

MDMC Custom Charting Tips

Before getting started, I would like to mention that this has been written to provide charting tips for those wanting to work on improving their charting skills and creating better, more comfortably playable charts. If you are unsure on how to get started on charting in the first place, please read the [Quick MDBMSC setup guide](#) and [Muse_Dash_Custom_Chart_Tutorial](#) in the [#charting_resources](#) channel first.

In this document, I am going to share my charting knowledge I've acquired from official charts. These are tips for the arrangements and pattern design, and will be the same whether your chart is easy or hard.

Keep in mind that these tips are **not always necessary**, but rather tips for finding ideas. **You are the charter after all**, so please don't be afraid to do something totally unique.

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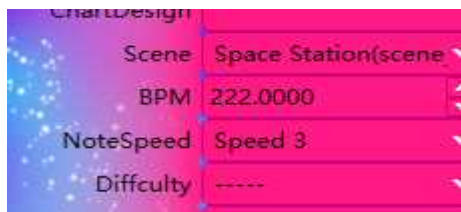
1. Offsetting the Music

I believe a lot of charters are still unaware of how to properly offset the music for their charts. You might know about Audacity, a program used to edit sound files, **but are you aware of how to use it to its fullest potential?**

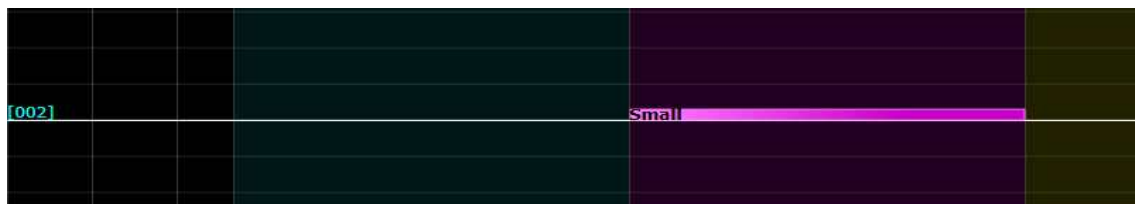
Step 1. Place the key note for finding millisecond time

To properly offset a chart, **you will first need to set the BPM of your chart in iBMS** and place a "key note", a note that will define the starting point of your song. Every chart has a different offset time and BPM

a) Open your BMS file and set the BPM.

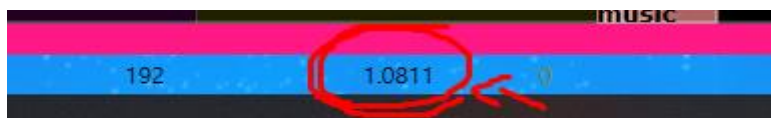


b) Place a key note at [002].



In some cases, you might need to place the key note at [003] or farther based on the audio file you are using

c) Take note of the number displayed at the bottom of iBMS, it is the millisecond that this note will be played

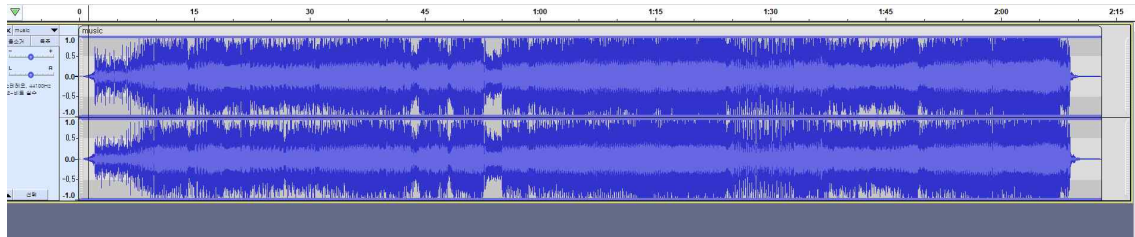


The millisecond is 1.0811ms for 222 BPM. This offset changes as the BPM

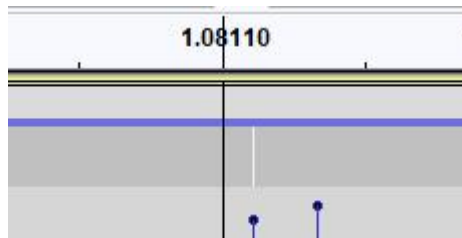
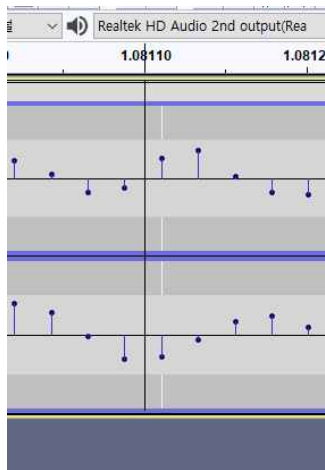
Step 2. Open the Audacity and mark the time

Audacity is a free but strong sound editor. It is a very useful tool for charting, and this tutorial will be explaining the process using it.

a) Open Audacity and import the music file



b) Zoom in closely and find the millisecond that you took note of earlier



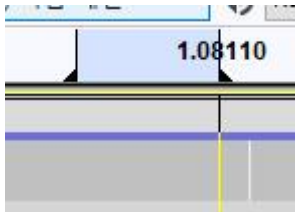
It looks like this when zoomed out



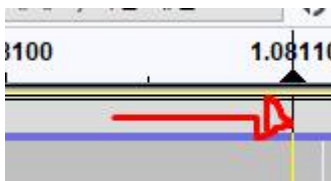
c) Mark it!

There's probably another way to mark it, but here is my method.

1. Drag the timeline to the millisecond that you've selected like this:



2. Drag the other side of the timeline mark to the millisecond line and you're done.

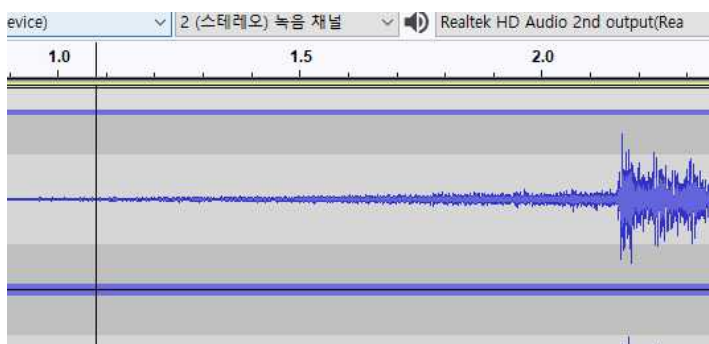


Step 3. Find the Key Sound and offset it

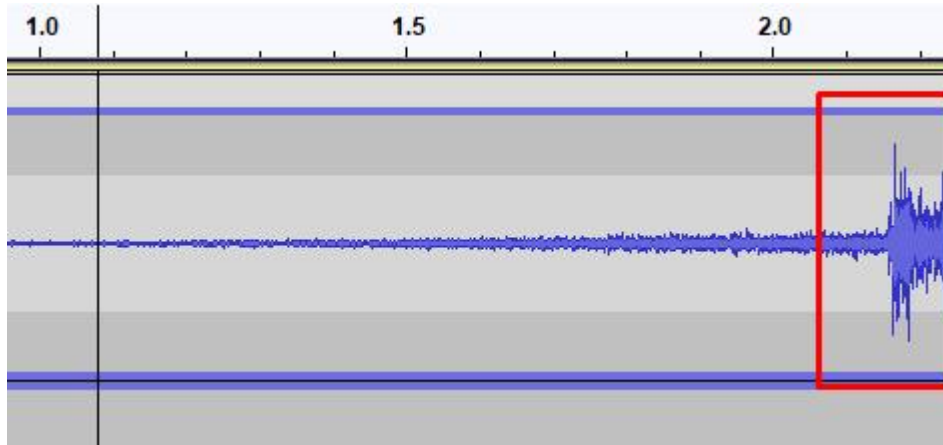
This is the most important and difficult part. **You should listen carefully to find the key sound of the music.** Any noise that starts the song, whether it is percussion, piano, or any other sound, is the key sound. What is important is that this will be the sound that lines up with the first note of your chart

a) Find the Key Sound

So we marked where the chart should begin, but where is the key sound?

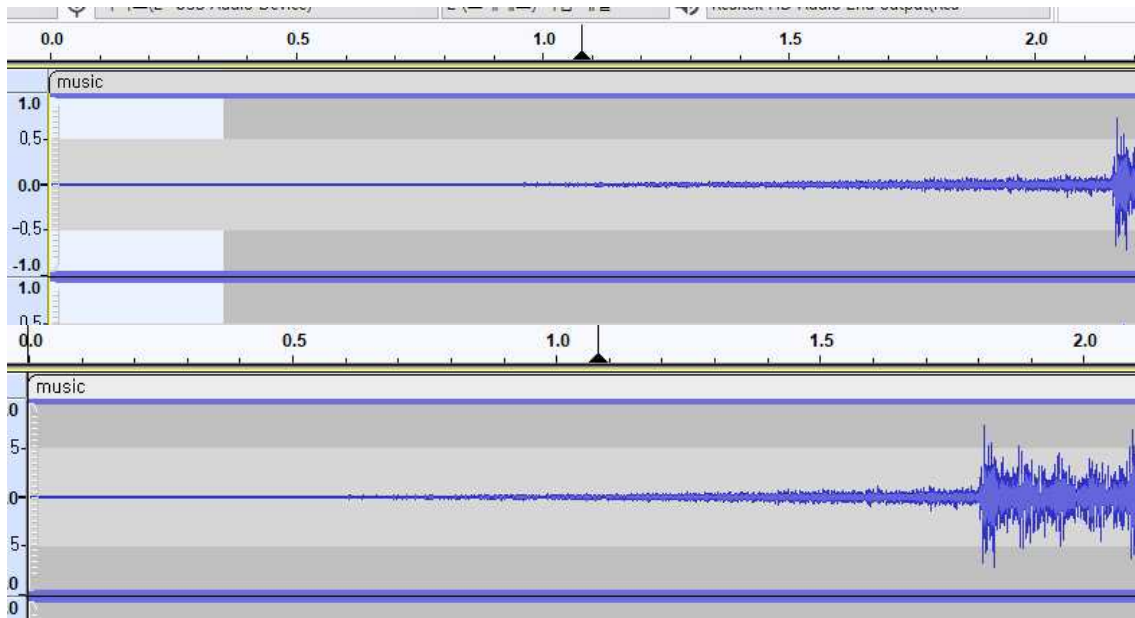


It's right there. You will notice that the waveform expands a noticeable amount. **Most songs will look like this.** With enough practice, you will be able to locate the key sound of a song easily.



b) Drag the waveform to meet the key sound to the mark and delete.

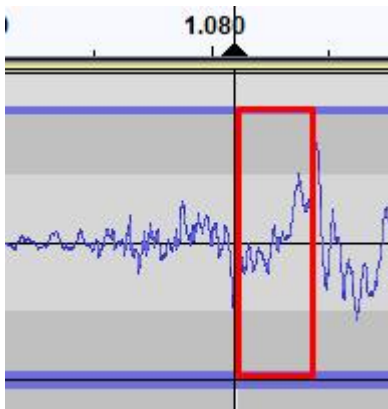
Get the key sound closer to the marked location and press delete. If you've deleted too much, you can undo it with CTRL+Z.



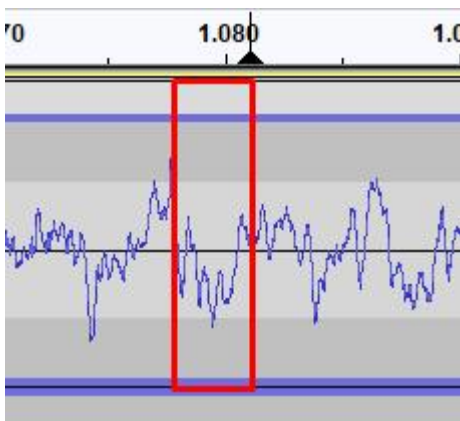
c) Trying to offset it correctly!

If you want your chart to play properly, **you absolutely have to make sure the offset is correct**. For better accuracy, you can use the zoom and slow-down features of uBmplay to ensure the offset is correct.

For example, this one is too far to the right from the marked location (+30ms.) **This will cause a lot of LATE greets when playing.**



This one is too far to the left from the marked location (-30ms.) **This will cause a lot of EARLY greets when playing.**



It is important to reduce the margin of error as much as you can. You can change the playback speed of the music in Audacity in order to find the key sound easier and more accurately.



2. Pattern Design Tips

This section will be providing tips for patterns. You should already know about the individual note types and their use cases from the tutorial document. **If you don't know about them, please read the tutorial first.** Many charts will have unique patterns **because the music is not always the same**. For this reason, you can try to be creative and make your own designs, however, **these patterns are my recommendations**.

1. Common Enemy Rush (Basic Pattern)

a) Section by Section Stream



"XODUS" (Master 11)

After the medium 1 enemy rush ends, a medium 2 enemy rush begins. This is what the tutorial refers to as **"switch by sections"**. When your song has the same section twice, **you can place medium notes for the first part and change the note type in the next section. Also consider changing the note direction between sections.** Experiment with note types and directions until you get something you're satisfied with

b) Zig-Zag Stream



"XODUS" (Master 11)

By placing streams alternating between the top and bottom lane, you can create a zig-zag pattern like this. Generally, the zig-zag pattern follows 4 notes before alternating. You can alternate every 2 notes or even 1 note, but every 4 notes is the most common arrangement. You can experiment with other stream arrangements when alternating, **but please remember that making the chart comfortable to play is the most important thing.**

c) One-Lane Stream



"c.s.q.n" (Master 11)

I think this is the most enjoyable section of c.s.q.n. The one-lane stream has a focus on a single lane for a large stream before alternating to the other lane, generally between geminis or some other defining note. **This pattern is not recommended on easy charts** because it can be exhausting to play.



"Plumage" (Master 10)

You can try a pattern like this if you are avoiding the zig-zag pattern or if the stream is too short. This is generally recommended for a level 10-11.



"XODUS" (Hidden 12 / Master 11) (it's the same part)

If you think the pattern is too difficult you can nerf them how you see fit, but keep in mind that **it requires charting experience, so please start with an easy one!**

d) More References



Section by Section Stream "ULTRA MEGA HAPPY PARTY!!!" (Master 10)
youtu.be/VrqGP4qRMAg?t=17



Zig-Zag Stream "FREEDOM Dive ↓" (Master 10)
youtu.be/N02m_oFGMYs?t=139



One-Lane Stream "Nekojarashi" (Hidden 11)

youtu.be/tnireevq900?t=57



Combination of all patterns "Ultra Happy Miracle Bazooooka!!" (Master 11)

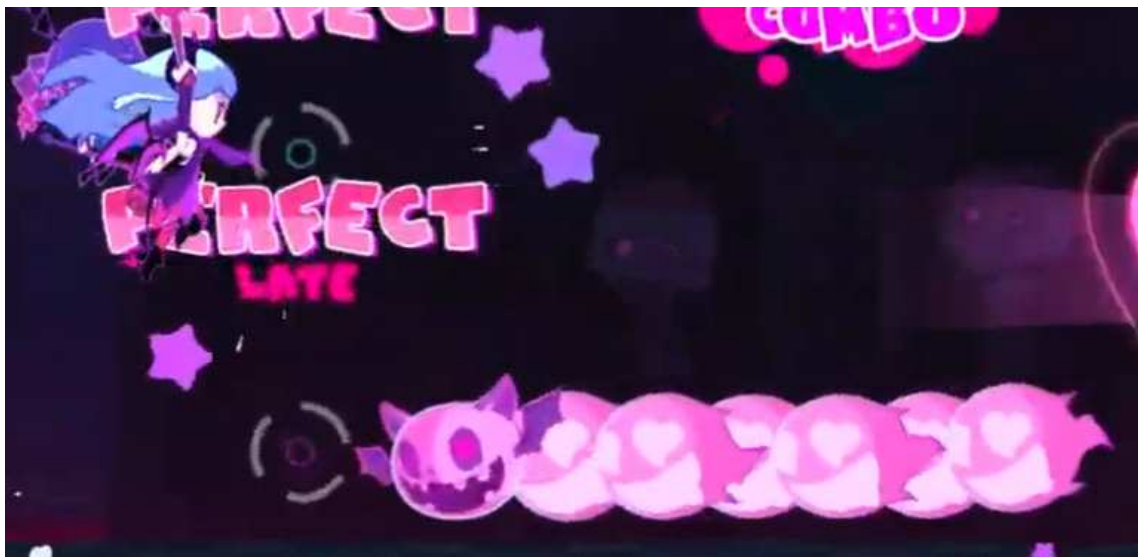
youtu.be/ln4OpYLrg8Y?t=62 (1:03~1:22)

2. Uncommon Enemy Rush (Advanced Pattern)

a) Hyper Stream



16th Stream in 272BPM "Punai Punai Genso" (Master 11)



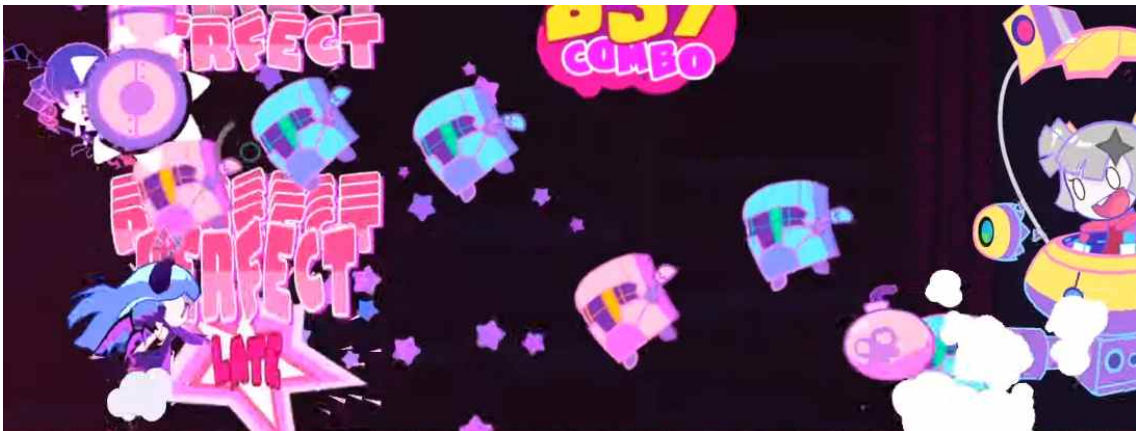
24th Stream in 202BPM "XODUS" (Master 11)

These patterns are very special and are never used for easy difficulties. It is not recommended to use these patterns for low BPM songs or easy charts. On the other hand, these can add a lot of difficulty to high BPM charts. But be careful, **they'll break your fingers.**

b) Hammer/Raider Stream



"ouroVoros" (Master 11)



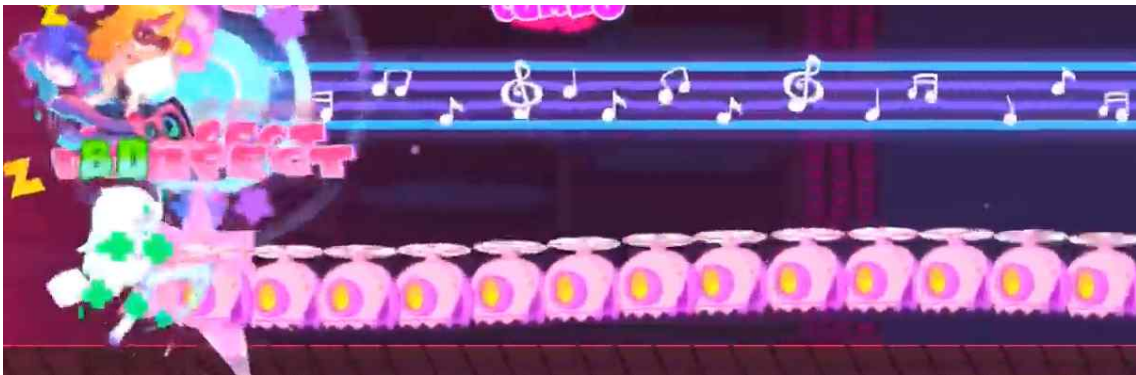
"Re : End of a Dream" (Master 11)

By taking the other common stream patterns and changing the note types to hammers or raiders, it can create a similar gameplay experience while being more difficult to read even though it plays the same. This pattern can be used to increase difficulty or for strong or loud sections to give an impact. **They can make the chart very difficult, and it can be very easy to make a messy section with this pattern.** So make sure you are being consistent and use them in moderation.

c) Extended One-Lane Stream



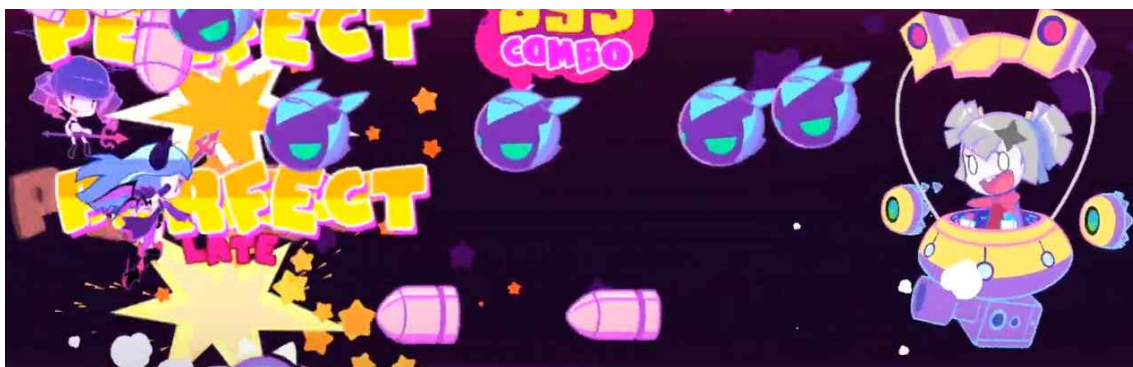
"Better Graphic Animation"(Master 11)



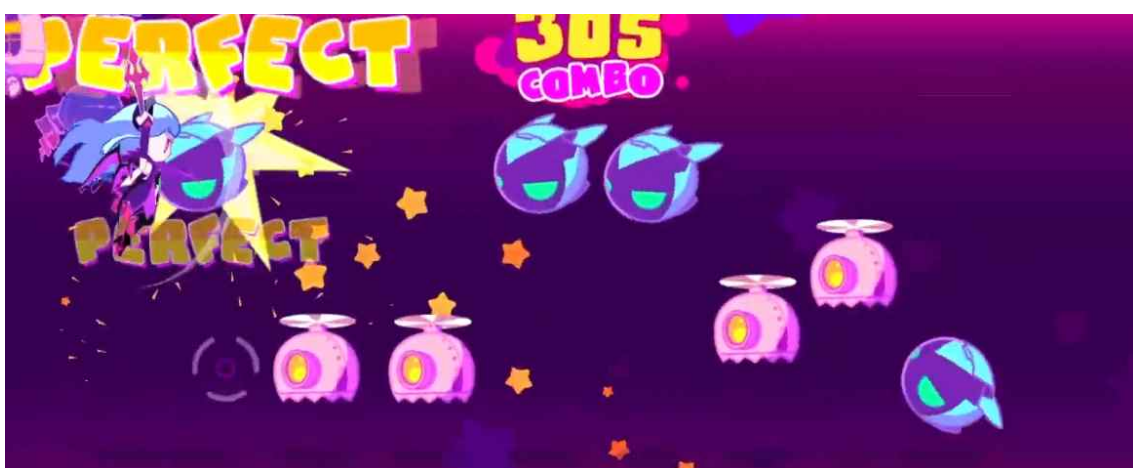
"RUBY:LINTe"(Master 11)

This is a **simple but powerful pattern** and can wear out the players' hands very quickly. This pattern is generally chosen for extreme difficulty and can replace a long masher. However, this pattern will only work on a section of the song that can call for a long stream.

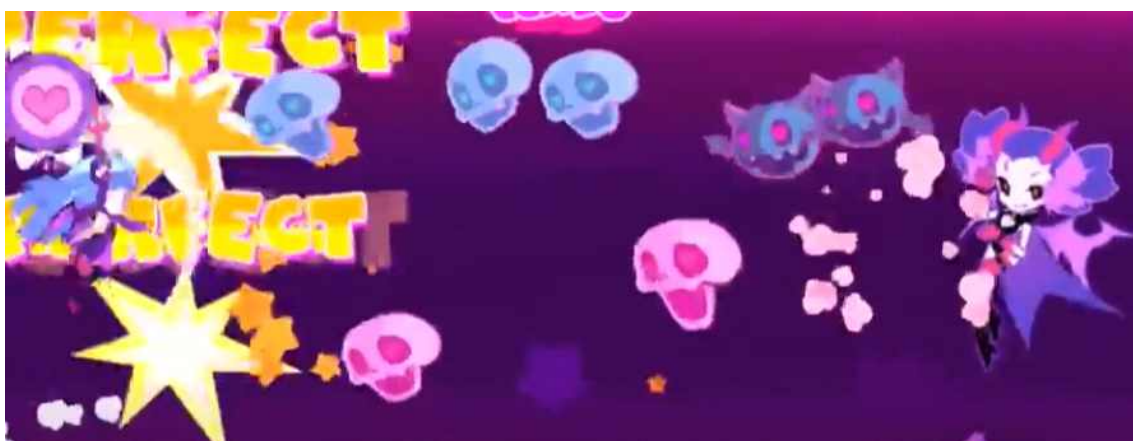
d) Expert Section by Section Stream



"Blah!" (Master 11)



"EMOMOMO" (Master 10)



"ouroVoros" (Master 11)

This pattern is generally present on long stream sections of the song, generally when the boss is present. This is because it is generally used for the chorus or highlight of the song. The notes can switch lanes at any point to create a difficult yet fun section. **This is one of the hardest patterns to chart**, so do your best and good luck with making your own fun section!

3. Note arrangement tips

1. Starting and Ending With Simplicity

If you want to chart a lot of sounds in the beginning, you could do it, **but It's hard to make it look clean and comfortable**. Even the large majority of difficult charts start with a calm, slow beginning. It is like warming up before the chart truly begins.

a) Simple and Harder



"Ultra Happy Miracle Bazooooka!!" (Master 11)

In this part, the notes could be charted to the melody, but this charter placed them on the beats instead, and added more notes after this:



They also added collectible notes for more sound without requiring extra inputs.



Later, they placed the notes to the melody as intended.

Simple start -> Slightly increase note density -> Note count increase -> Begin charting melody as intended

However, there's another case.

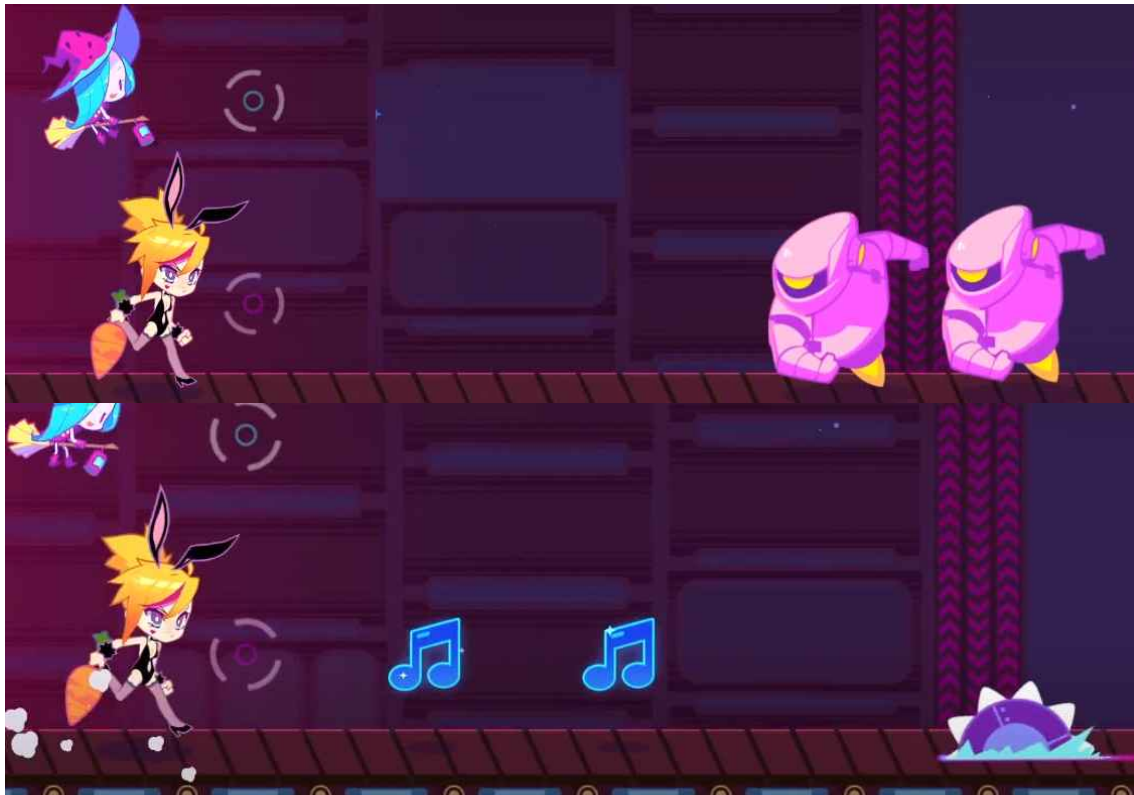


"XODUS" (Master 11)

On the other hand, XODUS starts with 16th streams immediately. However, this can also work **because the music allows it**. When listening to the music, you will notice XODUS has a very extreme start. **If you want to make a chart with a strong, fast start, you should pick a song that fits the idea.** However, I am afraid to recommend this. **If you are new to charting, it'll be very difficult for you to keep it looking clean. Keep it simple when you're starting.**

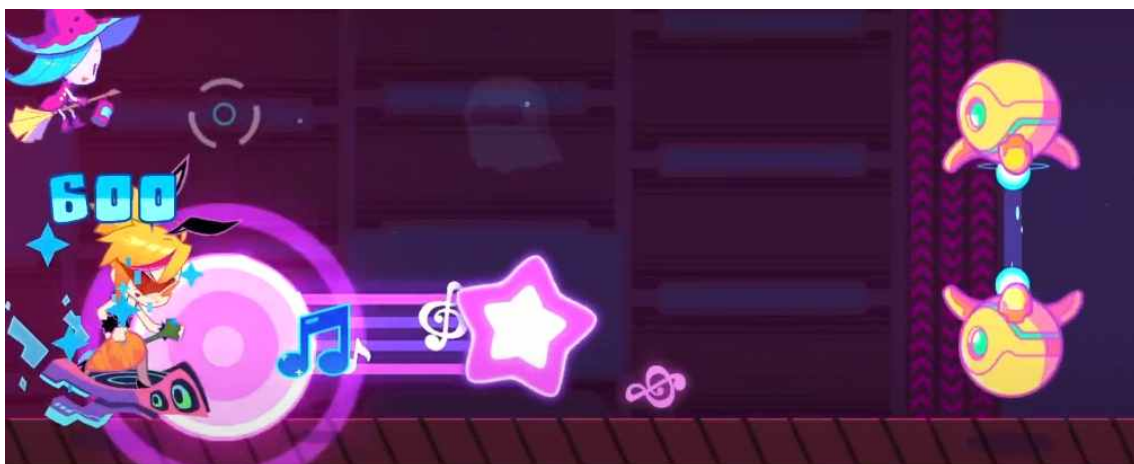
b) Focus on the "Ground Lane" First

It is good to begin your chart by focusing solely on the bottom lane. This makes it simple to play and you will be able to easily flip the arrangement afterwards.



"Comet Coaster" (Master 10)

This is the beginning of the chart, and everything is on the ground. It looks so simple and comfortable.



When the music calls for it, the chart will progress and the other lane will come in. Here, a gemini can be seen.

c) You can flip the arrangements

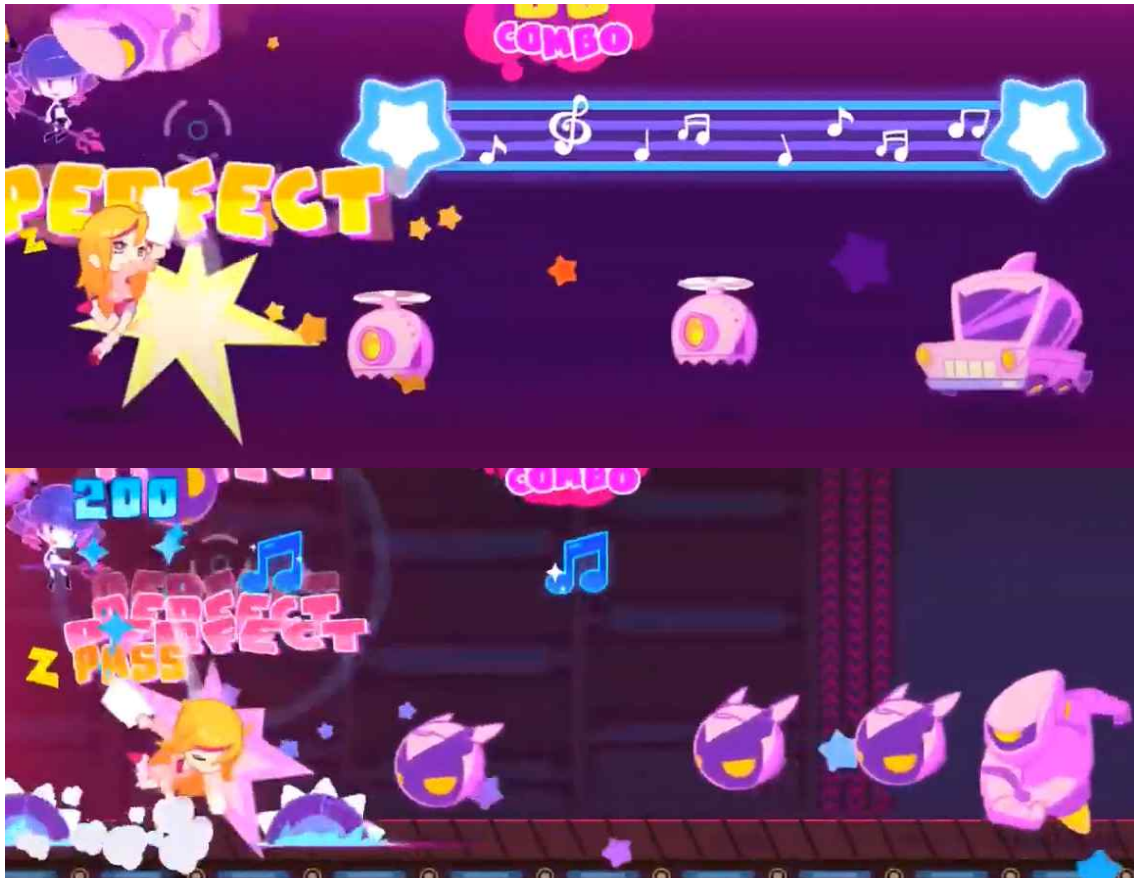
While it might not be the only answer, it is a simple method for charting. You can start with flipping the arrangement immediately



"Blah!" (Master 11)

In this case, it doesn't need to focus on the ground because **the music has a loop section**. Therefore, a better charting method would be to copy the arrangement for the last section and flip it.

d) Repeating the arrangement



"GOODRAGE" (Master 11)

You do not always have to flip the arrangement. In this chart, it repeats the same arrangement rather than flipping it. However, they added additional notes and gears on it. This also works fine

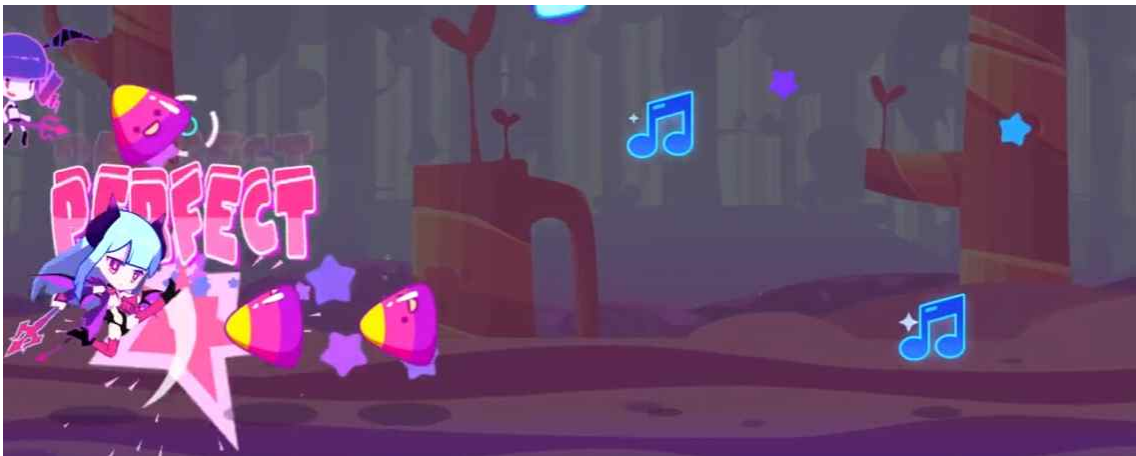
All of these styles (a, b, c, d) can be used for every slow or calm section of a song, not only at the start or end of the chart. You should practice recognizing sections that can use these arrangements.

e) More References



Start with Focus on the Ground "Kill My Fortune" (Master 10)

youtu.be/jfSiZW9RDlk?t=8



Start with Flip the Arrangement "Punai Punai Genso" (Master 11)

youtu.be/dVUGF5xn1vs?t=7



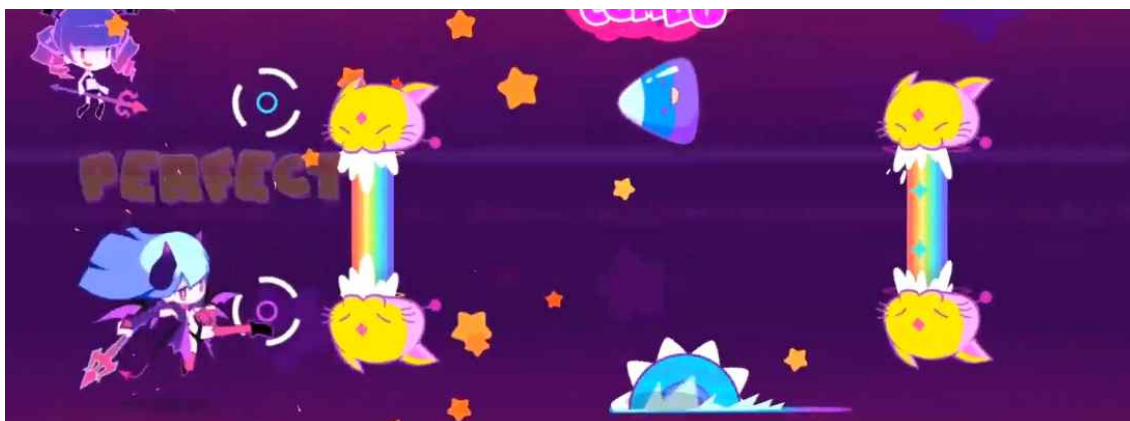
Start with Keep the Arrangement "Marry me, Nightmare" (Master 11)

youtu.be/r-kPQmeZg0w?t=12

2. Dividing Sections

There are a lot of ways to divide sections of your chart, **but you should find and use the method that feels the most natural to play for your chart.**

a) Divide by Geminis



"Punai Punai Senso" (Master 11)

This is the most common section divider. You can place geminis between sections to divide them nicely. **It doesn't matter how long the section is as long as the sections are divided clearly.**



"Blah!" (Master 11)



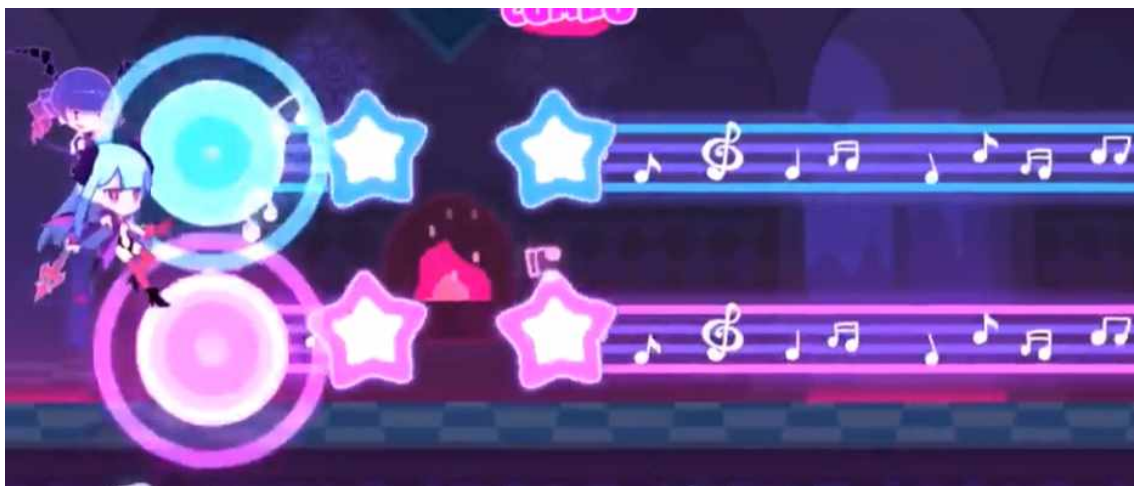
For example, "Blah!" has a long boss section; **it takes around 12 seconds for the section to be divided by a gemini.** However, there is nothing wrong with this because the section is completed before being divided.



"Eelias" (Master 11)

You can also cut the sections immediately with geminis when there is a lot of heavy impact sound. In this case, you can finish the section by using other loud enemies (large 1 or 2, hammer, raider), or you can use boss attacks.

b) Divide by Tall Holds



"ouroVoros" (Master 11)

You can use tall holds instead of geminis, it works on "wub wub"-like sounds like GOODRAGE, or a strong string sound. You can also place them for the simple start/end instead of geminis.

c) Divide by Large Enemies



"Maxi" (Master 10)



"Plumage" (Master 10)

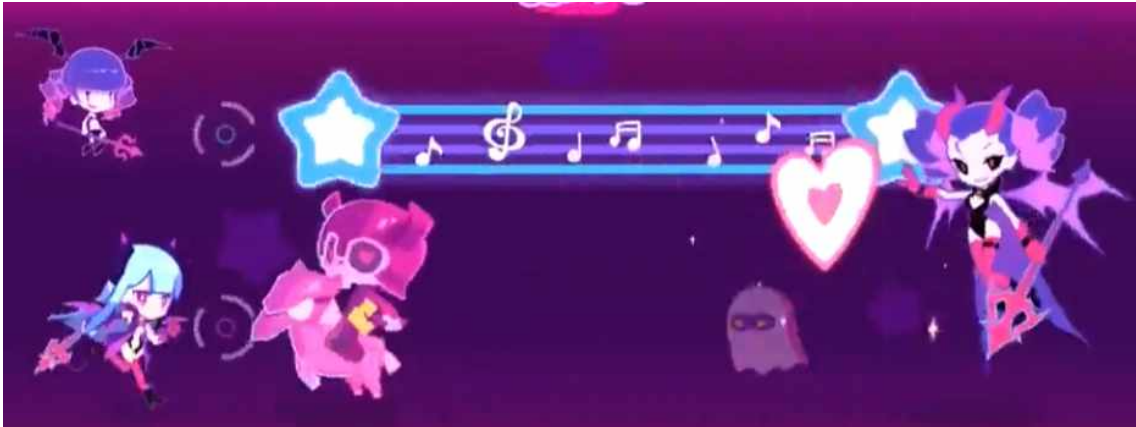
You can use large enemies to divide the section. This arrangement is mostly used to avoid changing the arrangement and pattern itself. **This can work on any chart if you want to make it easier.**



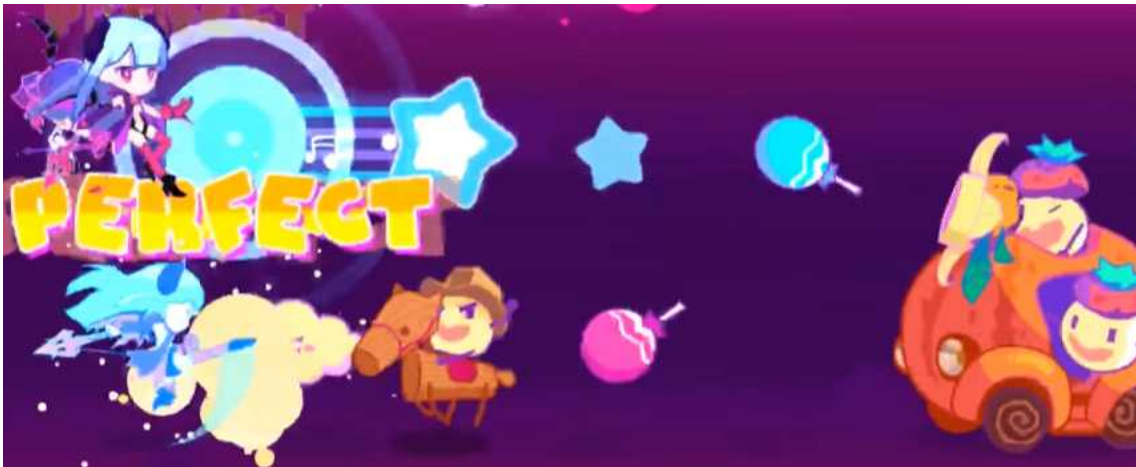
"Angel Halo" (Master 11)

You can also divide sections with hammers or raiders. **However it is an uncommon practice and can make the section unnecessarily difficult.** Be careful using this.

d) Divide by Hold + Large Enemies



"ouroVoros" (Master 11)



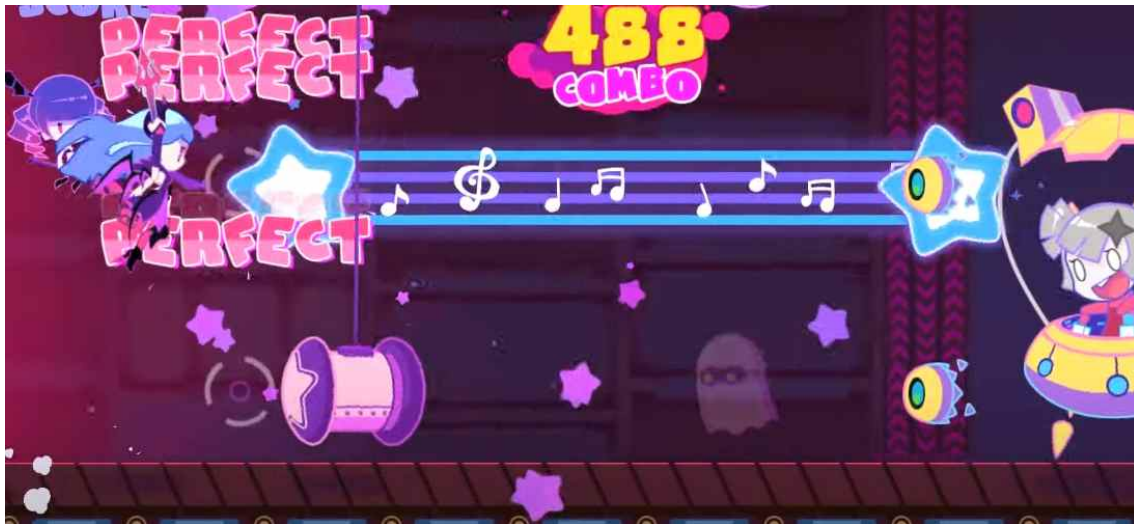
"Kyouki Ranbu" (Master 11)

You can use this divider when the melody and percussion match up and should be hit at the same time



"Alice in Misanthrope" (Master 10)

The same effect can also be created with small and medium notes like this.



"Brain Power" (Master 10)

You can also use hammers and raiders alongside the hold note instead, but be careful doing this. In this case, **they placed the large enemies at the early section before the hammer**, using them to avoid making the section too boring to play.

e) Divide by Masher



"Blah!" (Master 11)

You can also divide sections with a masher or multiple mashers. Sometimes, gimmicks like these instead of using geminis can make the chart more entertaining to both play and experience. The gimmicks can include the countdown (songs that say 3, 2, 1, GO, with the masher combo matching the number). **But if you overuse these gimmicks in your chart, it can become really repetitive and boring. It needs to be used in moderation.**

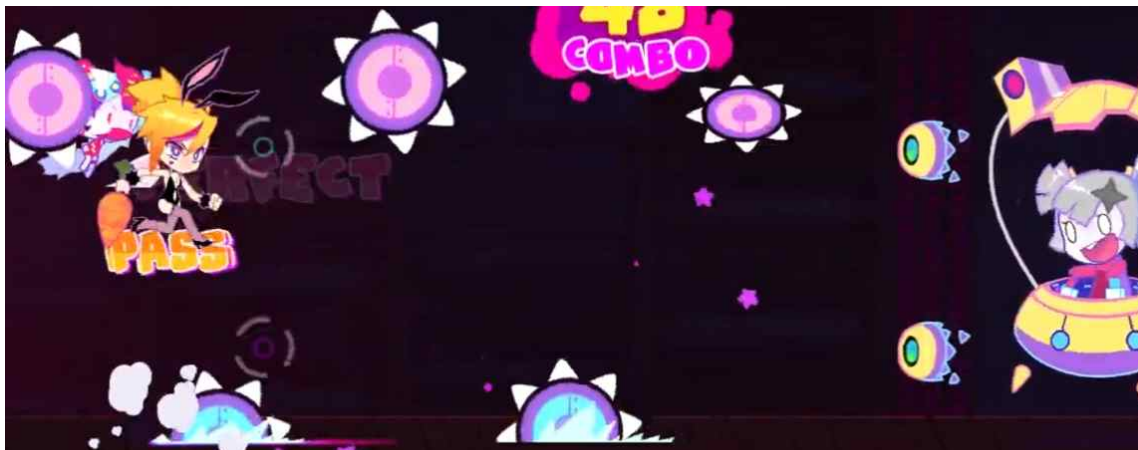
3. Special Arrangements

These are more advanced, less common arrangements that are good to know. They can add flavor to your chart and create a more fun experience, only if you use them in moderation and when the song calls for it. **However, it can be too risky to attempt during your first time charting.** There is no harm in trying, but it will take some time to get the hang of using these properly.

a) Gear Rush

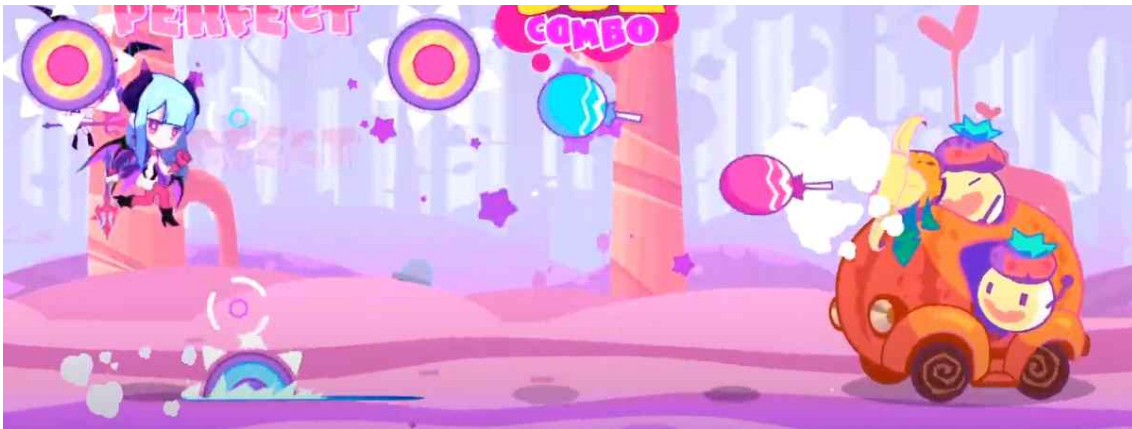


"Chrome VOX" (Hidden 11)

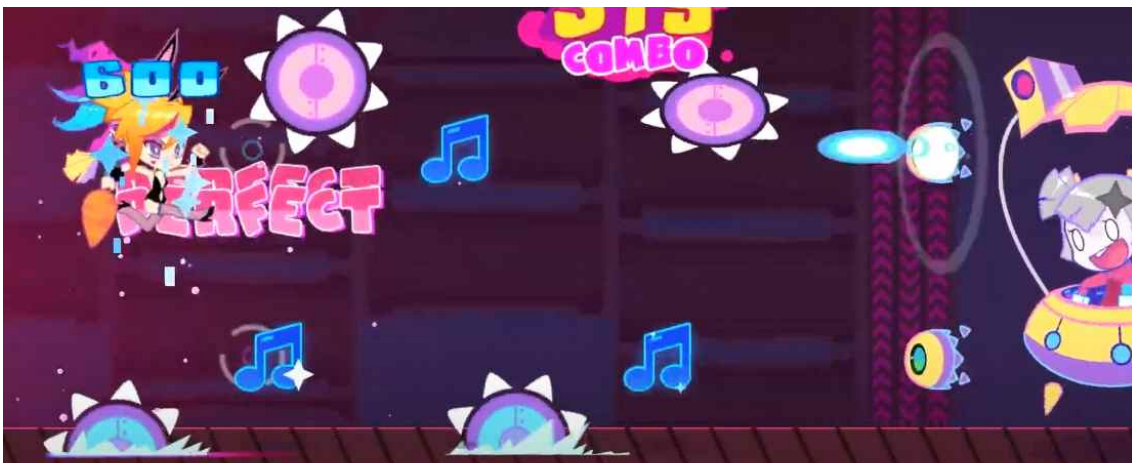


"Dr.Techro" (Master 11)

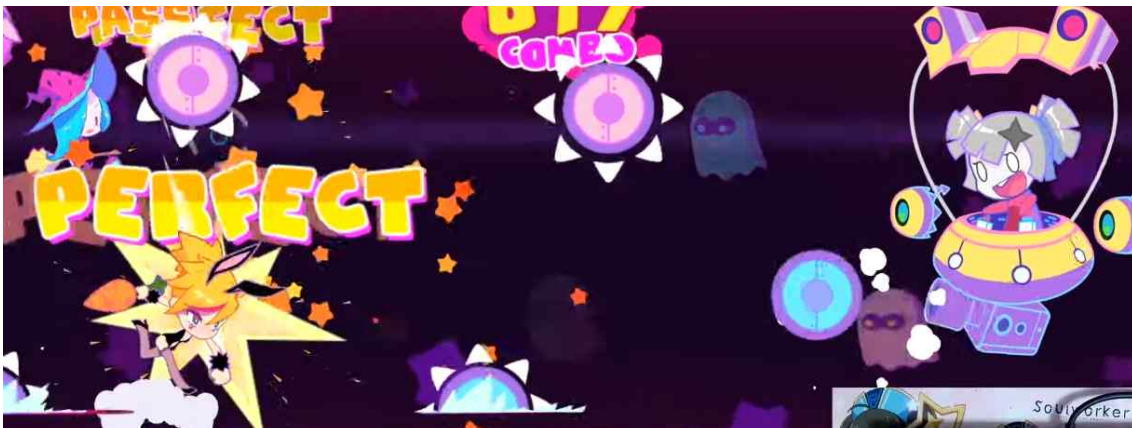
Gear attacks can be terrifying, and are one of the crazier arrangements for sure. It focuses on dodging the gears rather than hitting enemies, and sometimes collectible notes and ghosts can be added for more flare and density. **Gear rushes are not universally loved by Muse Dash players, but they can be used correctly to make a chart entertaining if the song calls for it.**



"Plumage" (Master 10)



"Skyward" (Master 10)



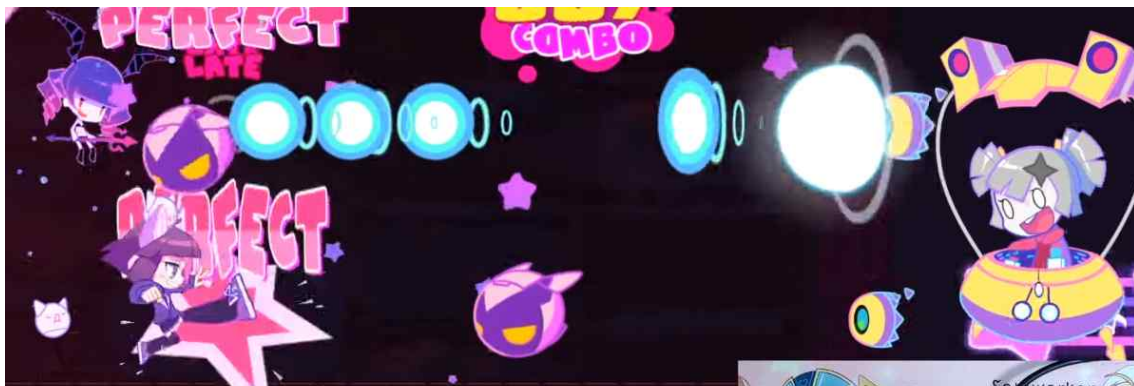
"Angel Halo" (Master 11)

These are examples of proper usages of the gear rush. There's no spam and no damage to the arrangement. **If you can use it in moderation, it can be a fun section.** However, I highly recommend you only attempt this once you get more charting experience. No matter what, it always depends on the music!

b) Polyrhythm Section



"EMOMOMO" (Master 10)



"Chrome VOX" (Master 10)

Charting a separate instrument or sound for the melody on each of the two lanes is considered "polyrhythm". This is one of the most difficult arrangements for charts. As the BPM rises, the difficulty does as well. If you want to try this arrangement, **you should understand how to place the notes that make the arrangement clean and fun to play.** Abuse of this arrangement can create unplayable or unfun, outright difficult charts.



"Cthugha" (Hidden 11)

Cthugha has one of the craziest polyrhythm arrangements in Muse Dash. This is acceptable because it is a **HIDDEN CHART**. However, it is recommended that you do not chart like this unless you are able to comprehend and play at this level.

Here are some good references for polyrhythm sections.



"Heracles" (Master 10)

youtu.be/ed1Cq8R35u4?t=117



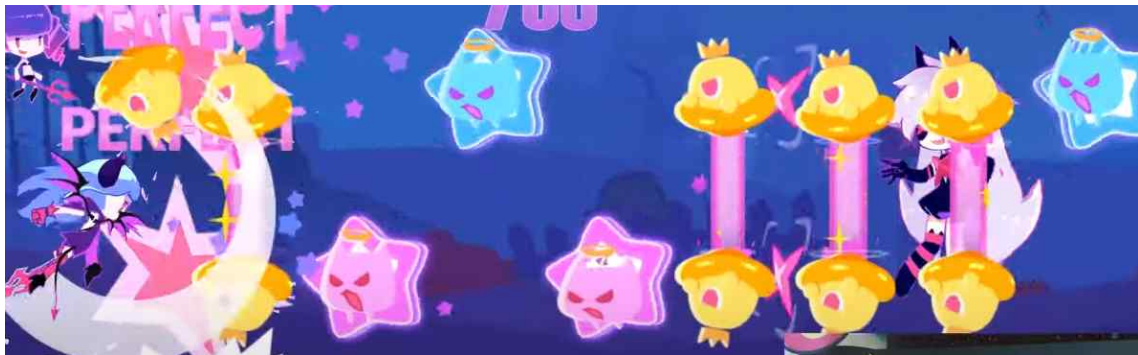
"Better Graphic Animation" (Master 11)

youtu.be/Jx_XgG0G1_M?t=52

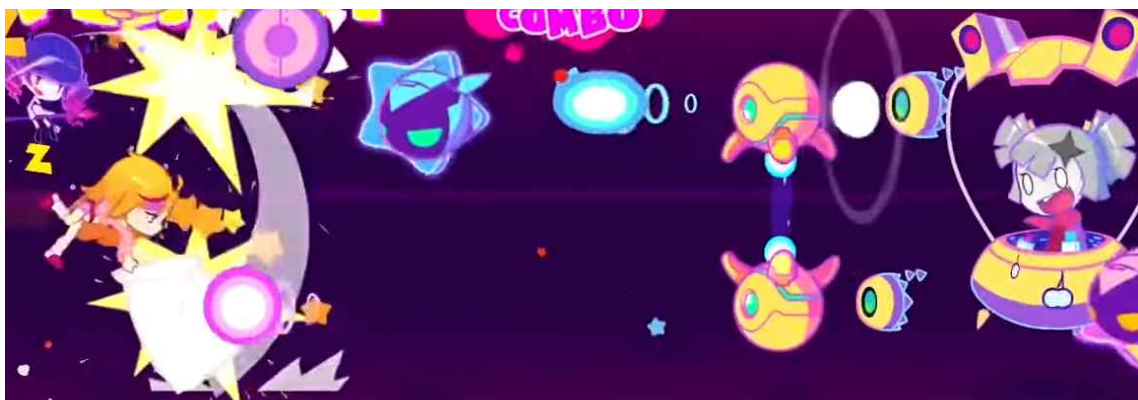


"8bit Adventurer" (Master 10) (this polyrhythm is a really hard one)
youtu.be/ydwtDY1X6Mw?t=78

c) Overlap Rush



"Nightmare" (Master 11)



"Cyaegha" (Hidden 11)



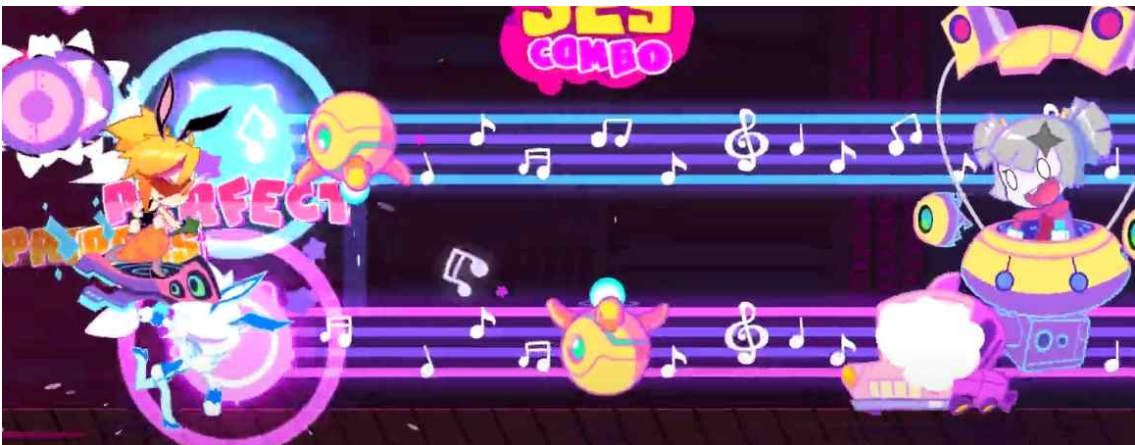
"BATTLE NO.1" (Hidden 11)

This has become a more common arrangement for charters as of recent. It can make an easy section a lot more difficult by overlapping the notes with ghosts or hold notes, requiring double inputs on the same lane. Because this arrangement is a newer idea, whether it is inherently good or bad to use is up to the charter. **This arrangement is optional and can be a very easy way to increase the difficulty of a chart, but avoid overusing this arrangement.**

4. Using Visual Effects



"Super Battleworn Insomniac" (Hidden ?)

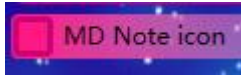


"DataErr0r" (Hidden ?)

Muse Dash got the majority of its visual effects "7th Beat Games" collaboration update. These can make the charts creative and interesting, but can also be annoying or irritating because they can be distracting during gameplay. **For this reason, you have to decide whether your song is fit for visual effects. Overuse of visual effects can either make your chart unreadable, unplayable, or possibly rated as "★?" difficulty.**

How to add visual effects

Uncheck the "MD Note icon" setting



Scroll down in the list and you will be able to find visual effects. They should be

1J: Hide Notes	24:	25: Hide Background
1K: Unhide Notes		26: Unhide Background
1L: Hide Boss		27: Screen Scroll UP
1M: Unhide boss		28: Screen Scroll DOWN
1N:		29: Screen Scroll OFF
1O: Scene Switch (Space Station)		2A: Scanline Ripples ON
1P: Scene Switch (Retrocity)		2B: Scanline Ripples OFF
1Q: Scene Switch (Castle)		2C: Chromatic Aberration ON
1R: Scene Switch (Rainy Night)		2D: Chromatic Aberration OFF
1S: Scene Switch (Candyland)		2E: Vignette ON
1T: Scene Switch (Oriental)		2F: Vignette OFF
1U: Scene Switch (Groove Coast)		2G: TV static ON
1V: Scene Switch (Touhou)		2H: TV static OFF
1W: Scene Switch (DJMAX)		2I: Flashbang START
1X:		2J: Flashbang MID
		2K: Flashbang END
		2L:

5. Rating Difficulties

First, you need to know where you fall in terms of skill. If you can only play easy charts, you should only create easy charts. **This is because you will likely only understand how to chart in your skill level. Similarly, when you can play hard charts and want to make an easy chart, it might be difficult for you to underchart the song.** Rules for differentiating easy difficulties and hard difficulties do exist, **but they are not always the answer. This game still has a lot of irregularly rated charts.** Please don't get too serious about this.

★1



"Magical Wonderland More" (Easy 1)

All of the notes are just half notes. That's it, that's the whole chart. In a very, very rare case, a 4th or 8th note might appear, but this is almost never the case.

★2~4



"Dreaming Girl" (Easy 2)



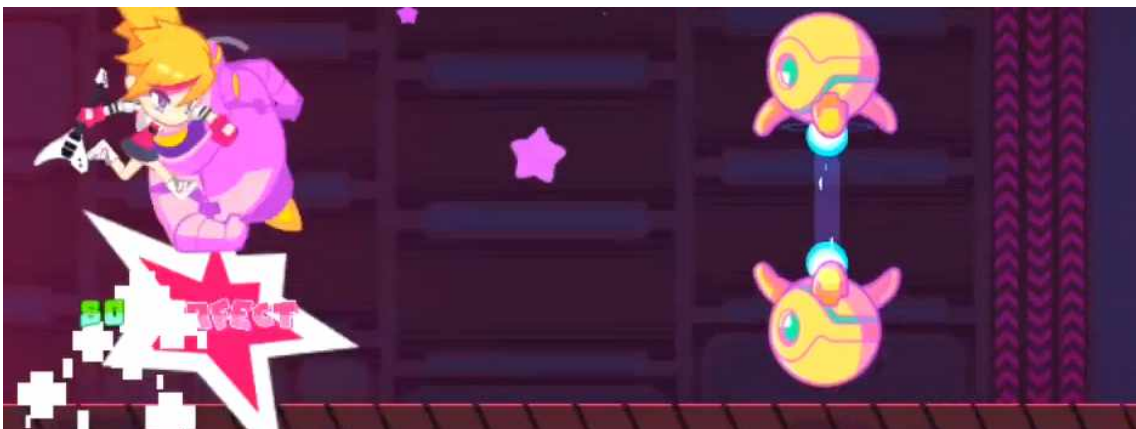
"Oriens" (Easy 3)



"Brain Power" (Easy 4)

In this difficulty range, **4th note "streams" are more common!**
 The specific difficulty is measured by how many 4th note streams appear.
 If 8th note streams are present, it is very likely going to be above a level 4.

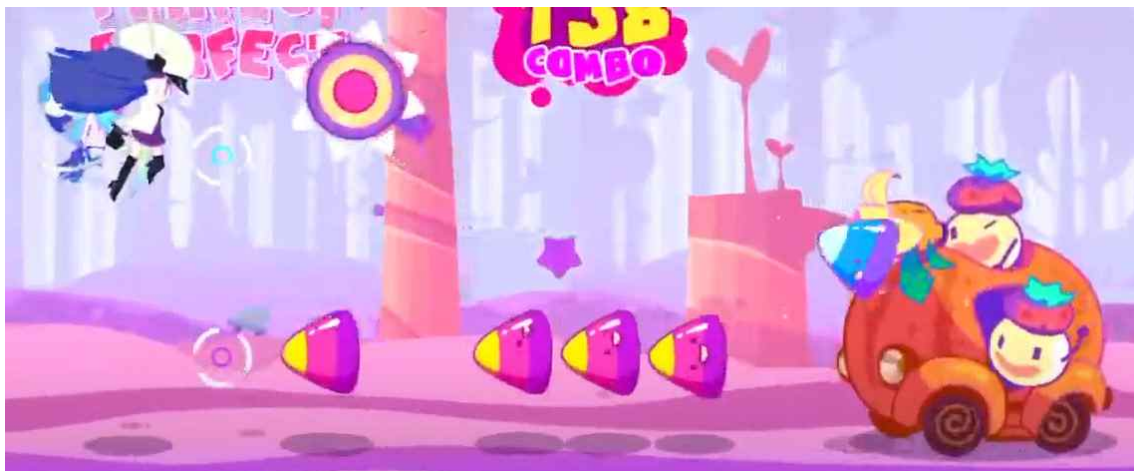
★5~7



"Bass Telekinesis" (Hard 5)



"Shinsou Masui" (Hard 6)



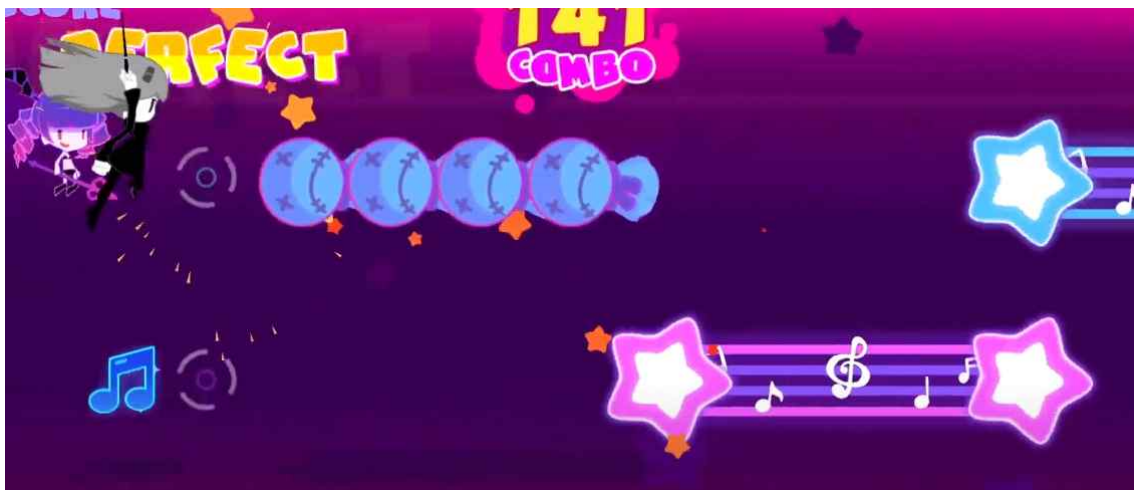
"Spring Carnival" (Master 7)

In this difficulty range, geminis and ghosts are much more common. Hammers and raiders appear on occasion, and a lot of streams are changed to 8th note streams. Sometimes 16th note streams can appear in level 7 charts, but the note variety will be about the same.

★8~9



"XING" (Master 8)



"XODUS" (Master 9)

In a level 8 chart, a lot of streams have become 8th note streams, but only 3-4 notes can be placed in a single stream, and 4-note zig-zag streams are still not present. However, you can use hold notes or mashers in place of these.

In a level 9 chart, you can use any patterns freely now, but try to avoid using difficult arrangements for a long period of time. If the song has a fast BPM, some streams still can be simplified with a hold note or masher, and some easy, simplified special arrangements can appear

★10~★11



"Halcyon" (Master 10)



"Punai Punai Genso" (Master 11)

Level 10 to level 11 is one of the largest difficulty gaps. Some charts can be too hard for a level 10 and too easy for a level 11.

In a level 10 chart, they still follow the basic chart design, generally having a higher BPM or note density. **However, some charts use special arrangements for the additional challenge.** (Chrome VOX, Final Step!)

After level 11, most charts will have their own unique patterns and arrangements. Generally, arrangements like these need a lot of practice in order to learn and play properly. **You can make use of all of the Advanced Patterns and Special Arrangements in this difficulty.**

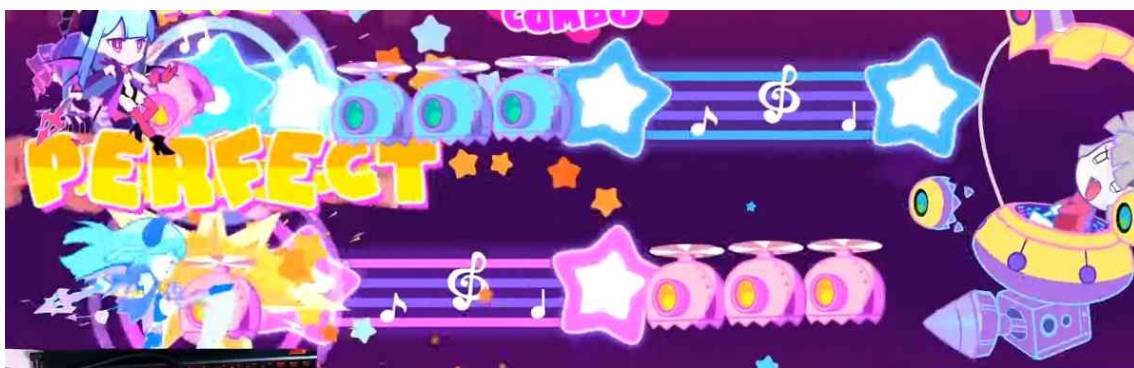
★12



"XODUS" (Hidden 12)



"ouroboros -twin stroke of the end-" (Hidden 12)



"FREEDOM DiVE ↓" (Hidden 12)

In level 12 charts, every arrangement is a variation of the other arrangements with the sole purpose of being difficult. **You will see a mix of advanced patterns and special arrangements with overlapping notes or more complex, less playable arrangements. However, they do generally still try to follow the basic design surprisingly.** I am still not able to play charts of this difficulty yet, but look at how wonderful they are. **However, I'm afraid to say "make a nice level 12". Please don't try to do this without experience...**

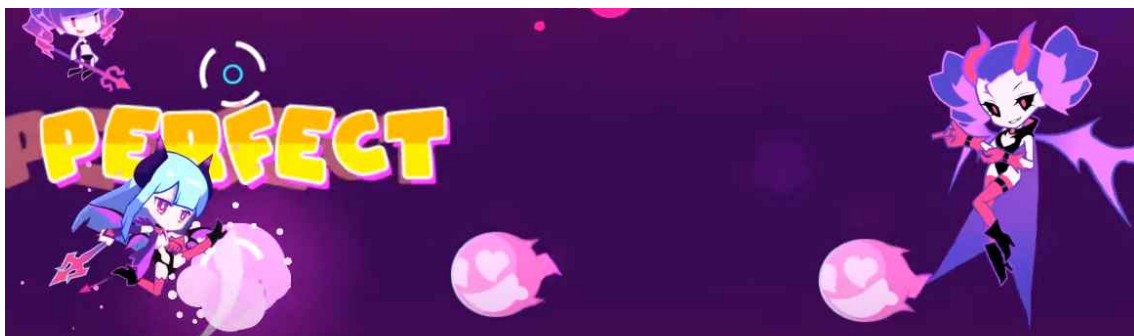
★?



"ペロペロ in the universe" (Master ٪)



"umpopoff" (Hard ٪)



"Heracles" (Master ٪)

The "?" difficulty is for gimmick charts that have interesting visual effects or a unique, unorthodox concept. You can go crazy with visual effects, use notes for different purposes than they are usually used for, and you can try to replicate charts from other rhythm games to the best of your ability. **But these are just for fun and having something completely special.** This is the go-to difficulty if you have a funny idea or concept for a chart, but you should not create a chart for the sole purpose of being "?" rated.

6. Making a Hidden Chart & Smol Tips

How to make Hidden Chart

It is now possible to create hidden difficulties for your chart. [map4.bms](#) is used for this. You can make them for any chart using these steps

First, open the info.json and you can find the new lines.

```
"name": "?",  
"author": "?",  
"bpm": "?",  
"scene": "scene_01",  
"levelDesigner": "?",  
"levelDesigner1": "?",  
"levelDesigner2": "?",  
"levelDesigner3": "?",  
"levelDesigner4": "?",  
"difficulty1": "0",  
"difficulty2": "?",  
"difficulty3": "0",  
"difficulty4": "?",  
"hideBmsMode": "CLICK",  
"hideBmsDifficulty": "0",  
"hideBmsMessage": "balls",  
"unlockLevel": "0"
```

"hideBmsMode" is the method of unlocking the hidden chart.

"CLICK" : Default, the hidden chart will activate by spam-clicking on the difficulty text.

"PRESS" : The hidden chart will activate by pressing and holding on the chart's cover art in the song select.

"TOGGLE" : The custom chart will activate by switching between all three difficulties back and forth like ouroboros hidden. This requires 3 difficulties.

"hideBmsDifficulty" is where the hidden difficulty will be unlocked at.

"-1" : It will show the hidden difficulty as a special chart. It removes the other difficulties and stresses the hidden chart.

"0" : This is default, it changes the hard or master difficulty.

"1" : It changes the easy difficulty.

"2" : It changes the hard difficulty.

"3" : It changes the master difficulty.

"hideBmsMessage" " is the text box that will appear when the hidden chart activated. Any message can be put here

If you don't want to make a hidden chart, delete these from the info.json.

```
"name": "?",
"author": "?",
"bpm": "?",
"scene": "scene_01",
"levelDesigner": "?",
"levelDesigner1": "?",
"levelDesigner2": "?",
"levelDesigner3": "?",
"levelDesigner4": "?",
"difficulty1": "0",
"difficulty2": "?",
"difficulty3": "0",
"difficulty4": "?",
"hideBmsMode": "CLICK",
"hideBmsDifficulty": "0",
"hideBmsMessage": "balls",
"unlockLevel": "0"
```

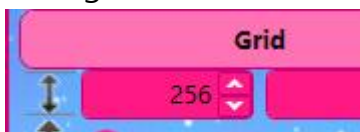
```
"name": "?",
"author": "?",
"bpm": "?",
"scene": "scene_01",
"levelDesigner": "?",
"levelDesigner1": "?",
"levelDesigner2": "?",
"levelDesigner3": "?",
"levelDesigner4": "?",
"difficulty1": "0",
"difficulty2": "?",
"difficulty3": "0",
"difficulty4": "?",
"unlockLevel": "0"
```

How to make Tap Holds and Overlap Notes

Go to grid



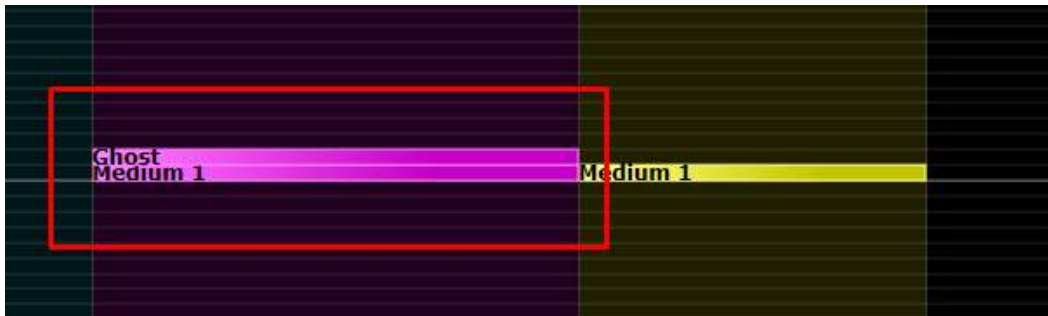
Set grid to 256



Zoom it until you can see the grid clearly and drag the hold note 1 grid space forward. It should look like this if you've done it correctly.



This same method is used to make overlapping notes. Place the ghost down somewhere and then move it to the grid space right after the note. You can also use tap hold instead of ghost. **Directly overlapping the notes will cause an error when saving, so they must be 1/256 grid space apart.**



How to put a Tap Hold inside of a Long Hold

Place the first end of the long hold without dragging it.



Place the other end of the long hold anywhere you want. This is now identical to a long hold note and appears that way in-game



Now you can move tap holds in-between the long hold note.

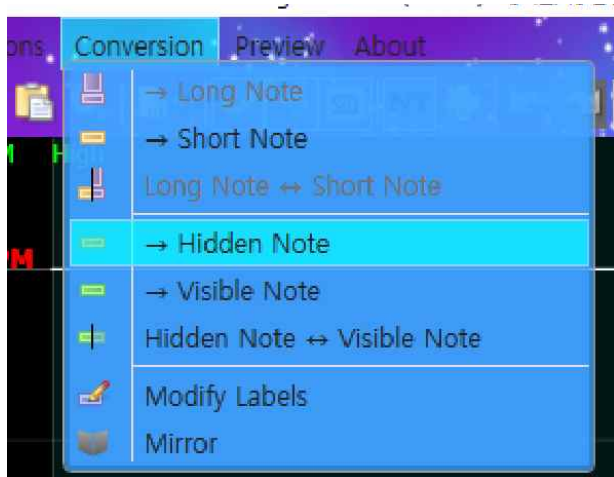


How to add a Heart onto an enemy

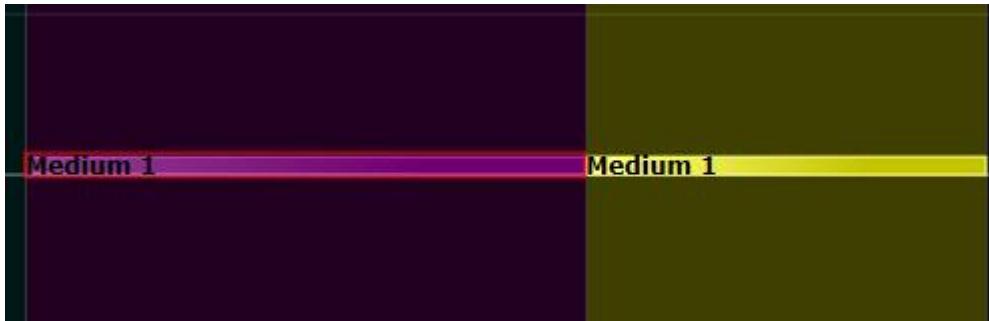
Select the note you want a heart on



Coverison -> Hidden Note



This will convert the note into a note of that type with a heart on it.



7. The Best Way to Improve

The best way to learn how to chart by is studying official charts, discovering interesting patterns and arrangements, implementing them onto your own chart, and experimenting creatively. Becoming a master charter can be a long process. However, if you like charting and have motivation to improve, continuing to practice and getting feedback on your charts is the best way to gain experience. **Most people will start out with messy or underdeveloped charts, just like I did before, so don't be afraid of showing your chart to me and the community.**

Thank you for reading this and have fun with charting.

by Hole
2022.04.06