

Make a Song

Use the built-in speaker

Required skills: Load code to micro:bit

MB skills: Use the built-in speaker

Level: Basic

Code:

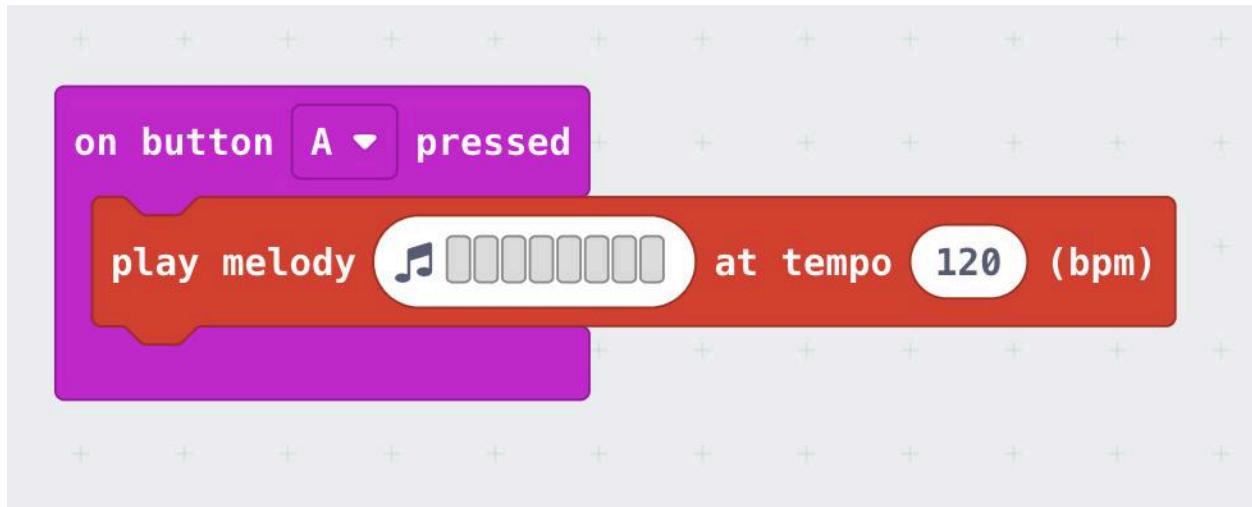
The code can be built from scratch, but here is some finished code for reference:

https://makecode.microbit.org/_do3AF2EFzgcX

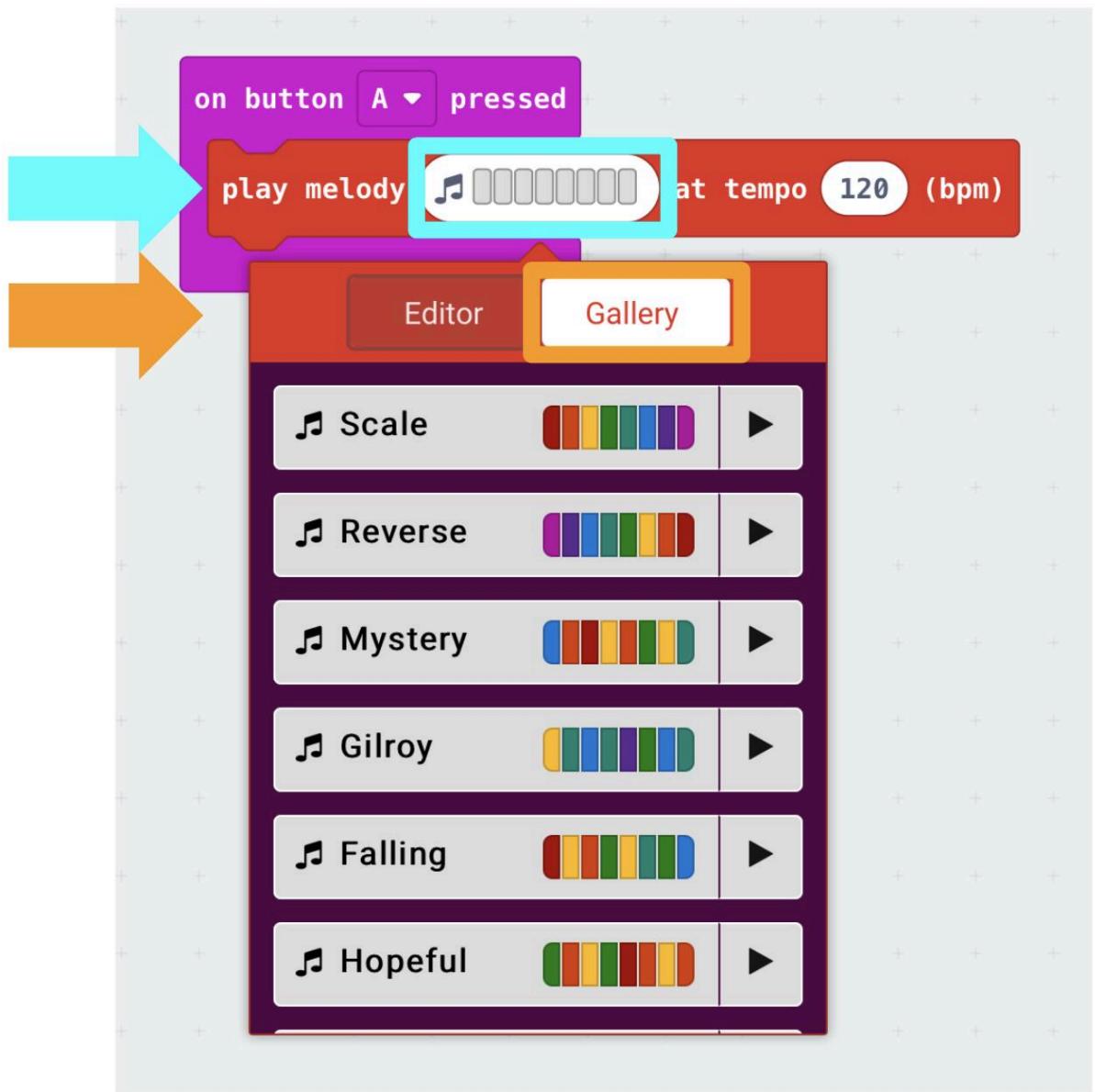
PART 1

MB Code & Explanation

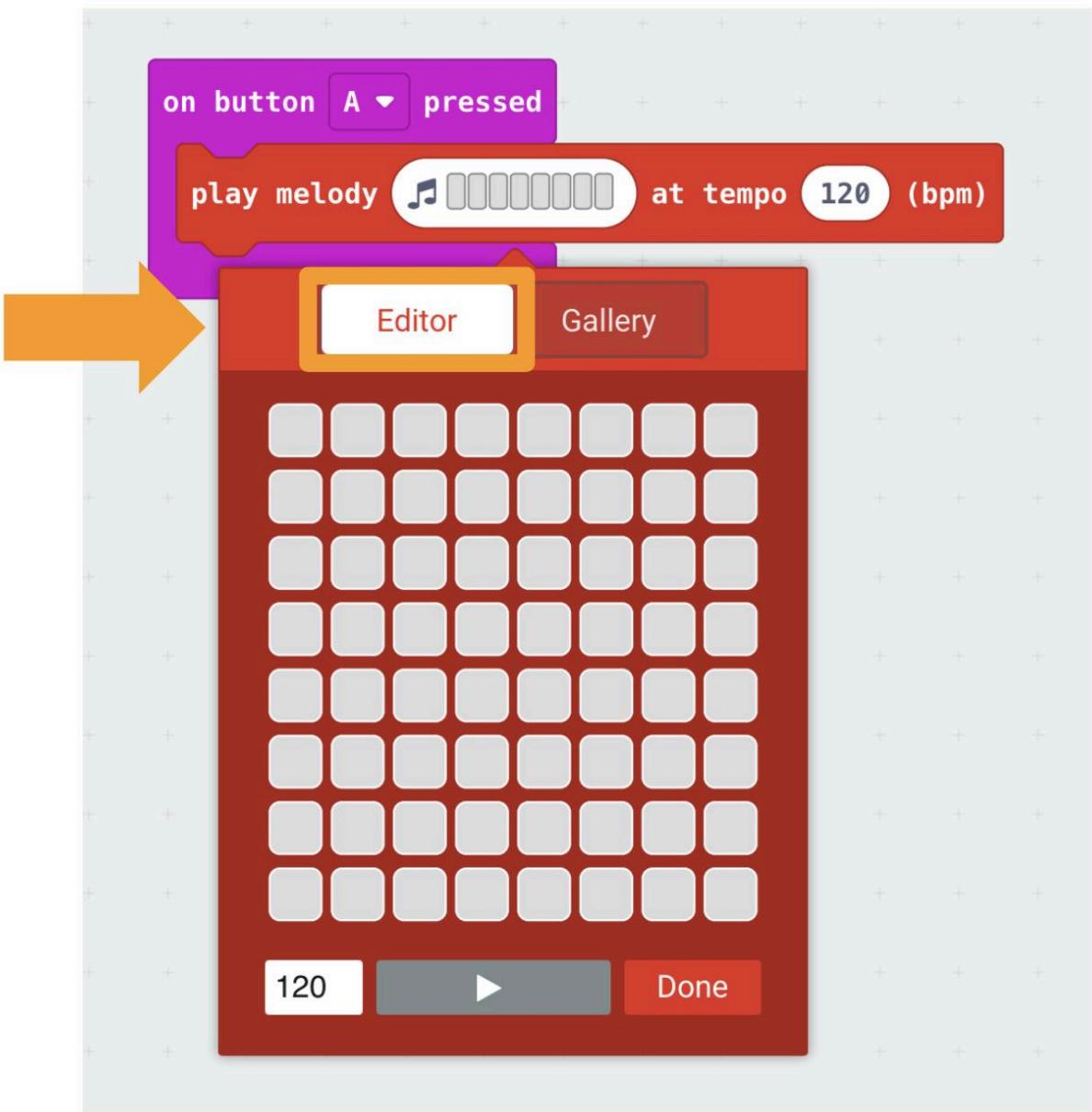
1. The code blocks for the music are all in the “Music” folder. Let’s start with the basic one: “Play melody”.

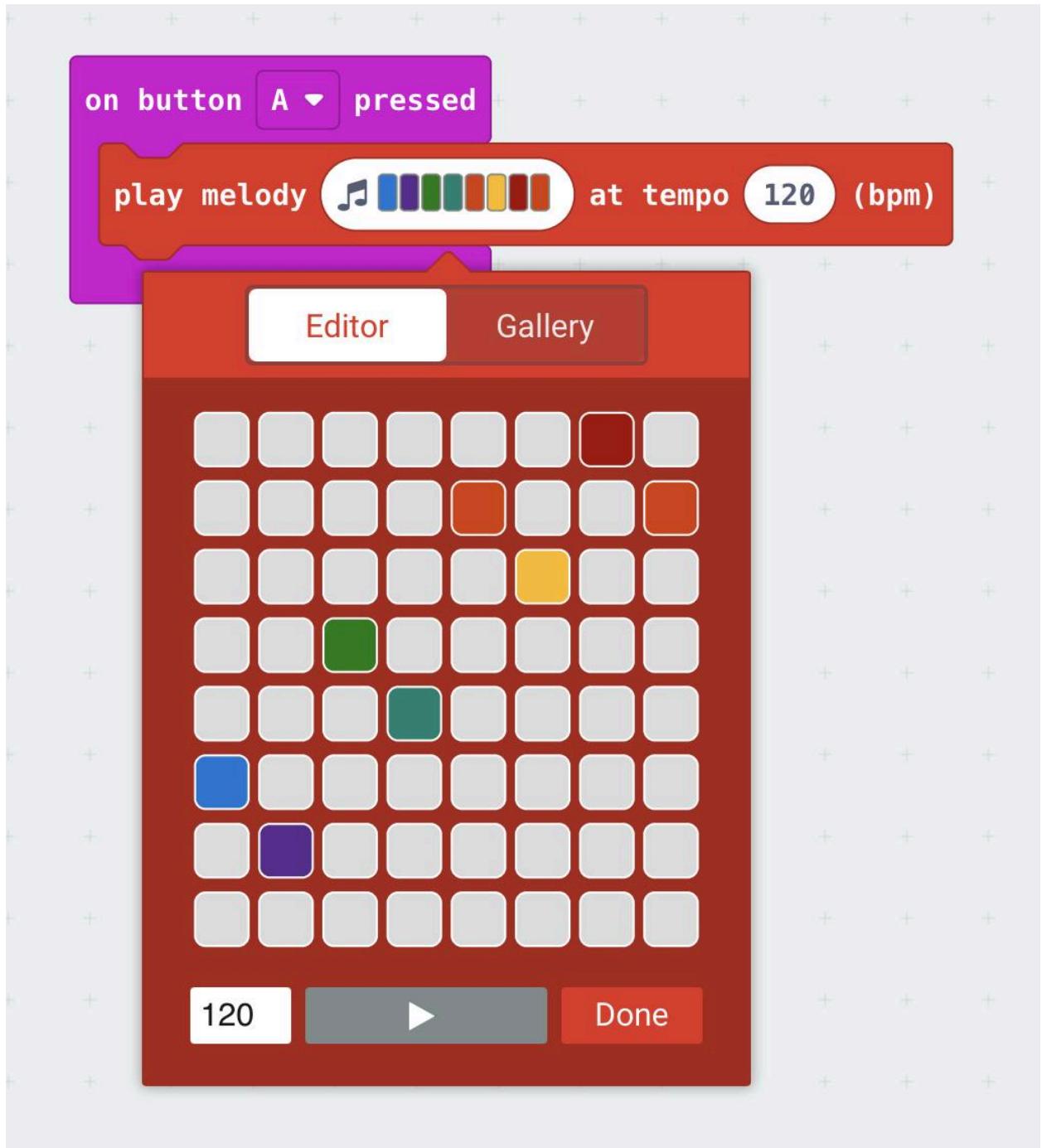


2. If you click on the part with the musical note (highlighted in blue), it’ll open up dropdown with two options. The “Gallery” (highlighted in orange) gives you premade melodies to choose from



3. If you click on “Editor” you can compose your own song. Each column represents a beat; if you click on one of the boxes, it will highlight in a color and that represents the note that will be played for that beat. Play around with it a bit until you get the hang of it. Note that you can also change the tempo (the speed of the song) either in the block itself, or at the bottom of the music composer grid

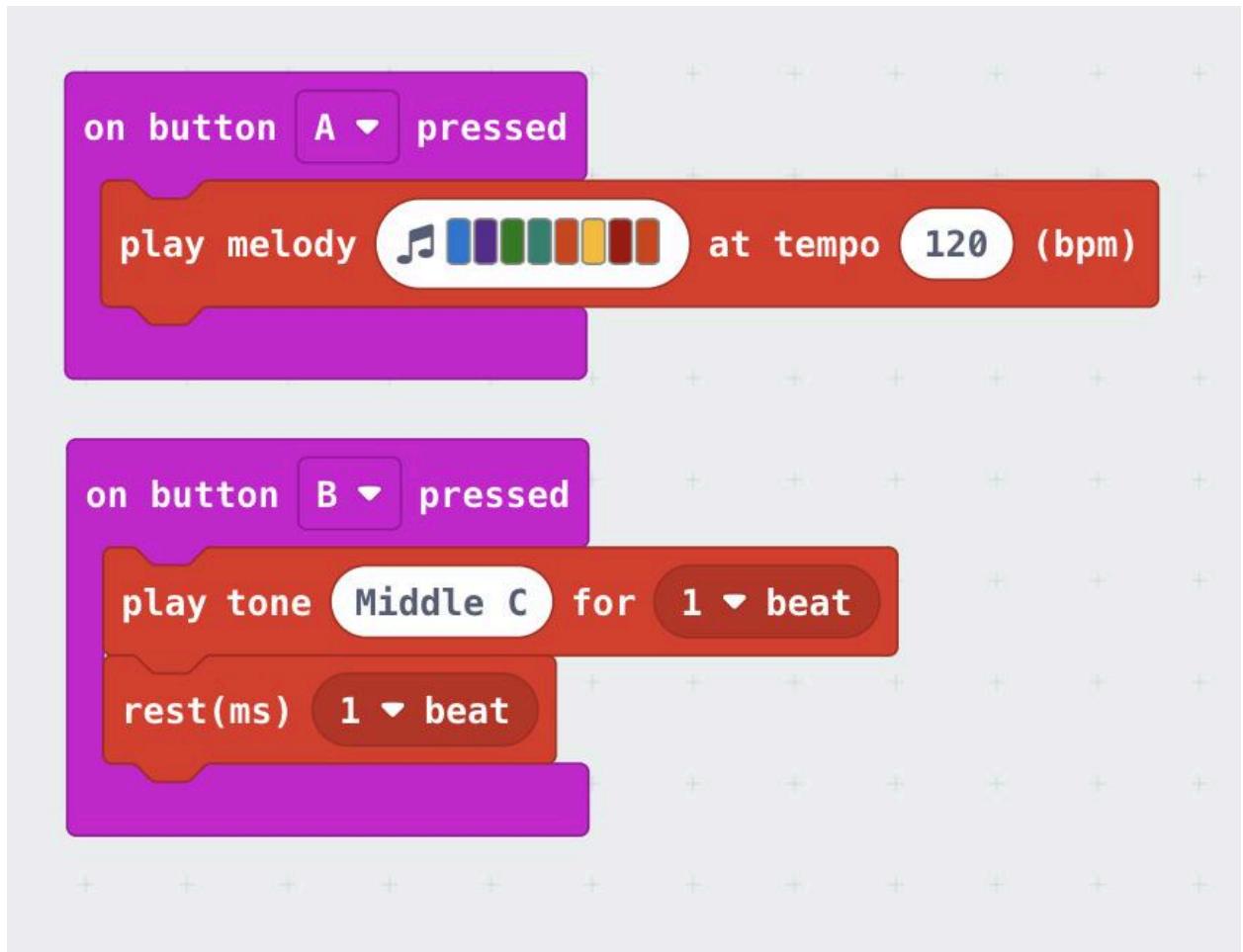




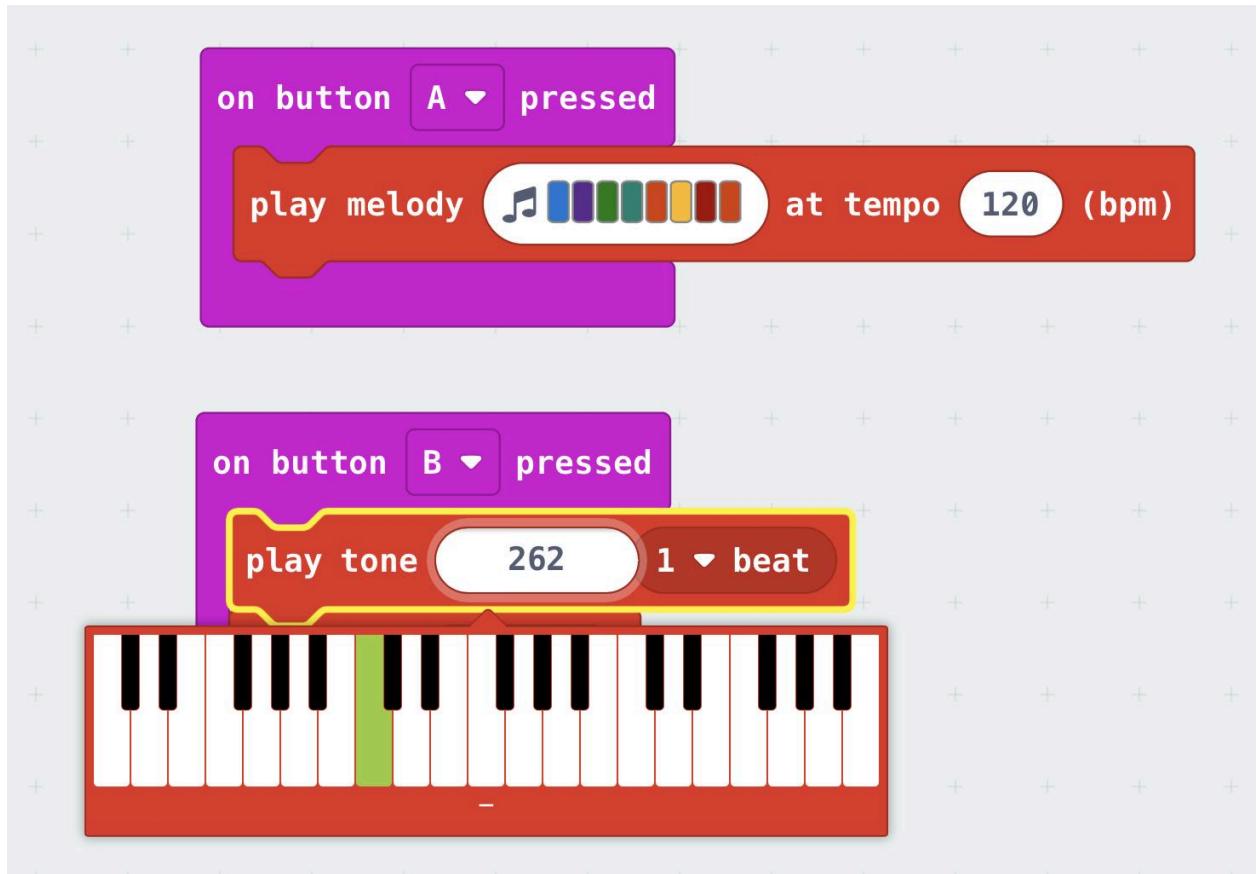
PART 2

1. The editor is the fastest way to compose a song, but it's a bit limited in that you can only play a maximum of 8 notes (though you can string together multiple "play melody blocks" for a long song), and you can't play sharps/flats (the black keys on a piano). However, there are also blocks to play individual notes. In the example below, the first melody (from

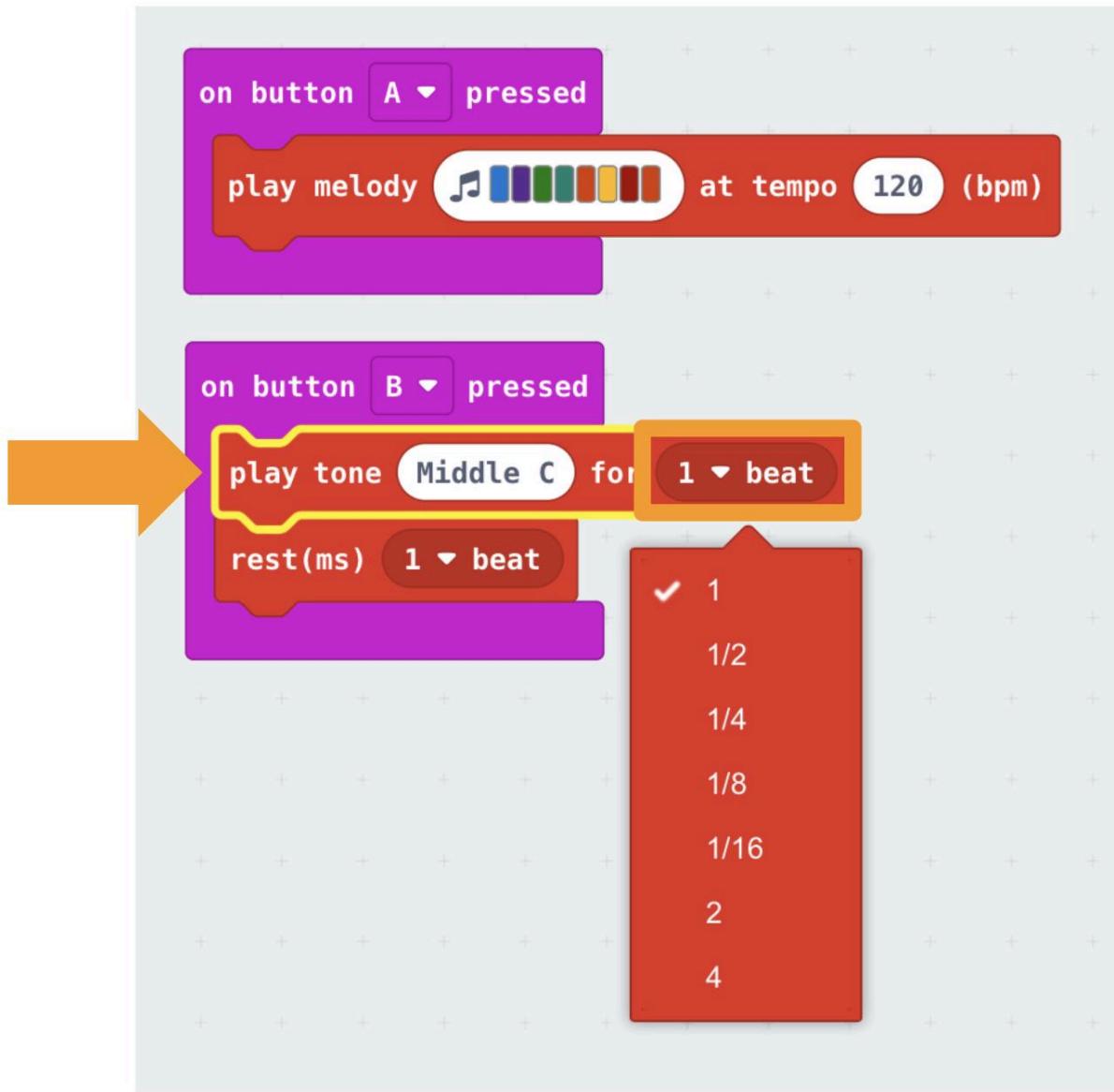
Part 1) plays if you press A. If you press B, it will just play a single note, then rest (pause) for 1 beat. This is useful if you want to just play one note—for instance, if you want something to beep and not play a song.



2. If you click on the tone (where it says “Middle C”, it will open up a piano and you can chose the note that way)



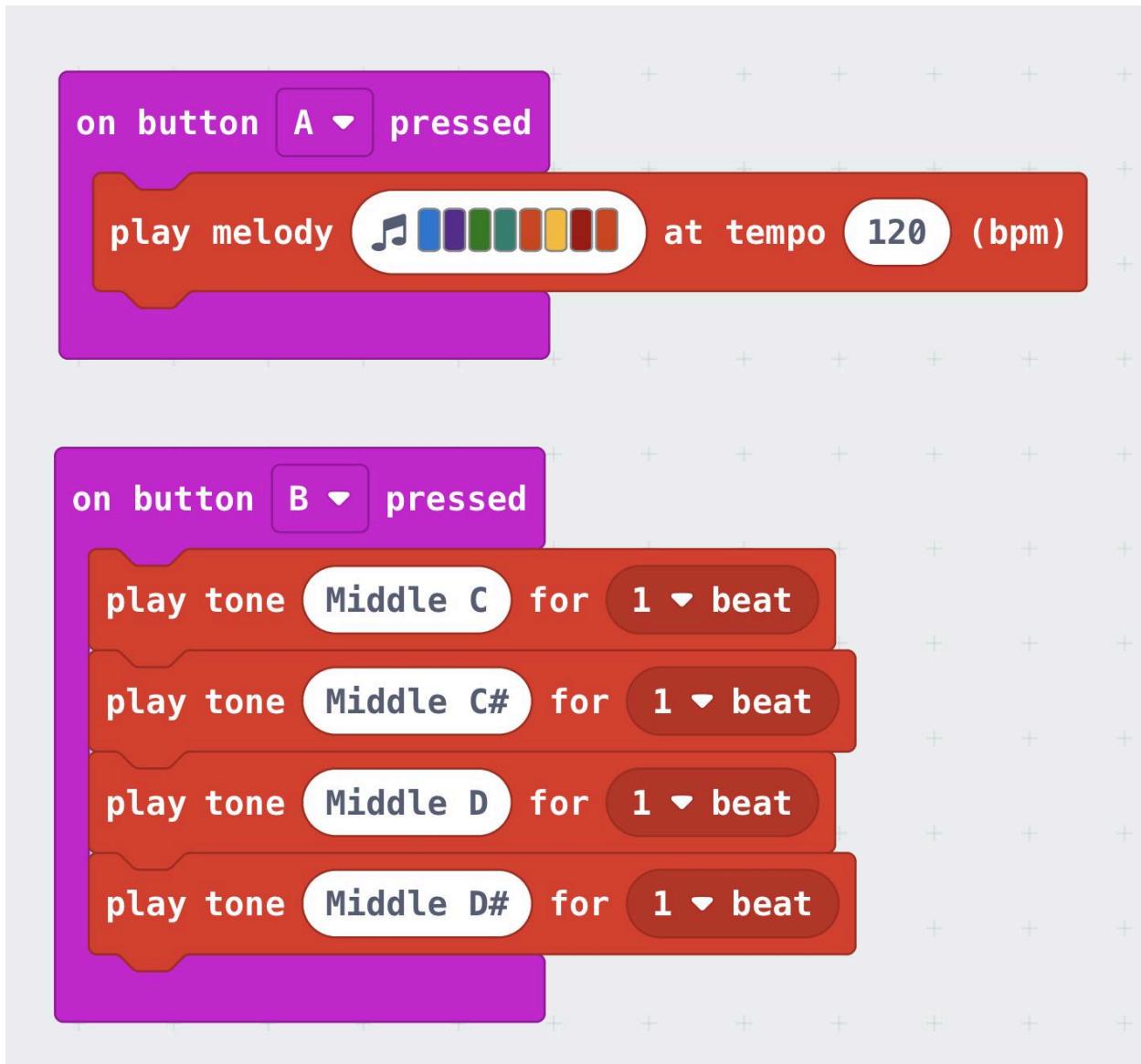
3. You can also change how long you want to play the note for by selecting the beat length. (The fractions will be shorter beats — i.e., $\frac{1}{2}$ = a half beat)



4. You can use this to play individual notes, but you can also string them together to play a song! If you do that, you have full control over what notes you want to play and for how long. (The sample below is pretty boring, but you can play around with the notes, the beats, and even how long the rests are between notes. You can also get rid of the rest altogether if you want the notes to flow one after the other without a pause).

```
on button A ▾ pressed
  play melody  at tempo 120 (bpm)
```

```
on button B ▾ pressed
  play tone Middle C for 1 ▾ beat
  rest(ms) 1 ▾ beat
  play tone Middle C# for 1 ▾ beat
  rest(ms) 1 ▾ beat
  play tone Middle D for 1 ▾ beat
  rest(ms) 1 ▾ beat
  play tone Middle D# for 1 ▾ beat
  rest(ms) 1 ▾ beat
```



Part 3

Makecode has a bunch of other music and sound-related blocks, such as built-in sound effects, ways to change the volume and speed. Explore a few of the different blocks to see what type of sound effects and music you can make!