right-clicking on the seekbar (the main project always defaults to **C5** at a specific place). Set the key range by clicking-and-dragging the seekbar.

Let's see how to get a note that glides/slides into the next note using the following steps:

1. Engage the Mono button under the **Polyphony** area, and the small circle will turn orange. Mono makes it so only one note can be played at a time (no chords).
2. Adjust the **SLIDE** knob to the right of the **Mono** button.
3. Hold down a note with your left finger and then simultaneously click on another note(s) with your right finger to hear the effect you have just added. You may use your QWERTY keyboard or a MIDI controller to trigger your notes.
4. Move the **SLIDE** knob further to the right in order to have a more drastic effect between keys/notes.

► **The FUNC tab:**

Let's take a look at the **FUNC** tab, which includes many options to process and shape your sound, as shown in the following screenshot:



Fig 3.14—presets for Echo delay / fat mode

1. Click on the small triangle sign in Fig 3.14 next to **Echo delay / fat mode**. This will populate some presets to further shape your sound.

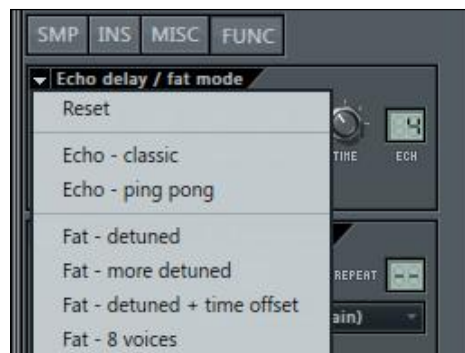


Fig 3.15

2. Explore the **Arpeggiator** area. An arpeggiator will automatically add a specific sequence of notes to your instrument, generally in an ascending or descending order. It could help inspire you if you are not the best keyboard player in the world. You may click next to the **CHORD** area, and FL Studio will populate it with multiple chords, which you will be able to choose for arpeggiation. When using a chord, the arpeggiator will focus on that particular key range and apply an automatic sequence of notes. Explore the areas next to the **OFF** button, in addition to the **Slide**, **TIME** (in the hint bar it is shown as **Arpeggio time**), and **GAT** (in the hint bar it is shown as **Arpeggio gate**) buttons.
  3. Select from the choice of chords first and then experiment with the arpeggio directions, which can go up and down your keyboard in various fashions. The arpeggio directions can be clicked by selecting any option directly next to the **OFF** button.
  4. Use the **OFS** (offset) button to fine time shift your sound, which will move things over in time ever so slightly. This can help with your groove and make things less robotic. This is under the **TIME** area at the bottom left.
- **The Plugin Tab (third party):**
- The **PLUGIN** tab will appear on plugins purchased from FL Studio, third-party software purchased from any manufacturer, or free plugins found online. It will also pop out on a graphical interface, as shown in the following screenshot, and then explore steps for the **PLUGIN** tab after that:



Fig 3.16

1. Click on the **PLUGIN** tab after loading a VST channel. You can load a channel by selecting **Add one** from the main **CHANNELS** menu or by right-clicking on an existing sequencer channel and selecting **Insert** or **Replace**.
2. Your virtual interface will pop up and you will be able to press any keybed with your mouse, QWERTY keyboard, or MIDI controller.
3. Use the **MISC** and **FUNC** tabs like any other channel according to your creative taste.
4. In Fig 3.16, you have clicked on the regular **PLUGIN** tab in your FL Studio Channel settings, after which the **Sytrus** interface will appear. Sytrus is an available upgrade for FL Studio, but you could download a demo version too.

► **The Plugin tab (default)**

Factory virtual instruments are included in FL Studio's default installation. The **PLUGIN** tab will not pop out on a graphical interface, but the functions and parameters, shown in the next steps, can be tweaked directly from the **PLUGIN** tab as shown in the following screenshot:



Fig 3.17

1. Select the **CHANNELS** menu (the main window in FL Studio) and go to **Add one | 3x Osc** to make a 3x Osc channel. You can also right-click on an existing sequencer channel and select **Insert** or **Replace**.
2. When you click on the channel, the **PLUGIN** tab shows immediate access to the keyboard, settings, and parameters.
3. Use the FL Studio Browser and open up the folder *Channel presets*.
4. Click on the *3x Osc* folder to open up the various presets of sounds for the 3x Osc virtual instrument.
5. Right-click on the preset or patch to send the preset you want to the **3x Osc** channel. You may also left-click, hold, and drag the preset directly on top of the **3x Osc** channel or let the preset go directly on top of the parameters shown in Fig 3.17.
6. The same method will work for the TS404 bassline synthesizer.



## How it works...

The **SMP** tab is the tab that shows your waveform, file hierarchy, and time stretching information. We will review key ways to work with time stretching in *Chapter 7, Sampling Using Edison*. The precomputed effects on the **Sample** tab are quite handy because you can normalize and reverse your sound. Normalizing will boost the volume (or normalize the volume so the peaks are at the same level) of any given sample or sound, and may help when you need to beef up your sound. Reversing is an awesome tool, which can be used based on your creative taste. When you right-click on the waveform in the **SMP** tab, you are able to further edit your sound using Edison. When you select edit after right-clicking on your waveform, FL Studio automatically opens up Edison. You may also use the knobs above your waveform to tweak it and view immediate feedback about your changes on the waveform image.

The **INS** tab is where the true audio engineers will go, although all you really need are good ears and a willingness to experiment with different parameters. You can come up with some truly interesting sounds here. This allows you to shape your sound based on how long you hold down a note for and when you let go of it.

The **MISC** tab has your levels, **Cut by**, and **Polyphony**. The **FUNC** tab has interesting effects for echo and delay, in addition to a very intuitive arpeggiator. All four of these areas allow the user to modify their sound and use it in creative ways. The **PLUGIN** tabs are used to open up virtual instruments and add harmonies and sounds to your music project.

## There's more...

You can experiment with sounds by right-clicking on a channel and selecting **Clone**. In this way, you can keep your original channel, mute it, but then see how it sounds with other parameters engaged.

If you have adjusted many channel parameters and want to keep your adjusted sound, knobs, and settings to be used at a later date, you may select the small triangle at the very top of any **Channel settings** window. This will allow you to save your channel by clicking on **Save channel state as...**, and you may then save it in the `Channel presets` folder in the FL Studio Browser. In this manner, you can bring up the sound that you really liked within any project in FL Studio and then tweak it from there yet again (refer to the top-left corner in *Fig 3.10*). All channel settings automatically save on the current music project you are working on. This enables you to create a collection of sounds that you are proud of.

Also, remember that you can *group* your channels to bunch certain ones of the same sort together based on your music project. FL Studio also does this for you automatically, which will show in the bottom left-hand corner of the step sequencer.

## See also

- ▶ The *Sending a channel to a mixer slot* recipe
- ▶ The *Adding virtual instruments* recipe in *Chapter 4, Building Your Song*

## Sending a channel to a mixer slot

Although you have seen the plethora of options included in the FL Studio channel settings, sending a channel to a mixer slot will allow superior control over your sound. The FL Studio Mixer will allow you to use gain, equalization, compression, reverb, delay, and a multitude of other FL Studio factory effects or third-party effect plugins. When you want to group instruments together, you can send them all to one mixer slot, thereby creating common gain control. Equalization is very important because you can add (boost) or subtract (cut) certain frequencies to make certain elements of your song stand out and be clearer for your listeners. We will review this in detail in the *Adding effects and your effect chain* recipe in *Chapter 6, Using the FL Studio Mixer and Recording Audio*. The FL Studio Mixer will also allow you to view the level of all your pieces and parts in a more organized way.

## Getting ready

You will want to have the step sequencer open so you can view your channels. To view the FL Studio Mixer, you may press **F9**. Alternatively, you may use the **VIEW** menu to select the **Mixer** option or click on the furthest symbol on the right, as shown in *Fig 3.18*. This icon represents the levels of your different channels / tracks / audio stems / FX slots in the FL Studio Mixer.



Fig 3.18

## How to do it...

Let's have a look at the different methods to send a channel to a mixer slot.

- ▶ **Standard method:**
  1. Click on a channel in the step sequencer to open up **Channel settings** as shown in the following screenshot:



Fig 3.19

2. Look to the upper right-hand corner of your given channel setting where you will find a small box labeled **FX**.
3. Hover your mouse over the **FX** area, and click, hold, and drag up or down to adjust the number of the **FX** slot/number.
4. In Fig 3.19, we adjusted the **FX** slot number to represent the number **1**.
5. The level/volume of the kick channel will now show up in the column **Insert 1** of the FL Studio Mixer.
6. Right-click on your column in the FL Studio Mixer, and select **Rename** to rename your FX slot as you see fit. We renamed Insert 1 to **Kick** in Fig 3.19.



A quicker shortcut for this whole process is to double-click and then hold the **FX** button, which will automatically pull up the FL Studio Mixer. At this point, you can drag the **FX** button to find an open slot. If your channel is already in a mixer slot, double-clicking the FX slot will allow you to quickly pull the channel up on the mixer.

► **Alternate method – one channel at a time:**

1. Select the channel you want to send to the mixer by clicking on the channel **Select** (small green slit).
2. Click on the mixer slot that you want the channel to be sent to.
3. Hold down **Ctrl + L** to automatically send the channel to the mixer slot that you have selected.
4. FL Studio will automatically give the mixer slot the same name as your selected channel.

► **Alternate Method – multiple channels in succession for organization and quickness:**

The following screenshot and the steps after it describe how to send multiple channels to the mixer at once:

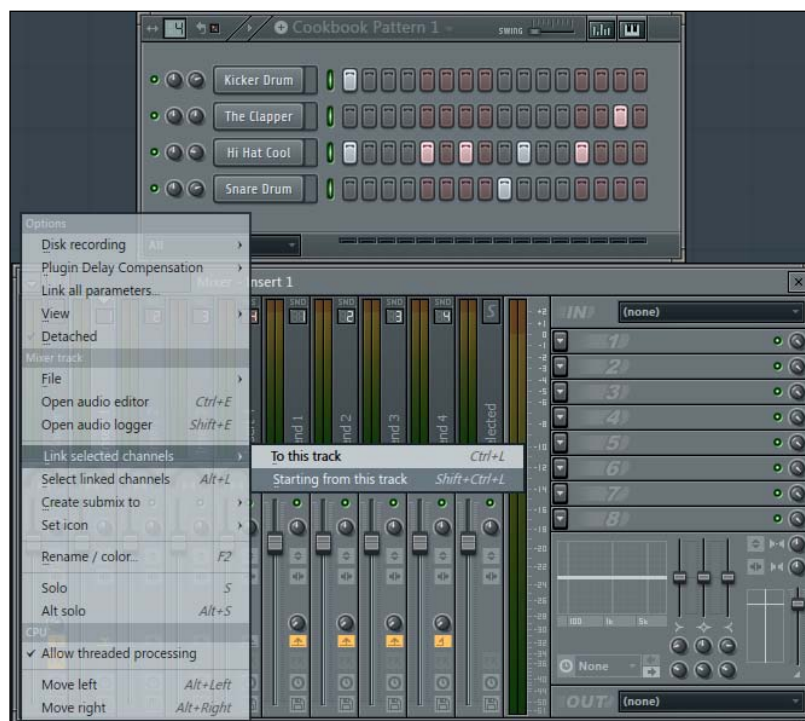


Fig 3.20

1. Use the channel **Select** (small green slit) and highlight more than one channel by right-clicking on it.
2. Click on the insert slot you want to start/match up your channels.
3. Click on the small triangle in the upper left-hand corner of the FL Studio Mixer.
4. Select **Starting from this track** and FL Studio will automatically add your selected channels in succession on the FL Studio Mixer.
5. You may also use the *Shift + Ctrl + L* function, as shown in *Fig 3.20*, in lieu of using your mouse.

In *Fig 3.20*, we selected the four channels with the green slit and then clicked on **Insert 1**. When we use the **Starting from this track** option in *Fig 3.20*, FL Studio will automatically send the said channels starting at **Insert 1**. This means **Insert 1** will be **Kicker Drum**, **Insert 2** will be **The Clapper**, **Insert 3** will be **Hi Hat Cool**, and **Insert 4** will be **Snare Drum**. The succession of channels from top to bottom in the step sequencer matches the horizontal succession (left to right) in the FL Studio Mixer. If you haven't already renamed any insert tracks, the name of your channels will automatically be carried over to the FX slots in the FL Studio Mixer.

### How it works...

Sending a channel or channels to mixer slots allows you to control each part of your project more precisely. During the creative process, you may add lots of channels to the step sequencer and enter data inside the step sequencer steps or piano roll. Because the creative process happens very quickly, you may not have the time to separate each track in the FL Studio Mixer. This is where the **Starting from this track** functionality comes into play. It can come in very handy if you wish to consecutively send and automatically separate your channels when you are ready to send them to the mixer. The **Starting from this track** option does the "manual labor" out of sending one channel at a time to the FL Studio Mixer, but there are no true rules. The way you send channels to the FL Studio Mixer is based on your personal workflow.

If you know that your workflow usually follows the same trend, you can also save an FL Studio project as a file/template of your choice. In this manner, you can set up as many channels as you want and have them routed/sent to wherever you want in the FL Studio Mixer. You can then adjust the sounds you are using by changing/replacing them and then saving your project as a new name. This will result in a streamlined template for your workflow, but the actual music project will vary differently from project to project. A template will allow you to make a fundamental skeleton and could help aide in the process. You can save a template as an `.flp` file, like any other FL Studio project file.

### There's more...

If you like to use your mouse and scroll through the different numbers in your channel settings that match up / to the FX slots in the FL Studio Mixer, you will see the highlighted area (visual feedback) in the FL Studio Mixer change as you scroll your mouse on a given number. You will want to have both the **Channels setting** window and FL Studio Mixer open at the same time to view the visual feedback. Otherwise, you can use the quick tip of double-clicking on an **FX** button, which automatically brings up the mixer.

You can also click on the small triangle in the upper left-hand corner of the FL Studio Mixer, select **Detached**, and drag/move the FL Studio Mixer to a separate monitor/screen/TV/display. This will give you a large view of the FL Studio Mixer, and you will not have to open and close it within one screen any longer. This will help with your workflow and organization. In order to automatically assign your channel to an available mixer slot, click on the upper left-hand triangle (**Channel options**) on any channel settings window and select **Assign free mixer track**.

### See also

- ▶ The *Adding effects and your effect chain* recipe in Chapter 6, *Using the FL Studio Mixer and Recording Audio*
- ▶ The *Perfecting equalization* recipe in Chapter 6, *Using the FL Studio Mixer and Recording Audio*
- ▶ The *Export your audio stems* recipe in Chapter 8, *Exporting and Rendering your Project*

## Working with the Graph editor

Within the step sequencer, there is a very powerful tool called the Graph editor. This means that you will have access to change individual steps on the step sequencer by adjusting the panning, velocity (volume), release, filter cutoff, filter resonance, pitch, and time shifting. This is a great tool if you want to change the sound of the drums and percussion. You can greatly enhance the mood of your music by adjusting these nuances within the drums and percussion.

### Getting ready

To get started with using the Graph editor in the step sequencer, you only need to have the step sequencer open with some channel data for your steps.

## How to do it...

1. Open up a step sequencer by pressing the *F6* key, or simply browse with your mouse to the **VIEW** menu and select **Step sequencer**. You will want to have data in your steps which are generally drums or percussion based. The following screenshot shows the **Graph editor**:



Fig 3.21

2. Click on the small box in the upper right-hand corner of the step sequencer. This is the graph-like image in between the **SWING** and small piano symbols.
3. Adjust the event properties by moving the bottom slider. Click on the columns to adjust your given steps
4. Hold *Ctrl* while clicking-and-dragging the columns to interpose values. Right-click inside the editor to engage an incremental adjustment and drag your mouse to draw ascending or descending steps.
5. Make sure you have engaged the channel you want to edit with the Graph editor. In Fig 3.21, you will be working with the **Hat** channel. The right-click method has been used to create "value ramps."

## How it works...

When you have access to pan (left-hand side and right-hand side of your speakers or headphones) every piece of data in the step sequencer, you can immediately tweak your song, which will give you interesting results. Panning will allow you to separate your instruments and/or percussion to have a well-balanced music production.

Velocity, also known as volume, will add a human feel to your project and make the level of your channel varied when it needs to be. Velocity will also add an aggressive or soft feel to instruments such as the piano and guitar. It is the power at which a note is struck and not just the volume. For example, when using a guitar instrument, a very high velocity will add a strong pluck sound while a low velocity will make it sound like strumming. This is easy to distinguish when using a MIDI controller with touch-sensitive keys. The hard or soft manner in which you press the keys will add certain distinctions as you work with the same sound patch.

Using the Mod X and Mod Y functions can help you add filter effects and sweeping frequencies. Mod X is the filter cutoff and Mod Y is the filter resonance. For example, on a snare or clap channel, try lowering the Mod X between 7 percent and 50 percent and then adjust the Mod Y to around 25 percent. Fill in every single step on the step sequencer so you can hear the changes. The Mod X and Mod Y columns are very sensitive, so the simplest adjustment could considerably change the sound. The pitch property is used mostly for drums and percussion, but you may try to adjust other instruments with the fine pitch property (for other instruments, you can simply use **Keyboard editor** or **Piano roll**). Another great way to add a human feel is to adjust the time shift with the **Shift** parameter. Adding all these properties in the Graph editor is vital to connecting to your music project and having it connect to your listeners.

## There's more...

When you are working with a kick drum, you may want to use the **Shift** parameter to shift the sample to the right, in the time scale. This means that you will add a tiny bit of the blue color to the given column when you use the **Shift** parameter on a kick drum in the step sequencer. Small adjustments that change the timing of when the step sequencer plays your samples can be the difference between a good song and great song. You can also easily change the feel of an entire song just by adjusting the timing and velocity of the kick drum. The same goes for all percussion, which means that there are no rules. The more experimenting you do with the Graph editor, the better you will be at knowing how to shape your sounds based on your creative vision.

## See also

- ▶ The *Guaging fundamental areas* recipe
- ▶ The *Sending a channel to a mixer slot* recipe



- ▶ The *Working with MIDI controllers and MIDI pads* recipe in *Chapter 4, Building Your Song*
- ▶ The *Humanizing with the OFS knob* recipe in *Chapter 9, Humanizing Your Song*

## Using the Keyboard editor

The Keyboard editor will allow you to have quick access to each note/pitch value in the step sequencer when working with "steps."

### Getting ready

To get started with using the Keyboard editor in the step sequencer, you only need to have the step sequencer open with some channel data on your given steps.

### How to do it...

1. Engage the channel **Select** button (small green slit) or click on a channel as shown in the following screenshot:



Fig 3.22

2. Click on the small box that looks like a piano key in the upper right-hand corner of the step sequencer.
3. Click on the note/pitch that you want to use for your given channel.
4. Use the channel **Select** (small green slit) to change the channels and still have the **Keyboard editor** open.
5. Click on the small box above each column of the piano notes to engage a slide/portamento effect. When engaged, it will show a small symbol that looks like half a triangle. In the previous figure, the portamento effect has been engaged on three notes in the Bell channel.
6. Hold down *Ctrl* to drag all of the notes at once. They will stay relative to each other, and you will be able to drag all of them up or down at the same time.
7. Left-click and drag on the piano columns up or down to find notes/pitches further up and down the piano.
8. Right-click to erase the data in the Keyboard editor and associated step.

### How it works...

The Keyboard editor will work for any virtual plugin, drums, or percussion. You can change the pitch/notes of the data currently being entered as "steps," or you can click on a piano note and it will automatically add the step in your associated column. You can click-and-drag on each column and hear the sound output of each note as you drag up or down. This allows for immediate variations of notes without the need to open up the FL Studio Piano roll.

### See also

- ▶ The *Gauging fundamental areas* recipe
- ▶ The *Adding virtual instruments* recipe in *Chapter 4, Building Your Song*
- ▶ The *Using the Piano roll* recipe in *Chapter 4, Building Your Song*

## Working with patterns

The actual arrangement of your music project in FL Studio is based on the use of patterns. Patterns are, of course, made up of all your different channels and sounds in the step sequencer. Once you have differentiated all of your different patterns, the arrangement of these patterns will be placed into the FL Studio playlist, which will be reviewed in *Chapter 4, Building Your Song*.

### Getting ready

To start working with patterns, you will only need to have your step sequencer open. You may do this by pressing the *F6* key.

### How to do it...

1. Enter data for any of your given channels on a specific pattern. In *Fig 3.23*, **PAT 1** is being worked on. You can observe this by looking at the area next to the right of the **TEMPO** information or by looking at the top of the step sequencer where it reads **Pattern 1**.



Fig 3.23

2. Press the space bar or click play in FL Studio. At the very bottom of the step sequencer, you will see a small orange area, which the hint bar refers to as a "playing step." This will scroll left to right and then repeat/loop as your pattern returns to the start. The playing step helps you to visually see which pattern, if any, is currently playing. The preceding screenshot explores these details.

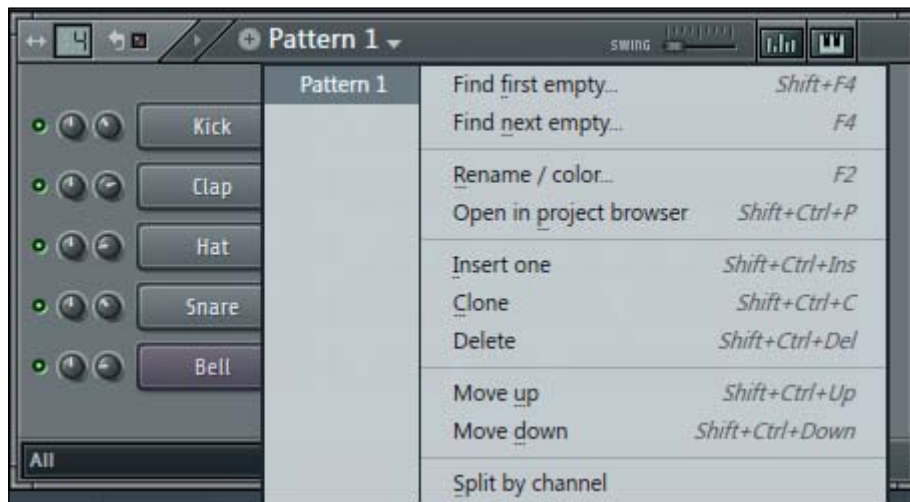


Fig 3.24

3. Click on the drop-down menu to bring up the additional options. You have clicked the text titled **Pattern 1** at the top of the step sequencer, as shown in Fig 3.24.
4. Select **Split by channel** to split each channel into a separate pattern.
5. If we select **Split by channel**, it will separate all of the channel data in the current pattern into subsequent patterns from top to bottom.
6. In Fig 3.24, all the channel data is currently on **Pattern 1**. If we select **Split by channel** while on **Pattern 1**, FL Studio will make **Pattern 1** include only the **Kick** data, **Pattern 2** will now only have the **Hat** data, **Pattern 3** will only have the **Snare** data, and **Pattern 4** will only have the **Bell** data.
7. After using the **Split by channel** function, as listed in Fig 3.24, **Pattern 1** in the drop-down box will now show **Kick, Hat, Snare, and Bell** per the figure below. FL Studio will automatically rename your patterns based on the channel names (from top to bottom) and automatically split the channels into successive patterns. The following screenshot explores these options:

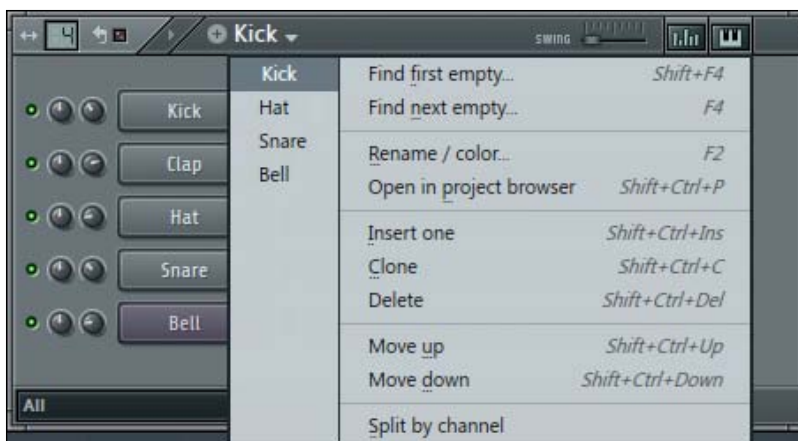


Fig 3.25

## How it works...

Patterns are copied and pasted or the **Split by channel** functionality is used basically for one purpose: to separate the many pieces, parts, and sounds of your music project in order to make a full music production. This will happen when you arrange your different patterns in the FL Studio playlist and engage the **SONG** button under the **PAT** button near your main play button. We will review this more in depth in the *Using patterns to build your song* recipe in Chapter 5, *Using the Playlist*. You may choose to work on one single pattern at the onset of the creative process because you may be adding many channels very quickly and coming up with percussion or instrument parts. After this, you can use **Split by channel** or manually cut and paste your channel(s) to separate patterns. In this manner, you can create sections for your intro, verses, chorus, bridge, outro, or any sections that you deem fit for your music project.

## See also

- ▶ The *Comparing pattern and song mode* recipe in Chapter 4, *Building Your Song*
- ▶ The *Using patterns to build your song* recipe in Chapter 5, *Using the Playlist*

