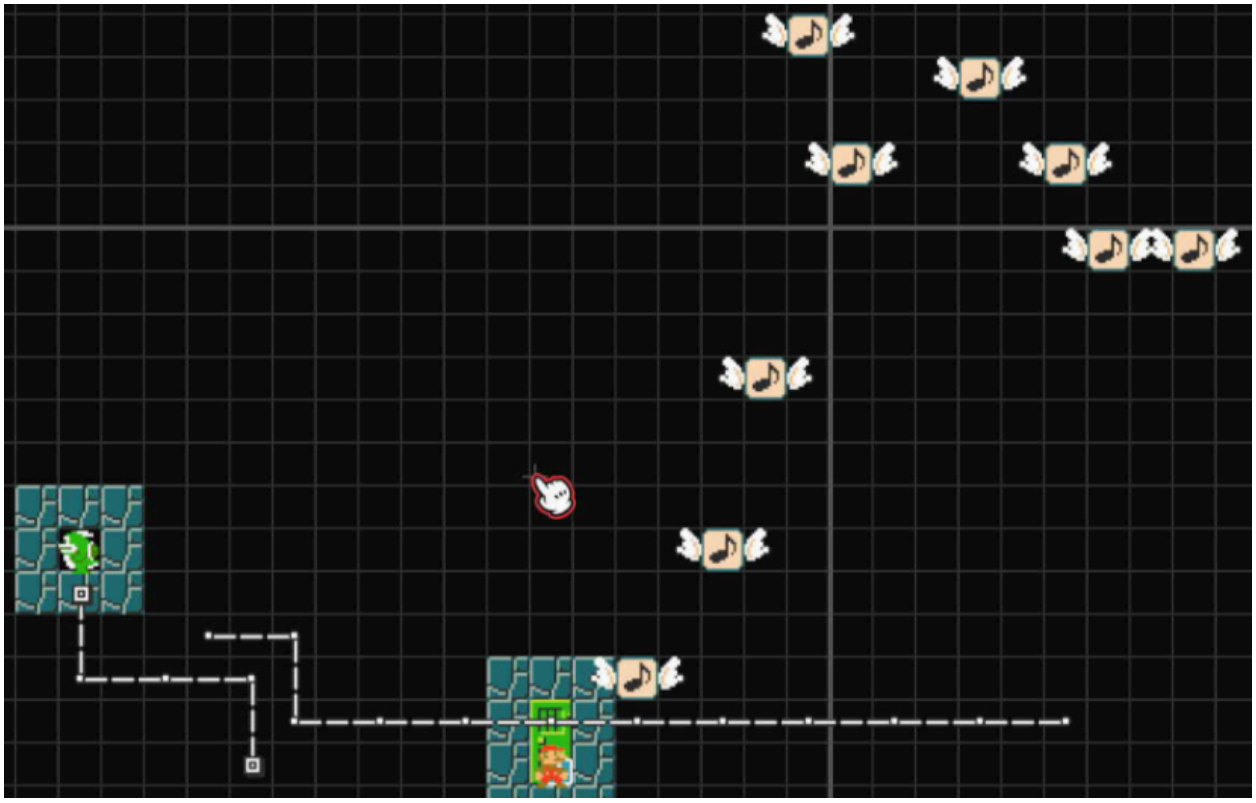
Track Music

Part 1: Basic Track Music

For a basic track setup, start with winged note blocks going left on horizontal tracks. (You can also use unwinged blocks, and everything will be half speed.)

Make a track block for each note in your melody. The height of the note block determines the pitch, and the horizontal position determines the rhythm. Every tile you move right moves forwards one 8th note in time (at 165 BPM). Here's the bass line to Michael Jackson's *Beat It*

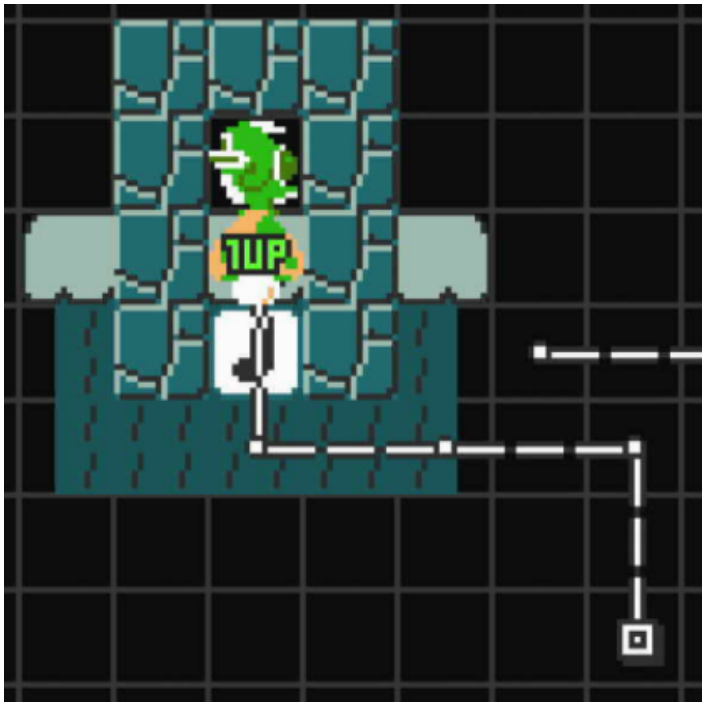
Then, put a long horizontal track under your notes, leading to an item to hit. Notes in freefall will keep their horizontal speed, so if they fall from a horizontal track onto another horizontal track, only the horizontal distance they travel matters and not the vertical distance.



Looking at the left side of the above image, notice the track connected to Mr. Spike is blocked on the 2 ends to keep the note blocks looping. Each track piece in the loop adds one half note to the loop's duration (2 8ths in each duration, for 4 8ths total). Since there are 4 pieces, the bass line loops every 4 half notes, or every 2 measures of 4/4.

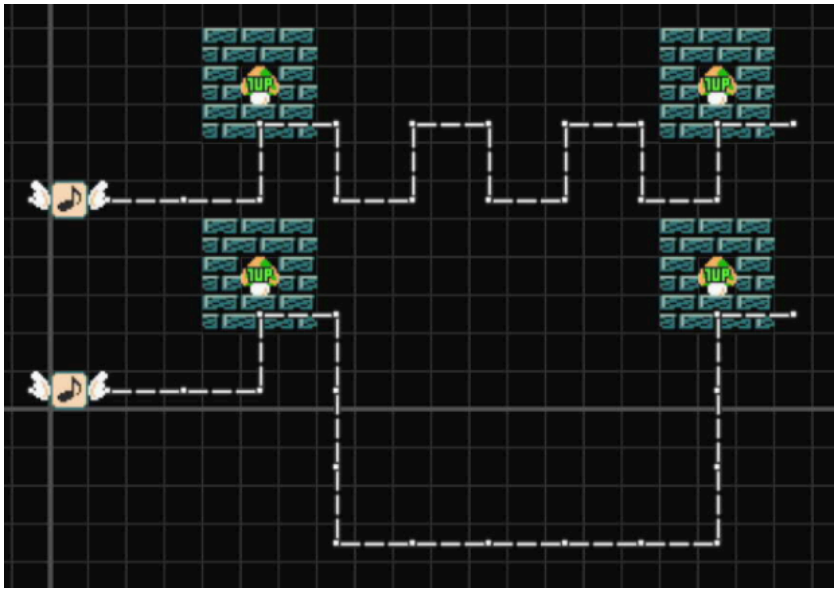
Note that in order for this to work, we need to spawn Mario in a location where all the track blocks spawn at the same time. This is what the door is for. We also need to keep the screen from scrolling too far to despawn Mr. Spike. Scroll stop is great for doing this.

Here’s a cute setup to double a line on another instrument: the 1up bounces up to join Mr. Spike and when the note blocks hit them, both instruments play.



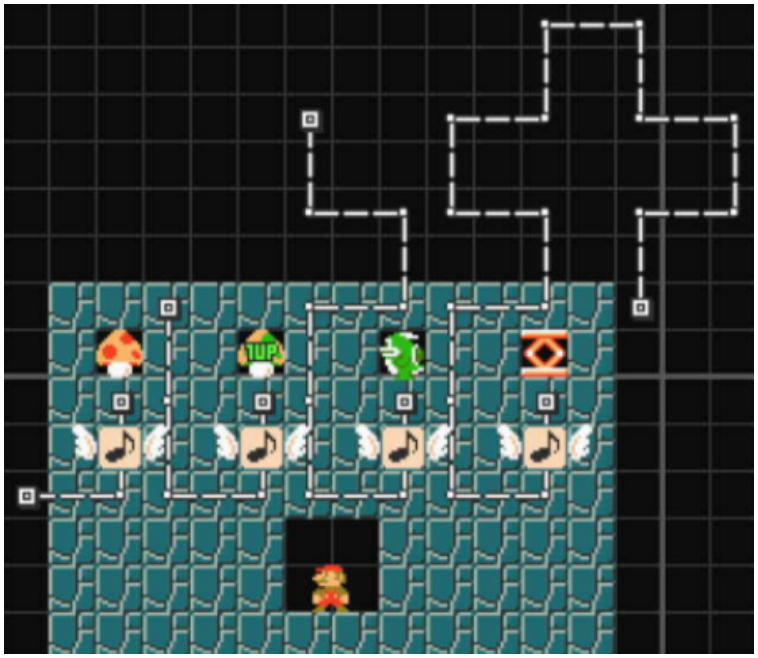
You can go nuts with this and make all kinds of combinations. Here’s my personal favorite, combining the delicate Snow Pokey with the elegant Shoe-Goomba:

IMPORTANT: Track blocks go a tiny bit faster on corners. In this image, the top block will get to the 2nd 1up before the bottom block, despite them having the same number of track segments.



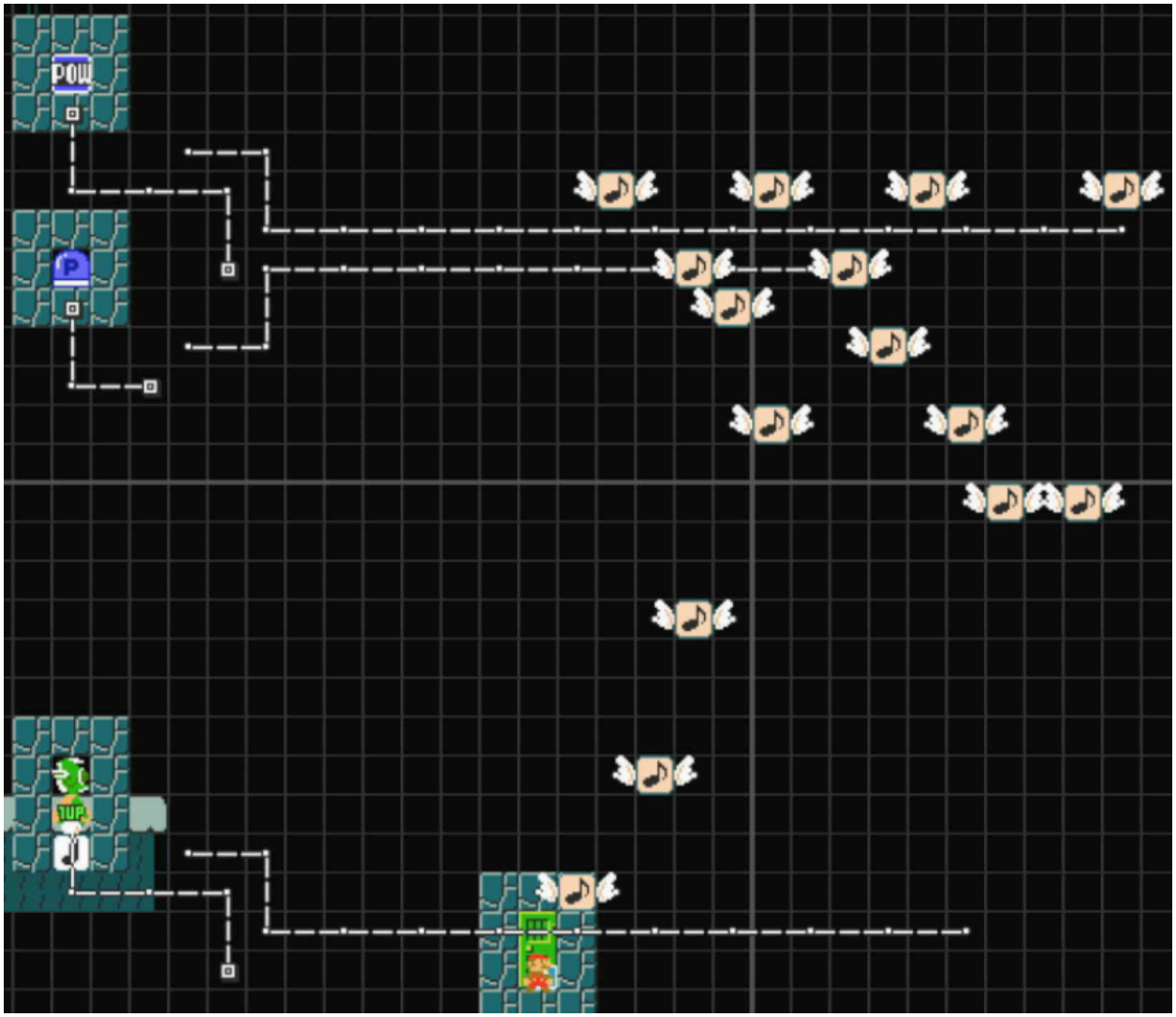
This means that if you have multiple loops going on at the same time they can get out of sync. To ensure they stay in sync, either make all the track loops the exact same shape, or test your setup by playing the level and waiting a couple minutes. If one loop is faster, try straightening out the bends, or adding bends to the other loop.

Here are setups for 1 measure, 2 measures, 4 measures and 8 measures which will stay in sync forever:



It's not too hard to find setups for other durations, just keep adding bends until it works. If they stay in sync for a couple minutes they'll stay in sync for 500 seconds (since if they de-sync it will be at least 1 frame per loop).

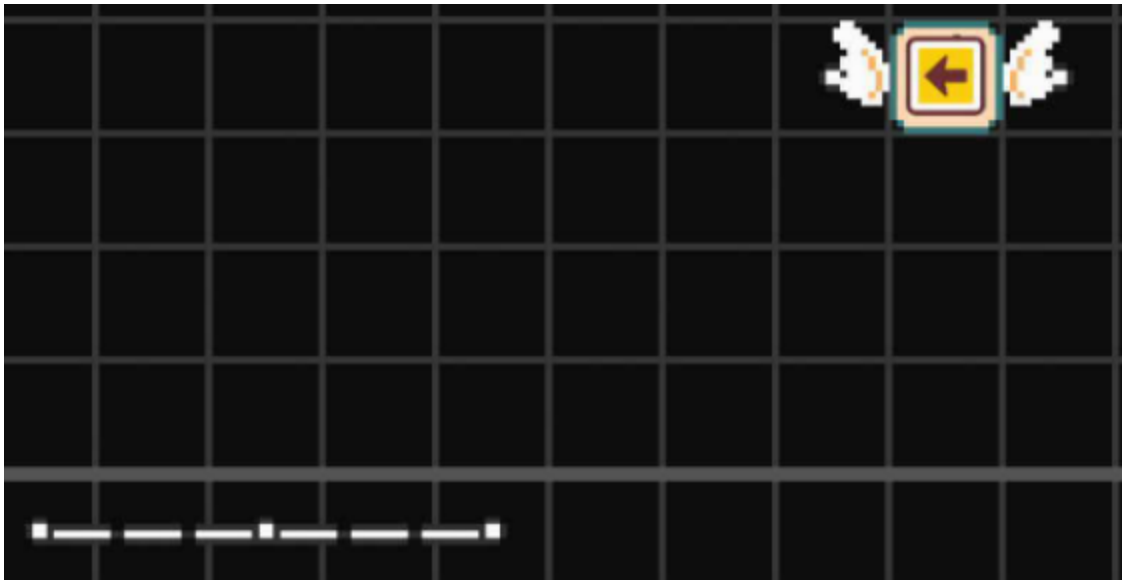
Using this knowledge, here's a drum beat added to our bass line:



And that's basically all you need to start making some track-based music levels.

Jank Alert: Here's some dumb jank: This track block goes *right* when it lands on the track below.

This happens when the note block lands on the very end of the track. This tends to happen when you have a bunch of single horizontal segments everywhere. Luckily it has an easy fix: just extend the bottom track so it doesn't land on the very end:

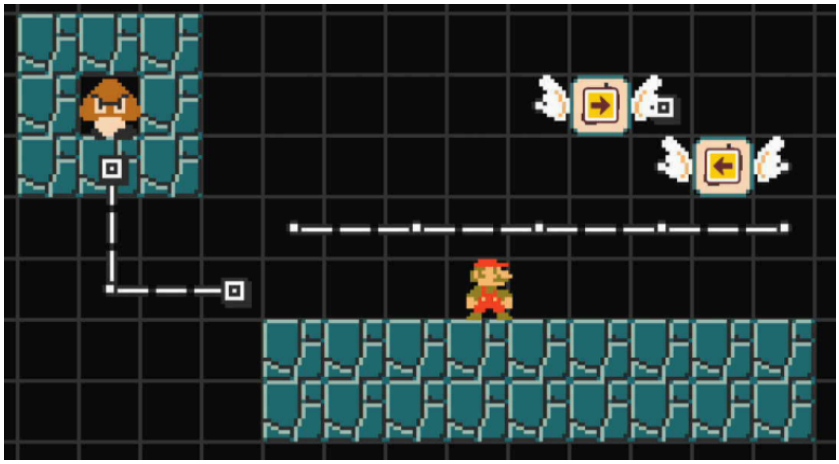


Part 2: Advanced Track Shapes

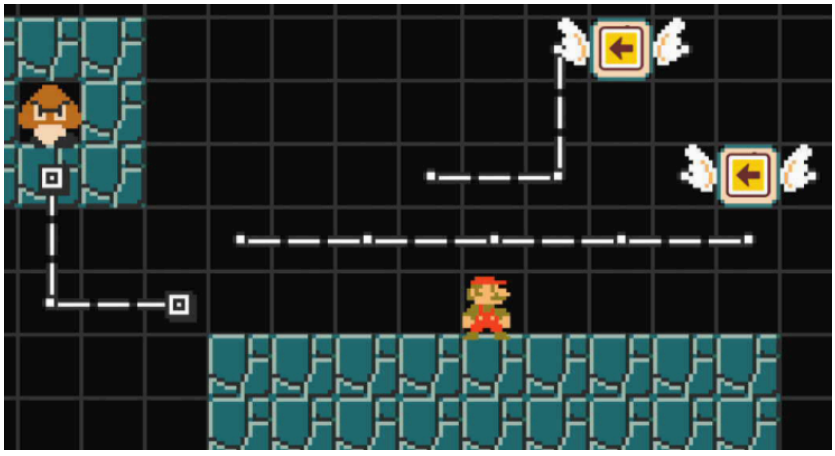
Sometimes when making track music your notes will conflict with each other. For example, if you want two successive 8th notes on the same note, you'll find that one note gets in the way of the other. Or you might just want more room for the rest of your level, or for more notes.

Here's a bunch of ways of getting the same rhythm with different setups. Sometimes you have to use trial and error with a bunch of these to get everything working together.

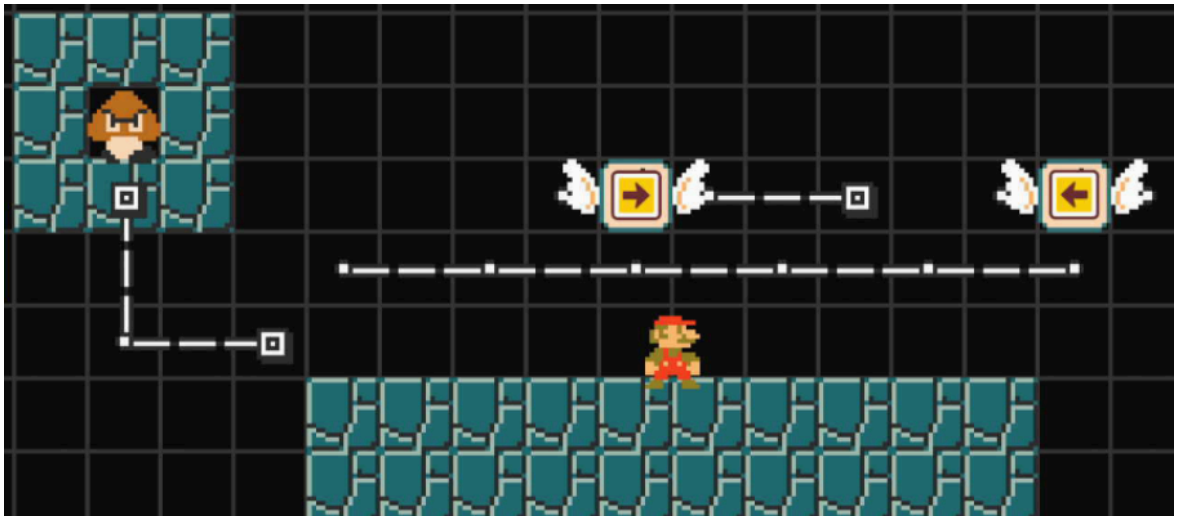
Flipping the direction and blocking the right end of the track is equivalent to moving the note 2 tiles to the right:



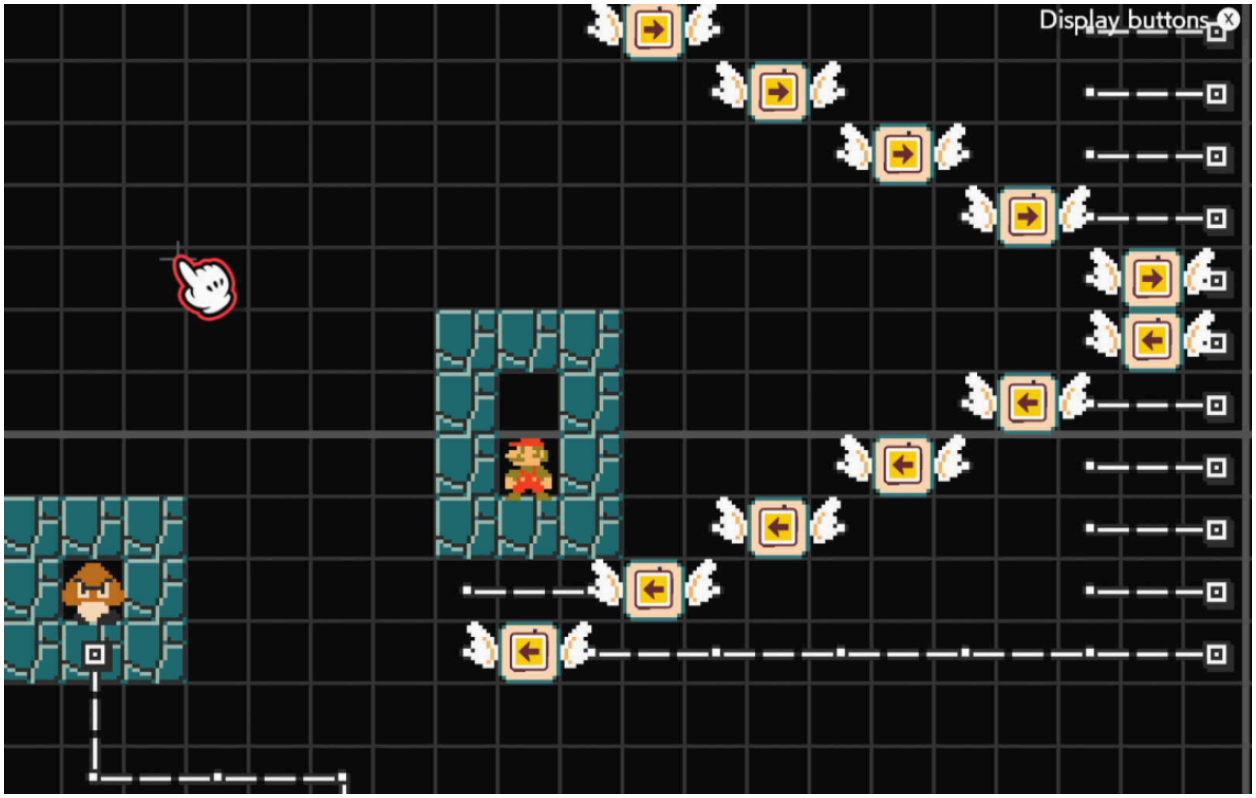
Every vertical segment you add is equivalent to moving the block 2 tiles to the right:



Every track segment you add on the *right* side of a block after flipping it is equivalent to moving the note 4 tiles to the right. This is in addition to the 2 tiles from flipping it.

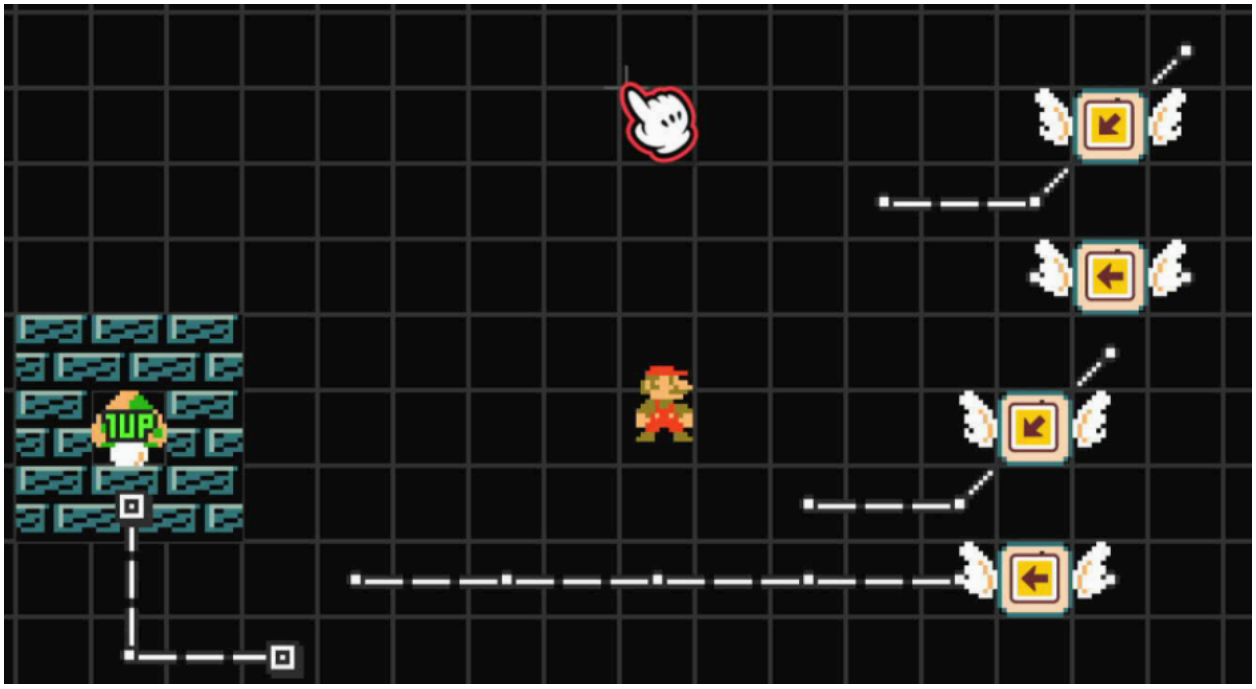


A big space-saving measure is to mirror the 2nd half of your melody. This doesn't always work since it means the 2nd half of your melody will be overlapping the first, but if you're lucky your melody might fit. This is how I got Spider Plants to have an 8-measure long loop.



(just under Mario you can see I've had to fix that awful jank mentioned in part 1)

Here’s how I do 16th notes:



A note block starting on a diagonal will be delayed by one 16th note. That makes this an ascending run of 16th notes.

Part 3: Integration with Autoscroll

This part assumes you know how to make autoscroll music levels.

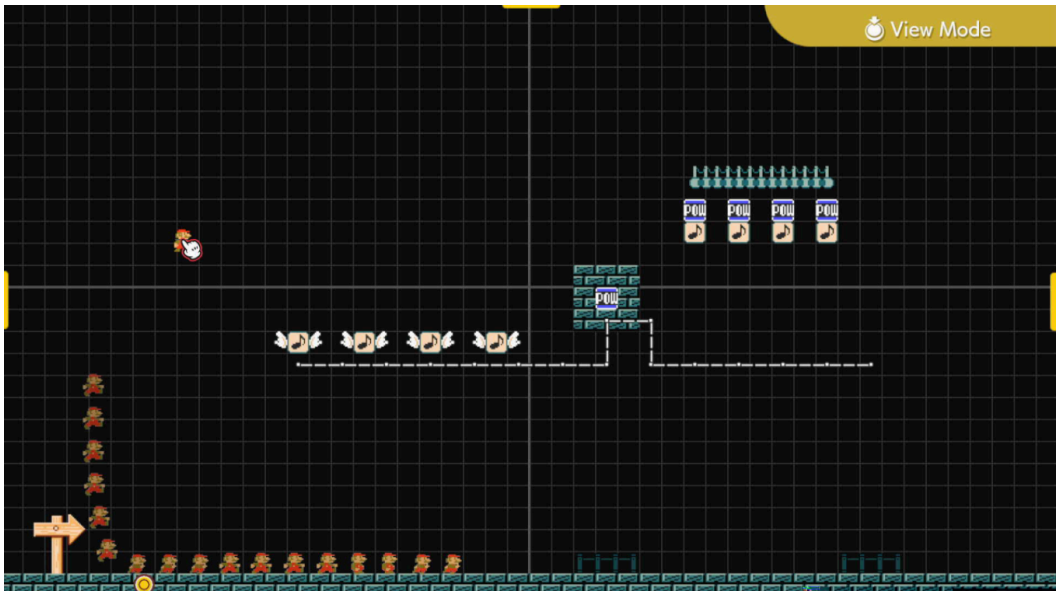
Here's a link I copied from com_poser's cheetah autoscroll tricks guide for how to make music levels:
https://www.reddit.com/r/MarioMaker/comments/3vpsce/dummys_guide_to_making_a_music_level/

Here's a link to com_poser's cheetah autoscroll tricks guide:
https://docs.google.com/document/d/1DA8pPpn9NGABpsS-ScPI7_Yv5j4qUv_9ENoaAx4OgEM

Combining autoscroll music with track music is best done with rabbit autoscroll. This is because in cheetah autoscroll, the track blocks can't keep up with the screen, and eventually they will be too far away to hit anything that hasn't despawned. In rabbit autoscroll, your note blocks can keep up with the screen and continue looping for the whole level.

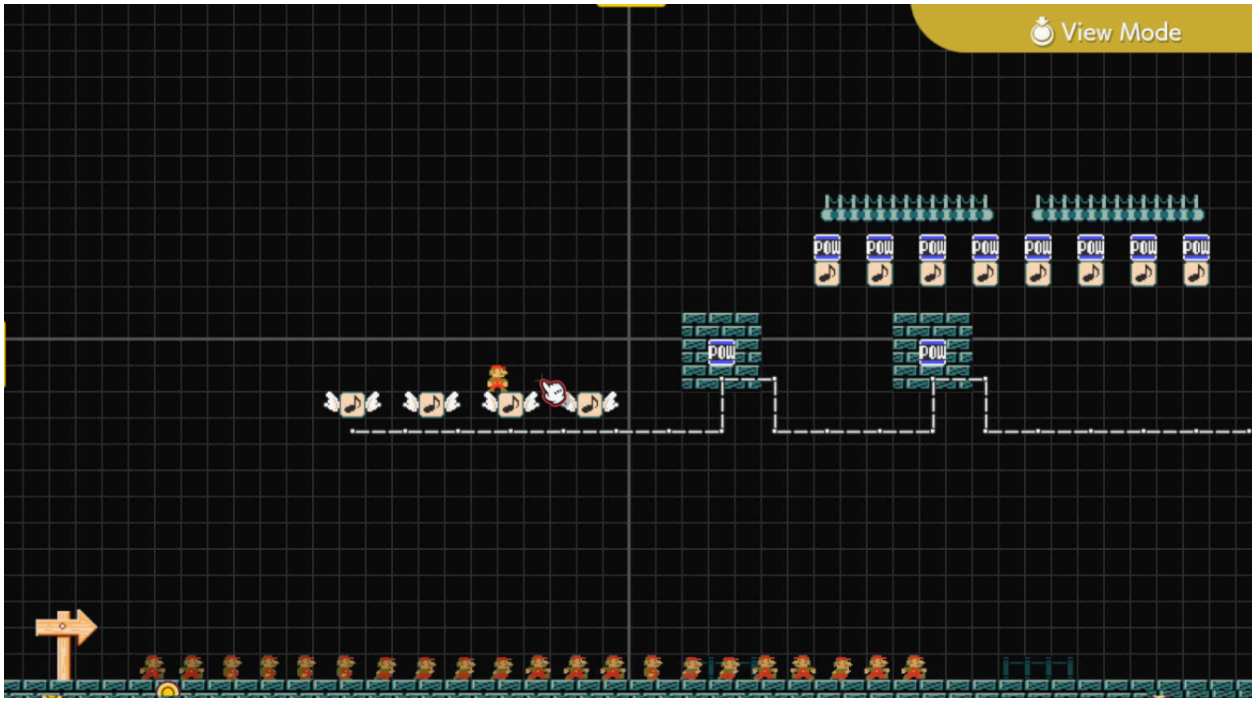
Assuming your rabbit autoscroll music level is 110 BPM (with 1 autoscroll tile = 1 8th note), track blocks will move at a speed of 3 tiles per quarter note. The simplest way to add tracks to your autoscroll level is to put all your track notes at the start, so they all spawn together.

Since the autoscroll moves right, we want to flip everything we've learned horizontally and place our notes from right to left, moving to the right. Here's what 4 quarter note POWs look like as track blocks and autoscroll:

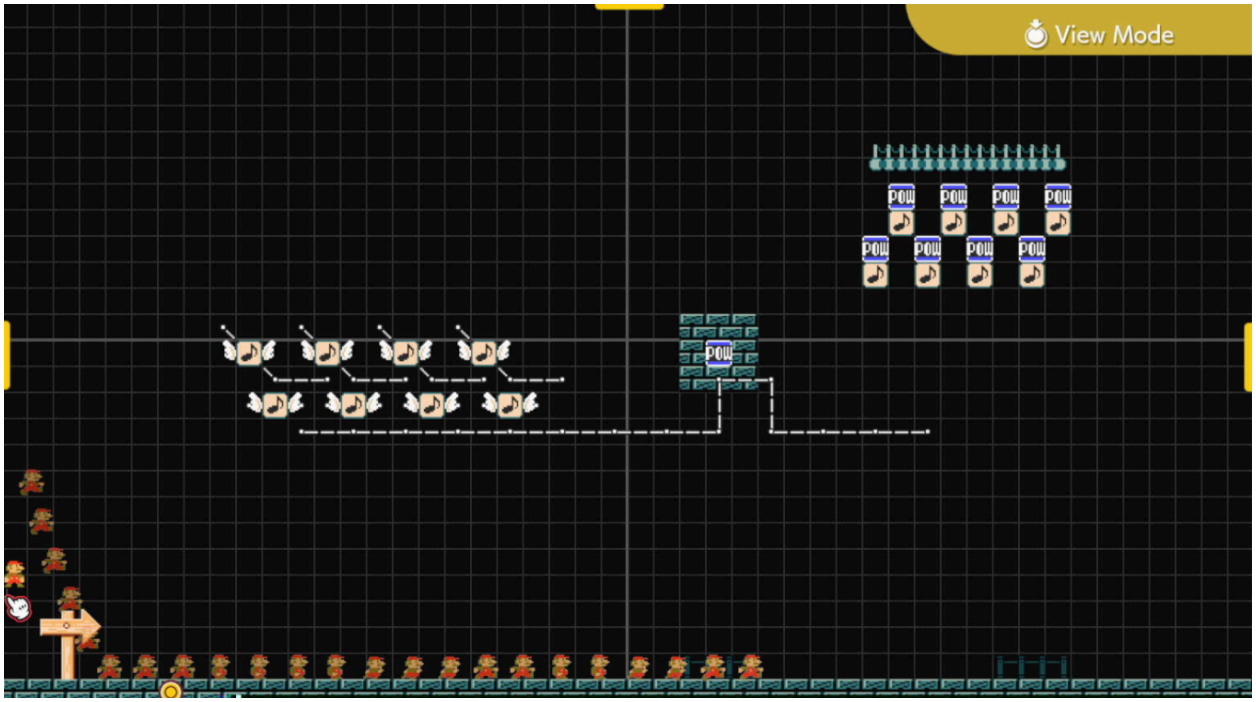


Note that these won't be exactly together, but we'll learn later how to adjust our track timing to match the autoscroll later.

Then we can repeat those quarter notes by having the track hit another POW. Every 3 track segments last a half note. This uses 6 track segments to repeat the 4 quarter notes 1 measure later.

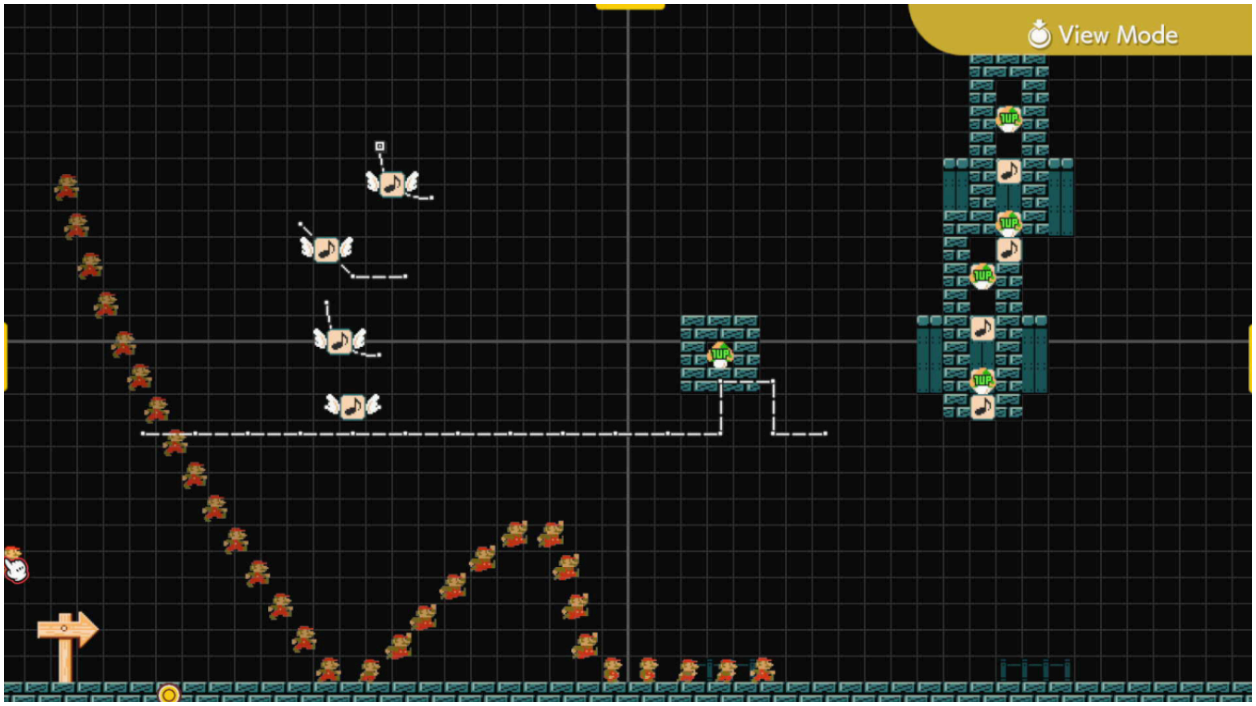


8th notes can be made using diagonal tracks:

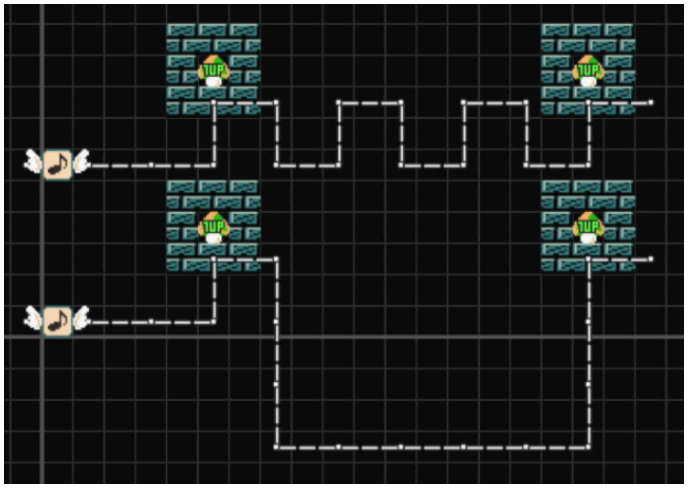


16th notes can be made with curved diagonal tracks:

And here's the same 16th rhythm in both tracks and autoscroll. Note that because we're using rabbit autoscroll, the autoscroll 16ths have to be done by raising the 1up one tile and putting a semisolid under it (see com_poser's cheetah autoscroll tricks linked above).



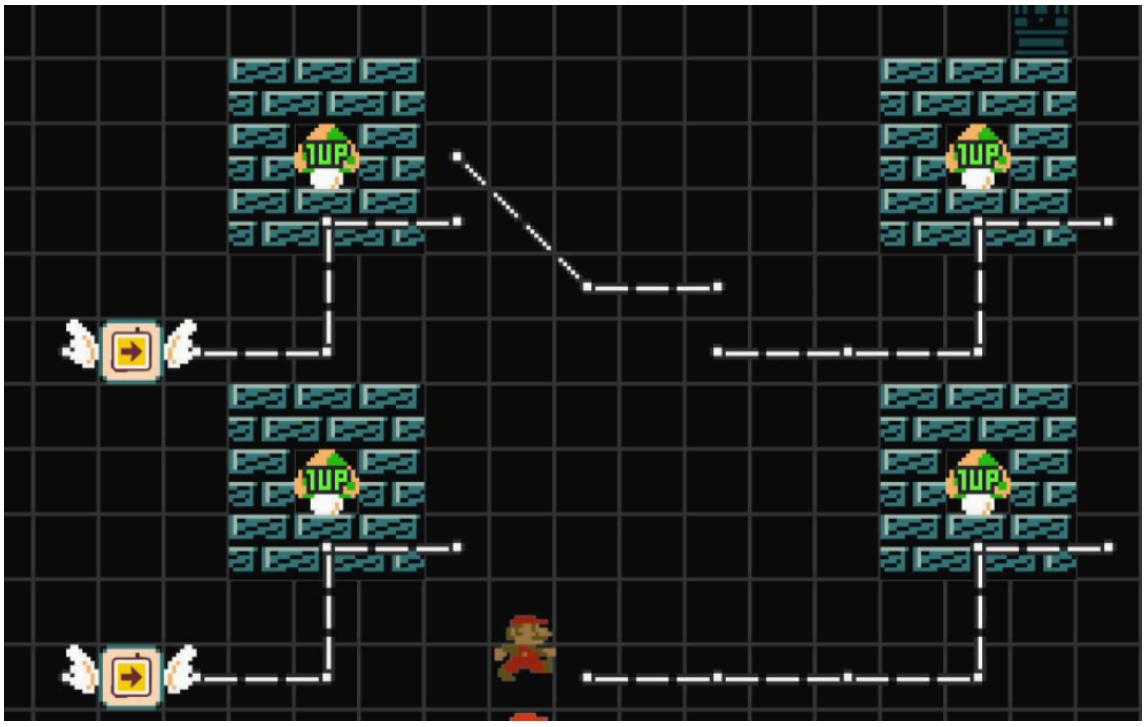
Hey, remember that thing where bends make note blocks go faster?



The top note block hits the 2nd 1up before the bottom note block does.

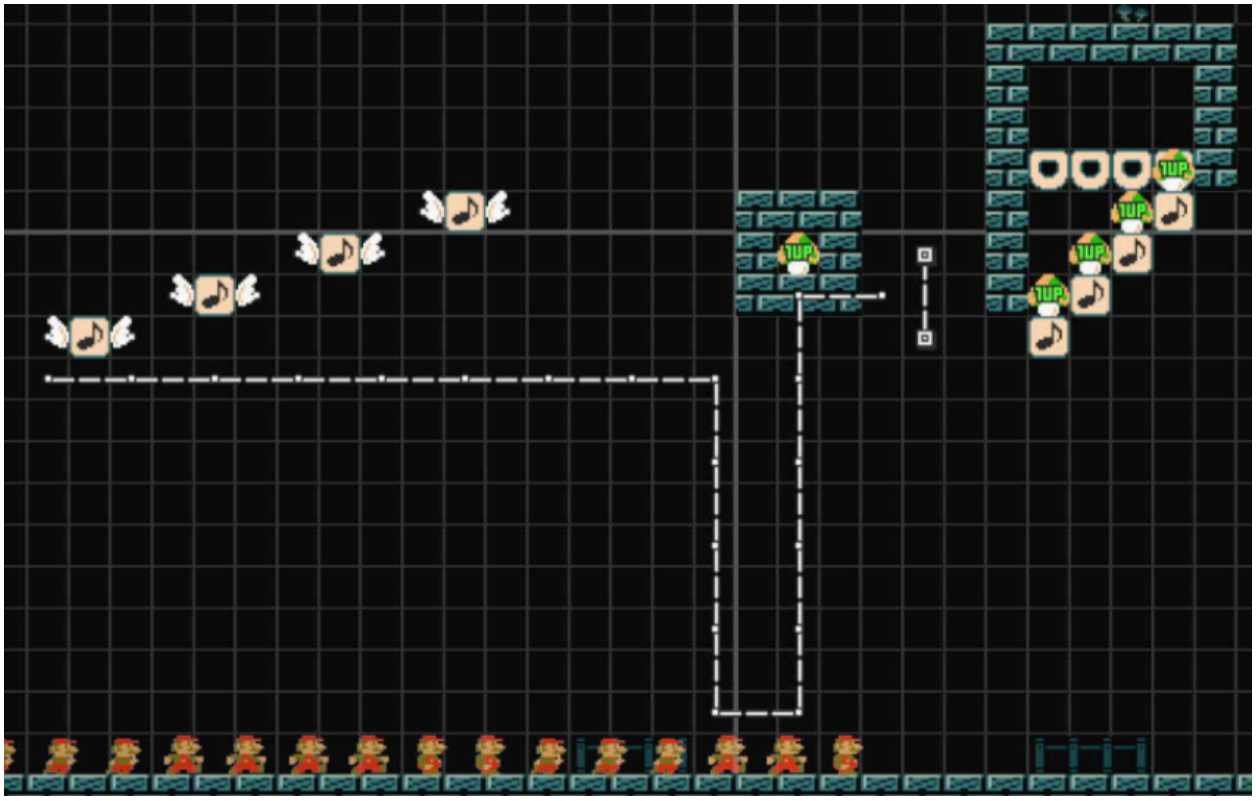
This is a problem because our track loops are gonna have bends in them, which will cause them to get out of sync with the autoscroll music.

This is my workaround:



Both of these have 1 measure between the 2 notes. The top note block will take slightly longer than the bottom, because it lands on the diagonal track just before it flattens out. When your track blocks inevitably start getting too early, add one of these diagonal tracks to slow them down. Looking at my levels where I've used this, I seem to use one diagonal about every 5 bends, but I haven't measured exactly how often you need them. I just do trial and error.

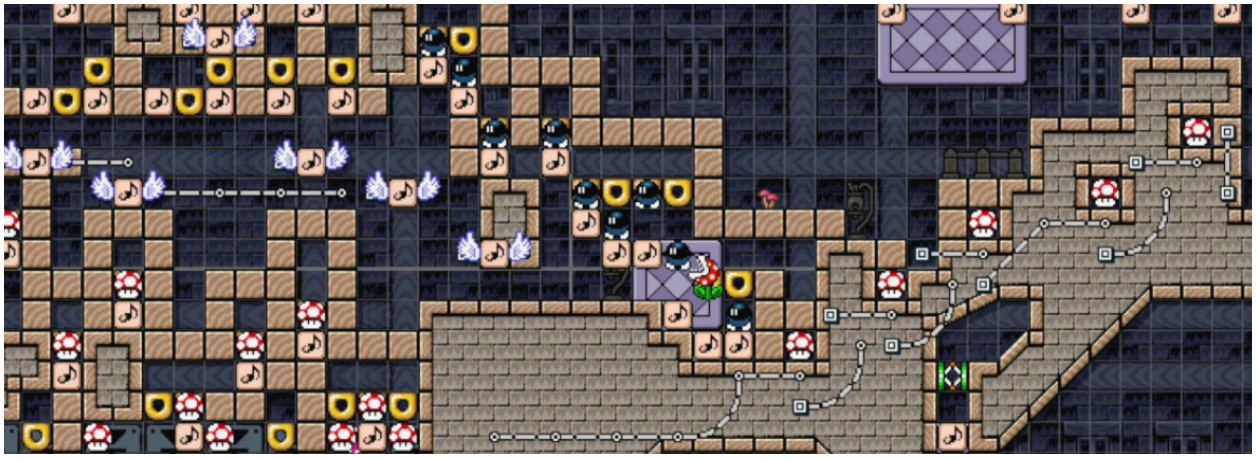
You can also have note blocks spawn later in the level if you didn't have room for them at the start:



Notes are still moving right, but now every 3 tiles to the *right* delays by one *8th* note.

Unfortunately, diagonal tracks don't give us 16th notes here. I haven't figured out how to get clean & simple 16th track notes in the middle of a rabbit autoscroll music level.

You can also use this setup in the middle of a cheetah autoscroll level as a sprite-saving measure, but every 3 tiles to the *left* will be one 16th note. I used this in my Goosebumps level to get 30 notes out of 6 track blocks and 5 mushrooms. The 6 winged note blocks are on tracks and make 16th notes when they hit the mushrooms.



(the setup for getting 3 8th notes per loop was found through trial and error)

Unrelated to tracks, but here's a setup that gets you 9 half notes from 1 sprite in rabbit autoscroll. It's the same as the half-time standard beat trick from com_poser's cheetah autoscroll tricks, but uses a conveyor instead of raising the P-switch and moving it back one 16th, since we can't move it by only one 16th in rabbit autoscroll.