

How to Map the Drum Game (osu!taiko)

by doulph

Basic Stuff

This part is for beginning taiko mappers who need to be familiar with all the mapping stuff in a typical taiko map. Also includes some ranking criteria technical stuff, which isn't really relevant in any other section.

New mappers can skip some of the later points (BNs will check them anyway)

More experienced mappers can just skip this part, tbh

Drum Notes (Don/Ka)

- **Don (d) = red notes** for low pitch notes, **Ka (k) = blue notes** for high pitch notes.
 - When mapping **k**, mappers usually prefer to use the clap hitsound instead of whistles.
 - Apart from pitch, note colours can also be changed when you want to emphasize certain changes in the song (e.g. switch to a different layer/instrument), or if you want to add some variation to the map.
- **Finishers (D/K)** are BIG notes that can be played with a double tap. They are used to emphasize strong notes or sounds in the song.

Held Notes (Spinner/Slider)

- **Spinners** are used for held notes and are played by alternating **d** and **k**.
- **Sliders (drumrolls)** are used for stronger held notes and are used somewhat less often than spinners.
- Sliders can be added with a finish to make the slider BIG, for EVEN STRONGER held notes.
 - Sliders are played by hitting slider ticks, usually at every $\frac{1}{4}$ or $\frac{1}{8}$ beat depending on the bpm. For swing maps (mainly $\frac{1}{3}$ and $\frac{1}{6}$ rhythms) with sliders, the slider tick rate should be changed from 1 to 3 for slider ticks to have proper $\frac{1}{3}$ snapping.
 - Be careful if you change slider velocity, as this will unsnap any slider ends.

Timing Points

- **Uninherited timing points (red lines)** are used to indicate the starting timing of a section or the whole map (bpm and time signature).
 - Changes in bpm affect the baseline scroll speed. The higher the bpm, the faster the scroll speed.
 - If there are multiple red lines for variable bpm songs, omitting the first bar line should be done where necessary. Barlines should only appear at the start of every measure (4/1).
 - The starting red line could have a negative offset to align the beat with Nightcore mod. Additional red lines could be added to reset nightcore beats, if they do not align every 4 measures (16/1). (this is kinda annoying to check though)
- **Inherited timing points (green lines)** are used to toggle hitsound volume, kiai time, and slider velocity (sv).
 - Hitsound samples are usually set to normal, not soft. Louder or more intense parts of the song should be toggled louder for better audio feedback.
 - Kiais are usually toggled for intense parts of the song, such as the chorus or drop. Kiais usually have denser rhythm or faster sv to emphasize the increase in song intensity (though there are exceptions).
 - **Slider Velocity (SV)** affects the scroll speed of the map (how fast the objects move). This is usually done in higher difficulties where you have another (visual) way to express changes in the song, apart from rhythm.
 - A good tool to apply SV changes is [jimage's slider velocity tool \(svt\)](#). [Nifty's guide to svt](#) can be helpful to get started.

The base scroll speed is usually kept at 1.4, but there may be some niche cases where the base scroll speed can be adjusted:

- $1.4 * 0.5 = 0.7$ - half bpm
- $1.4 * 0.75 = 1.05$ - swing map (converts $\frac{1}{3}$ spacing to $\frac{1}{4}$ spacing)
- $1.4 * 0.75 * 2 = 2.1$ - double bpm swing map
- $1.4 * 2 = 2.8$ - double bpm

HP/OD Settings

- **HP value** determines how much HP each note gives the player for passing your map. The higher the HP value, the less HP each note gives.
- **OD value** determines the window of time the player has to tap to get high accuracy. The higher the OD value, the narrower the hit window of each note.
 - HP and OD usually change inversely, unlike standard. HP/OD values are usually roughly this range, though this can depend on the song:
 - Kantan (OD3, HP8)
 - Futsuu (OD4, HP7)
 - Muzukashii (OD5, HP6)
 - Oni (OD5.5, HP5.5)
 - Inner Oni (OD6, HP6)
 - You can check other similar ranked taiko maps to get an idea of HP/OD values to use. For example:
 - Longer maps with more notes usually have lower HP values to make it easier to pass the map (e.g. stream maps).
 - Shorter maps with fewer notes usually have higher HP values (e.g. 30 seconds kantan = HP10).

Tags

- **Tags** help players find your map more easily through keywords. It usually includes the genre and language (e.g. japanese, pop, j-pop, jpop), relevant official metadata (e.g. album and artist names) and GDers' names (if any).
 - Metadata should come from official sources (e.g. album website). Putting your metadata sources in a note can be good as it may save BNs some time and effort.

Background and Video

- Is your **background** partially obstructed by the taiko playfield (e.g. character faces are blocked)? You can shift the bg up or down by going to the map's .osu files and changing the last value of "0,0,<bg_name>,0,**0**" under the [Events] header. If the top is blocked, increase the number (positive number). If the bottom is blocked, decrease the number (negative number).
- If you want to include a **video** in your map, use [Jerry's osu!taiko Video Resizer Tool](#).

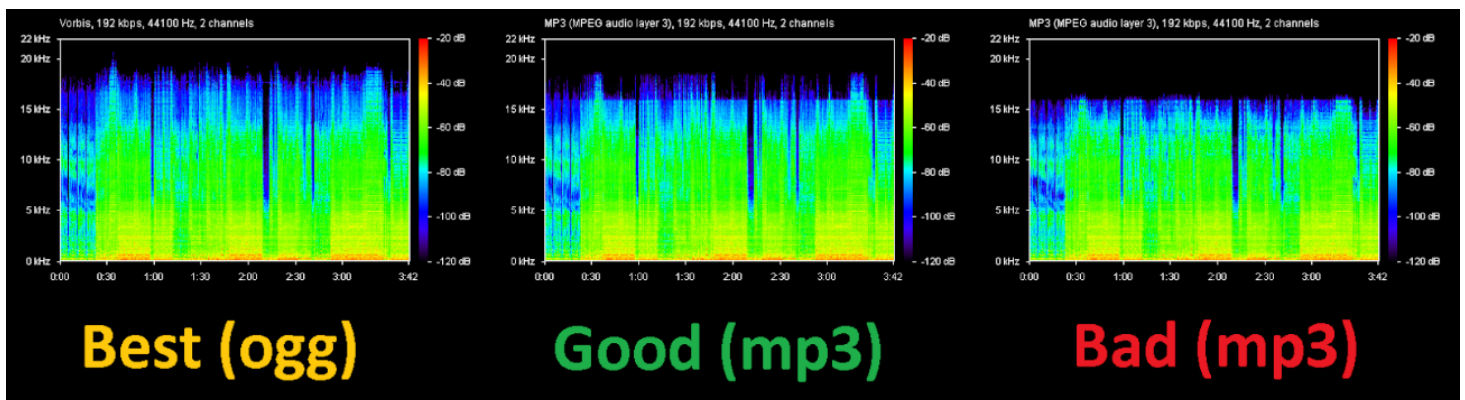
Audio

- There are two main audio file types you can use: **MP3s or OGGs**. If your goal is for rank, make sure you get the highest quality audio that you can find that is still rankable (not too low, not too high).
- For **MP3s**, ensure that the audio is using the highest possible quality while keeping an average bitrate $\leq 192\text{kbps}$. You can use a tool such as [Audacity](#) to downsample the audio bitrate if it is too high. To check the quality (average bitrate) of an **MP3 file**, you can use an audio spectrogram analyzer such as [Spek](#).

For 192kbps MP3 files, 18kHz peak cutoff is good. If the peak cutoff is 16kHz or lower, the audio was probably downsampled to a lower bitrate earlier and you should find better audio or convert to a lower bitrate using Audacity (e.g. 128kbps) to avoid file bloating.

- If you have a lossless audio format of the song such as FLAC, converting the file to **OGG** is usually better instead of MP3.

Even though using OGG files for audio in beatmaps is less common, they can be better than MP3s as they usually have a higher sound quality with a lower file size. An audio spectrogram comparison using Spek for different audio conversions (from FLAC):



To convert from FLAC to OGG, select the highest quality in Audacity while still making sure that average bitrate $\leq 208\text{ kbps}$. Quality 6 is good.

Mapset Verifier or [foobar2000](#) can be used to check the average bitrate of OGG files (see [Jerry's guide](#) for more details). While Spek can be used to view the audio spectrogram of OGG files, it cannot check the average bitrate properly.

Intermediate Stuff

How to get good at mapping? How do people actually rank stuff?

The common new mapper problem: you want to rank your map, but you are not sure what makes a map “good” or “rankable” in the first place.

Rankability is straightforward (although tedious to check), simply make sure your map follows all the rules of the [ranking criteria](#), and almost/all the guidelines as well, and your map will be quite close to ranking.

Making a map “good” enough for rank, however, requires a bit more than that. This ambiguous part is probably what frustrates a lot of new mappers (and maybe even experienced mappers lol).

These are some possible interpretations of a “good” map (excluding song choice):

- The map plays well (e.g. clean patterns)
- The map represents the song well (e.g. good sv changes)
- The map is creative and unique (though maybe not too inted/overcooked)
- The map is/looks fun to play

The first two are somewhat easier to talk about, since these points have some objective measure to them. For example, it’s probably bad to map a finisher to a weak note, and you wouldn’t map $\frac{1}{3}$ notes in the song as $\frac{1}{4}$ patterns (to name a few examples). I’ll discuss these two points first.

The third point is somewhat subjective, since they are completely dependent on mapper inspiration and creativity (e.g. whether the mapper can cook). I’ll discuss this point towards the end.

The last point is pretty much completely subjective. However, if you do everything right for the first 3 points, this point will likely follow as well (probably?)

Playability

The [ranking criteria](#) already covers this, so you also should **refer to the RC** for this. For example, proper snapping, rest frequency and other restrictions per diff, note overlaps, etc.

Difficulty	Recommended Rhythms	Minimum Required Rests	Bad/Questionable Patterns (not in RC)
Kantan	Main 4/1 and 2/1, 1/1 for intense parts	3/1 rest needed every 36/1	1/2 doublets (this may be too inted for the BNs)
Futsuu	Main 2/1 and 1/1, 1/2 for intense parts	2/1 rest needed every 36/1	1/3 doublets is extremely sus imo
Muzukashii	Main 1/1 and 1/2, less frequent 1/4 for intense parts (doublets, mono triplets)	3/2 rest (or three 1/1 rests in a row) needed every 20/1, whichever fits the song better	1/4 ddk, kkd, dkd, kdk (very sus) This is comfortable only at lower bpm, and even still you might need rests Rare 1/4 mono 4-plets need a rest afterward
Oni	Some 1/1 and 1/2, more common 1/4 patterns (more intense parts = more frequent or longer 1/4)	1/1 rest needed every 20/1	1/4 patterns >5-plets are sus, >7-plet if the map is slow (players are still learning 1/4) 1/6 and 1/8 might be sus (depends on song) 1/4 ddK and kkD can be sus if the middle note is filler (not actually in the song)
Inner Oni++	No restriction (this is the good stuff)	Add more rests when needed e.g. add more rests when song is calm, or to balance difficulty, or for more emphasis	NO 1/4 finishers that start or end in same color dD, Dd, kK, Kk 1/4 Dk and Kd are mildly sus

For swing maps (assuming the swing beat is 1/3 and not 1/6), change the snap requirements from 1/2 to 2/3, and 1/4 to 1/3. Technically 1/3 is possible for Futsuu, but it is quite sus imo - it's hard to balance rhythm progression from Muzu to Oni. My swing maps for Futsuu use 2/3 at most, and they are ranked fine.

Note that the RC is based on 180bpm, so you can adjust the notes and rests guidelines accordingly if your map is very slow/fast (i.e. more/less of the denser patterns). Usually, this is done for slow maps (≤ 120 bpm) or fast maps (≥ 240 bpm). You can pretty much half the snapping required if the map is very slow (≤ 90 bpm).

One common issue among new mappers is having too few rests. For example, spamming 2/1 rhythms in Kantan without 3/1 rests at all, having not enough 3/2 rests (or three 1/1 rests in a row) in Muzukashii, not enough 1/1 rests in Oni, etc. Not having enough rests likely would overwhelm the intended player of that difficulty.

It is good to have rests that are more frequent than the minimum required amount of rests.

Rest guidelines should be broken only if it is literally impossible to remove a note for a rest in a section without the map feeling off / worse. In this case, you can try to make the section a little less intense to balance out the diff, or try to add a rest as fast as possible after the section.

[Naxess' Mapset Verifier](#) with [Hivie's MV Taiko Checks](#) is a very helpful tool for checking any rankability issues in your map. It is highly recommended using this to check your map first before asking for mods.

Song Representation

Basically, there are two important things here - **emphasis, and emphasis.**

A map should ideally be dynamic, reflecting the changes in the song. **Your goal as a mapper is to try to represent the song as well as possible. Always try to emphasize most, if not all changes in the song, along with any other prominent elements in the song.**

Here are some ways you could emphasize stuff:

- Note colour changes can be used for pitch/instrument/layer changes in the song.
- Finishers can be used for strong notes in the song.
- Rests (i.e. removing notes) can be inserted in less strong beats in the song to emphasize certain layers in the song more, rather than just spamming notes
- **Note density is the typical way to distinguish between intense and calm parts of the song. The higher the song intensity, the higher the rhythm density.**
 - For example, let's say you have a normal song that starts out calm and progressively builds up to the chorus/drop.
If you are mapping an Oni diff, something like this might work:
 - Intro (calm): mainly 2/1, 1/1, 1/2
 - Middle (normal): mainly 1/1, 1/2, some 1/4 triplets
 - Kiai (intense): mainly 1/2, more frequent 1/4 triplets, a few 1/4 5-plets
- **SV changes is another way to emphasize changes in the song. The more intense the section of the song, the faster you can make the objects move.**
 - There are exceptions, like lowering SV to the point where the map becomes a reading challenge.
 - In SV heavy maps, SV changes can also be used for pitch/musical layer changes or progression in the song.

From the points above, here are some bad examples which you should try to avoid:

- Copy-pasting exactly the same pattern, even when the song changes in rhythm, pitch, or instruments
- Using the same exact note density AND SV, in both calm and intense sections
- When the instruments in the song gets introduced / stops, but the note density doesn't increase / drop

Note that too much of a good thing can have the opposite effect, for example if you spam too many finishers or SV changes, nothing may actually get emphasized.

Improvization

Improvization is a really big part of taiko, however it is not entirely clear when improvisation is good or bad, and sometimes this might be extremely subjective (the checklist incident lol)

Yapping aside, improvisation is just used to pad the map into denser rhythms. This is more relevant for higher diffs, and not really used in the lower diffs. In this section, I'll give a particular definition to improvisation so that there's no confusion about what I'm referring to: **Adding rhythms where there are none in the song.**

As a rule of thumb, **for easier difficulties, always try to map the actual notes in the song first before doing improvisation.**

- Kantan has almost no improv, you are trying to simplify the map as much as possible.
- Futsuu has minimal improv, perhaps some long $\frac{1}{2}$ patterns for strong held notes.
- Muzukashii might have some improv (e.g. $\frac{1}{4}$ filler mono triplets for held vocals), but it might be limited if there are actual $\frac{1}{4}$ triplets in the song (e.g. drums).

Decide on what layer(s) of the song you want to emphasize, and use some consistency or logic when mapping.

Ideally, the main layer you are trying to map is the most prominent in the song. Any other layer should be a lower priority, though they can still be mapped (or dropped when the main layer is enough).

If two layers are prominent, you need to do a good balancing act between the two. In higher diffs, you can probably get away with mapping both layers, but it might be a bit more difficult in the lower diffs where you have to prioritize one over the other to keep the note density lower.

Improvisation becomes more common when you are mapping harder difficulties (oni and higher). Here, you need more notes to fill in the difficulty, where denser rhythms become the norm. As mentioned earlier about note density, more intense layers and parts are typically mapped denser.

A few examples:

- In typical j-pop oni diffs, you usually see more intense vocals are mapped with longer/denser patterns (5-plets or even 7-plets, compared to 3-plets for less intense vocals).
- In 5-6*+ tech maps, in contrast to the surrounding $\frac{1}{4}$ patterns, wub sounds are sometimes mapped as $\frac{1}{6}$ 4-plet.

That being said, you ideally do not want to overmap. The note density should still fit the general vibe/intensity of the song. If the chill part of the song is *extremely* chill, any top diff will still be mapped like a Kantan or a Futsuu for that section. (something like northern_limit)

Consistency VS Variation

Consistency is one way to make the map feel *clean*.

In general, **try to make your mapping consistent**. At least, as much as you can without the map feeling like copy-paste spam.

For example, keeping to one type of object or pattern (e.g. note/finisher color, spinner, slider, etc.) for a specific sound / instrument / layer in the song, both within the song and across difficulties (excluding guest diffs).

If the section of a song repeats itself, the mapped rhythm should be similar, or identical.

However, it might be a bad idea to keep both the rhythm and note colours exactly the same. That is pretty much copy-pasting, and might be seen as kinda lazy and a bit repetitive. Two ways of doing this is:

- Don't change the rhythm, but change the note colours a bit (easier)
- Change both the rhythm and note colours by a bit (more difficult, it might feel bad if you do it poorly or randomly without a set pattern)

This leads to the second point, which is:

Some pattern or note color variations can make the map more interesting to play.

This is especially important if the song rhythm is repetitive, as you still want the player to enjoy the map regardless.

However, make sure that the variation is supported by the song. If not done properly, changing the note colors or rhythm randomly (e.g. jumping between layers randomly) can make the map feel unpolished.

Try to find a nice mix of consistency and variation. Too much of either might be bad.

Creativity

This part is going to be the most vague part of the guide, since inspiration literally requires some amount of creativity out of the mapper, and is highly dependent on the song choice.

That being said, one of the main ways to be creative is to **come up with an overarching idea or a theme** - one idea that persists throughout the map, or come up with some other **ideas that make the map interesting, quirky, cool, or even a bit cute**.

Do not be afraid to do things that are slightly inted / cooked.

Examples

I'll list some of my maps and just showcase some of the potential gimmicks/ ideas/ cute stuff (only the top diffs):

1. [inabakumori - Lagtrain](#) (my first ranked map wow)

This map has some note colouring swap / mirroring ideas, for example **d****k****d** -> **k****d****k** and **ddk** -> **k****k****d**, or note coloring progression like **ddk** -> **d****k****k**, etc.

The most crazy part of this map is the section at 03:12:721, I literally spammed alternating double ½ finishers with double ½ vocals for almost 10 seconds, which is absolutely cooked lol

2. [Harumaki Gohan - Suisei ni Nareta nara](#)

This map is way more chill than the last one. Nothing too creative, but there are a few cute stuff in this map, for example:

- Mapping the doublets at 00:12:903 and 01:30:236 **d** **k** (which feels unresolved) compared to the final 03:48:903 **k** **d**
- Using the finishers 02:32:070, 02:33:403, 02:34:736, etc. for the video scene changes. Though this isn't really a creative decision, the mapping just happens to turn out that way, with the strong cymbals syncing with the scene changes

The most inted part of the map (which isn't even that obvious), was making the SV changes exactly the same for all the diffs (because why not?)

(Not really relevant, but I also slightly edited the video in this map to make the subtitles appear at the top, so that players can see the subtitles while playing)

3. [Camellia, Toby Fox - Flying Through A Starry Sky](#)

The first map that I made, this [23 slider mod](#) says it all. (I chose this as my first map because I thought it would be simple, but there's annoying BPM changes, and finding a good $\frac{1}{4}$ improv pattern took me really long to figure out as a new mapper lol)

In this map, I used $\frac{1}{4}$ **k****k****d** **k****k****d** **k****d****d** patterns in the kiai. At the calm ending, I repeated the same note coloring which had **K** **K** **D** > **K** **K** **D** > **K** **D** **D** finishers, with a bit of detached sv as well.

I kinda reused this idea in my more recent GD [Kairiki bear feat. Hatsune Miku - MELLOMELLOID](#) at 01:58:938, where I did detached finishers **K** **D** **D** **K** for the strong vocals and small notes **k** **d** **d** **k** for the weak echoed vocals, repeating the same note colouring. The note colouring is flipped at 02:04:520 for the different set of vocals.

4. [USAO - TAPIOCA](#)

An absolutely cooked sv map (with a bit of tech).

There is one gimmicky idea that persists throughout this map: the detached $\frac{1}{4}$ almost-mono streams for that screamy loud sound. (Whether this pattern is annoying is up to personal taste, but I personally like it and that is all that matters lol)

Other cool stuff in the song allowed for more ideas:

- the lower SV finisher spam parts near the intro - 00:18:801 and 01:34:021
- the $\frac{1}{8}$ doublets in the kiais with different SV changes - 01:25:240 and 04:00:655
- the section that decreases and increases in SV, with the second repetition being longer and more drastic - 02:58:021 and 03:16:75
- the fast unnatural barline at the end (for the vibes) - 05:11:484

Note that most of the ideas (except the last one) got repeated in the map. Repetition generally makes the ideas more cohesive and effective.

5. [Mitsukiyo - Yume no Kissaten](#)

A very cute jazz song for mapping swing. Since the song is quite chill and relaxing, I didn't want to use finishers in this map as they can be too loud. This meant that I had one less tool to use for emphasis, and SV changes were mainly used in place of that.

Advanced Stuff

The stuff I'm going to include here are more complex stuff that are not that necessary for ranking.

However, if you are planning to map more complicated stuff in the future (e.g. tech/sv heavy maps), this part might be somewhat useful (probably?)

SV Curves

To understand what SV curves are, let's first consider this scenario:

Let's say we are given 11 notes that are equally spaced, and we want to increase the SV from 1.0x to 1.1x. How might we do this?

The straightforward way to do this is a **linear SV change**, where each note changes by a constant (increase by 0.01x):

1	2	3	4	5	6	7	8	9	10	11
1.00x	1.01x	1.02x	1.03x	1.04x	1.05x	1.06x	1.07x	1.08x	1.09x	1.10x

This appears more or less fine. However, what if we decided to do a crazy SV map, with drastic SV changes?

As an exaggerated example, let say we do an SV increase from 0.1x to 1.1x instead:

1	2	3	4	5	6	7	8	9	10	11
0.1x	0.2x	0.3x	0.4x	0.5x	0.6x	0.7x	0.8x	0.9x	1.0x	1.1x

Seeing these notes in game, you realize that the first few notes appear to change by a LOT, whereas the final few notes are much less drastic in comparison.

In actuality, note 2 is 2 times (200%) faster than note 1, but note 11 is only 0.1 times (10%) faster than note 10. This is a HUGE difference, and this SV effect might not be what you actually want in your map.

On the other hand, if we try decreasing SV instead, we find that the first few notes do not change that much, but the last few notes change by a LOT.

If you don't like this SV effect, are there any other alternatives?

If you have taken a look at the slider velocity tool (svt) earlier, you might have seen two other SV curves: exponential and polynomial.

Exponential SV changes make the SV of the current note relative to the previous notes. For example in the previous SV increase example from 0.1x to 1.1x, the exponential SV increase would look like:

1	2	3	4	5	6	7	8	9	10	11
0.10x	0.13x	0.16x	0.21x	0.26x	0.33x	0.42x	0.54x	0.68x	0.86x	1.10x

Here, each note increases such that the current note is around 1.27x faster compared to the previous note.

Polynomial SV changes

Let's visualize the changes below:
(add graph...)

Gimmicks

Other Guides

If you want to learn more, here are some other mapping guides by other mappers:

Basic

1. [Default Guy's Taiko Mapping YouTube Playlist](#) (*)
2. [Metzo's Taiko Mapping Basics video](#)

Intermediate

1. [JarvisGaming's A Comprehensive Guide to Mapping Taiko](#) (*)
2. Nifty's Guide to SVT (*)
 - a. [Basic](#)
 - b. [Advanced](#)
3. [Jerry's Things to look out for before requesting BN Checks](#)

Advanced

1. Nifty's live mapping videos:
 - a.