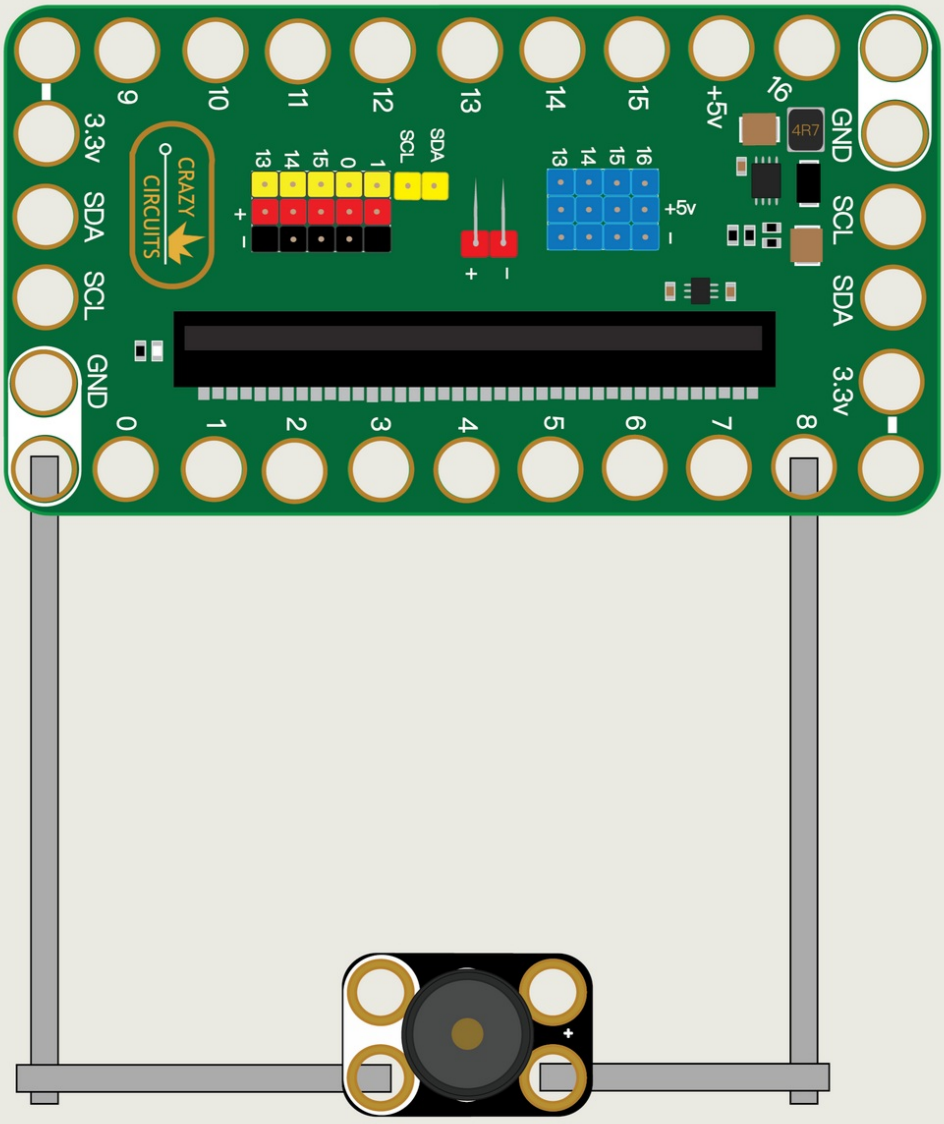
CH13-D - Piezo Tone Time

Connect a piezo speaker to a Bit Board and control it with code.

Written By: Pete Prodoehl



INTRODUCTION

Connect a piezo speaker to a Bit Board and control it with code.

We'll explore how we can make sounds using a piezo speaker.

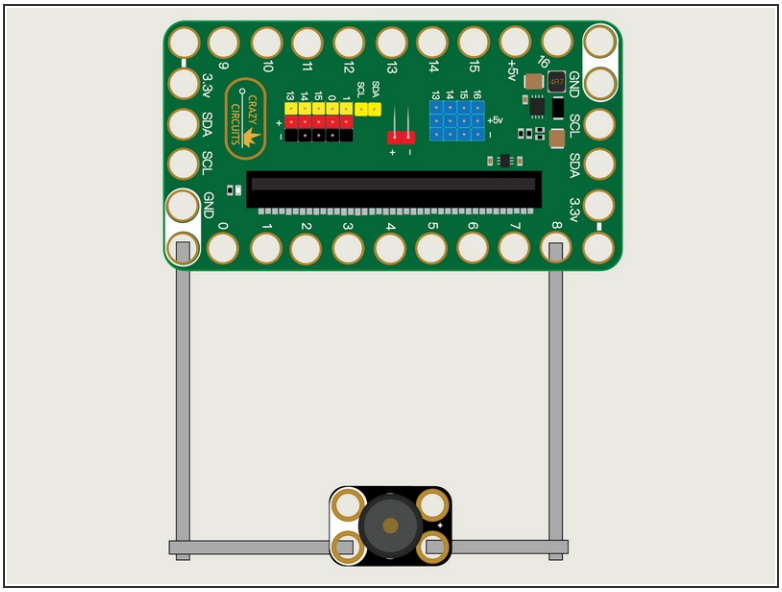
TOOLS:

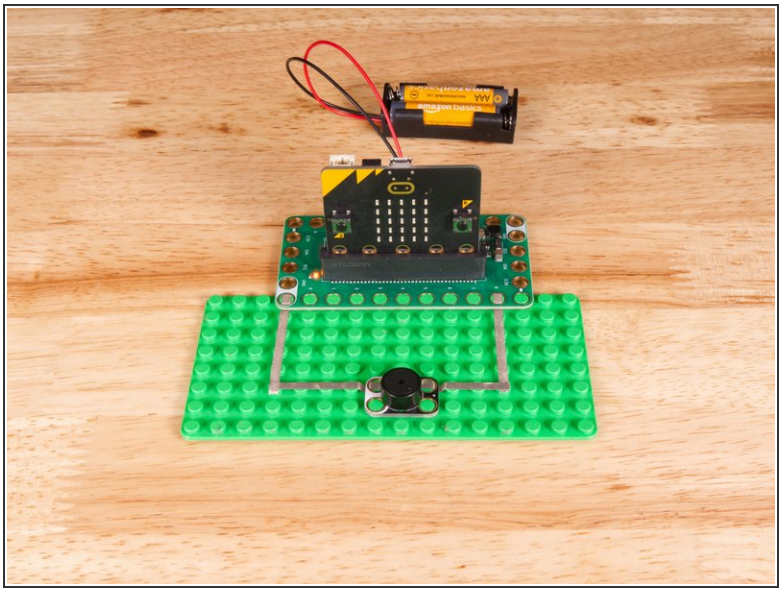
- Computer (1)

PARTS:

- Crazy Circuits Bit Board (1)
- micro:bit (1)
- Maker Tape (1)
  1/8" Wide
- Crazy Circuits Piezo Speaker Chip (1)

Step 1 — Connect the Piezo

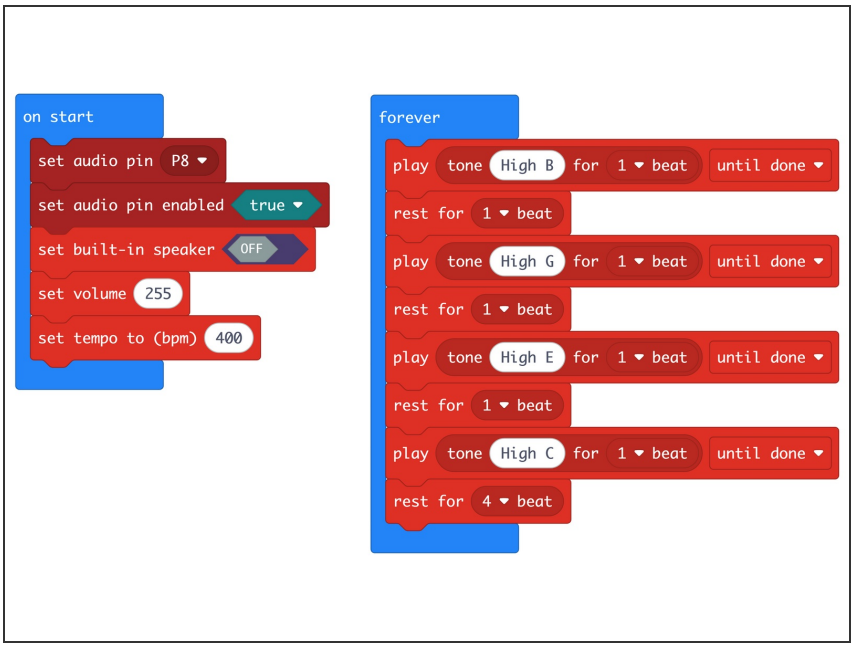




- We'll use **Maker Tape** to connect the Piezo to the Bit Board on a LEGO baseplate.
- The Piezo will connect to **Pin 8** and to **Ground** (GND).

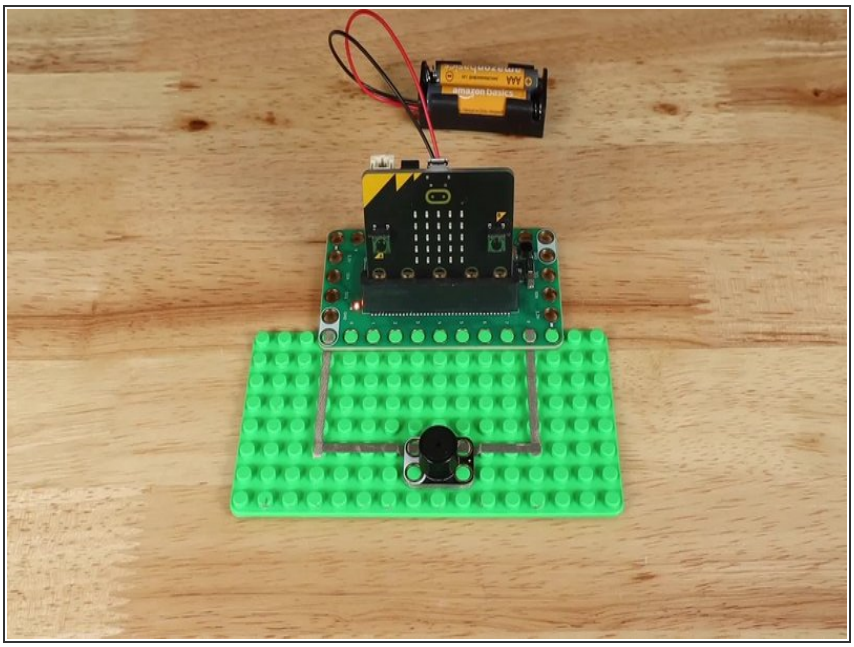
You'll notice the **Ground** on the Bit Board (as well as the Piezo and other Crazy Circuits components we'll use) is color coded **White**.

Step 2 — Load the Code



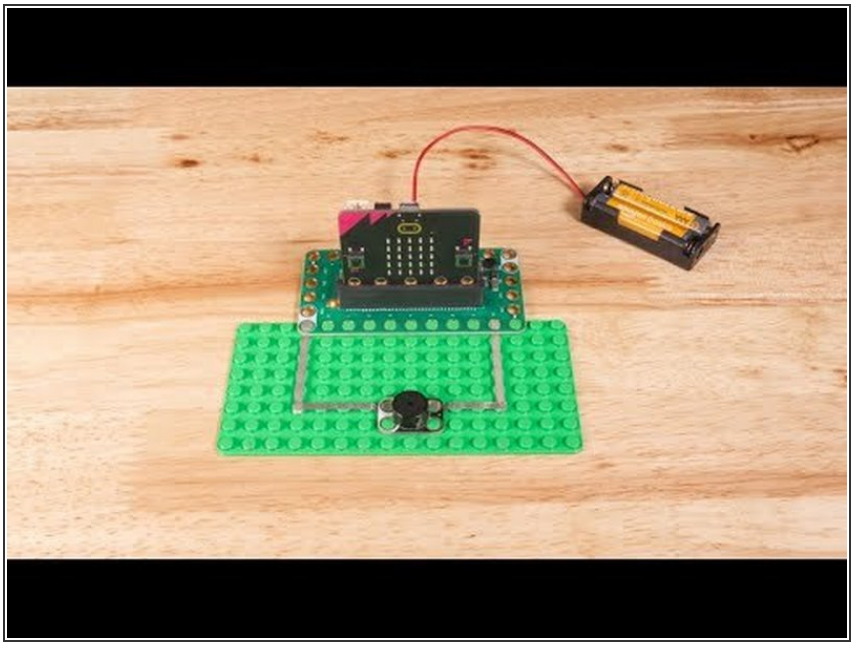
- If you've never used a micro:bit before you'll want to check out this guide: Bit Board V2 Setup and Use
- We're going to load the following code for our **Piezo Tone Time** program: https://makecode.microbit.org/_PkCd12REd...
- We're going to set the **tempo** to 400 bpm (beats per minute) in the setup, and then use **beat** as a measure of time (instead of **pause**) in our loop.
- We've stuck to **1 beat** for most of the code, but then rest for 4 beats at the end, but here's where you can experiment! Adjust the temp, adjust the number of beats, and see what your new "song" sounds like.
- ⓘ Note that this time we have disabled the built-in speaker, so you will only hear sound from the Crazy Circuits Piezo we've connected.

Step 3 — Test it Out!



- Once the code is loaded it should start running immediately.
- ⓘ You can power the micro:bit via the USB cable you used to load the code or you can use a battery pack plugged into the Bit Board.
- You should hear four tones, a slight break, and the it'll repeat again.

Step 4 — Follow Along



- Follow along with our recorded Live Stream!
- ⓘ You can watch the full video of us walking through this project, along with explaining and exploring the code: https://www.youtube.com/live/3olw8CrFukM...