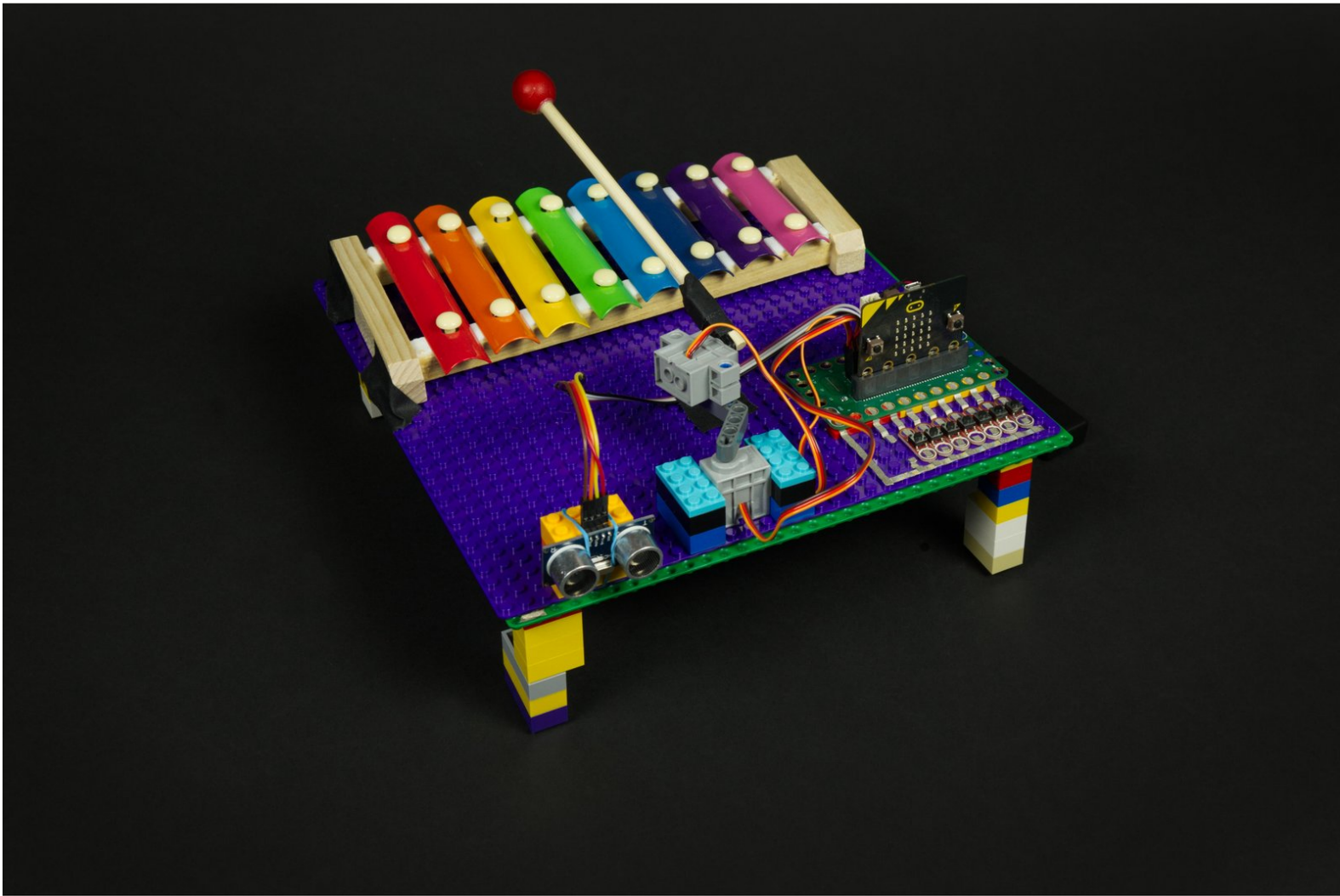




Distance Xylophone

Written By: Pete Prodoehl



INTRODUCTION

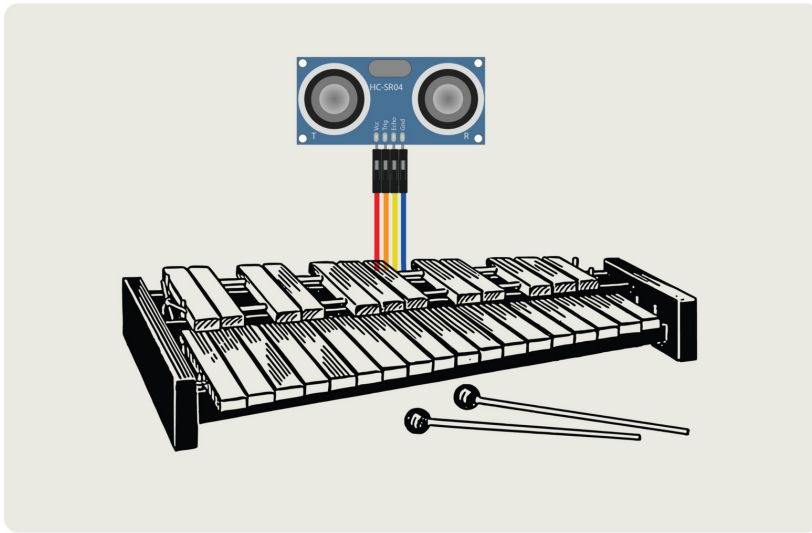
Add a distance sensor to your micro:bit powered Xylophone and play songs by waving your hands or running around.



TOOLS:

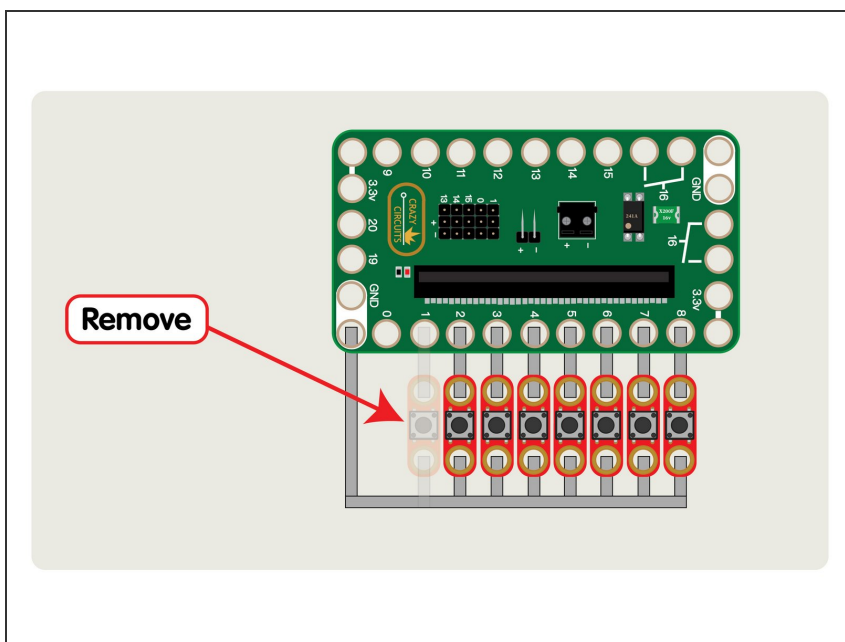
- [Computer](#) (1)
-

Step 1 — Build a Xylophone



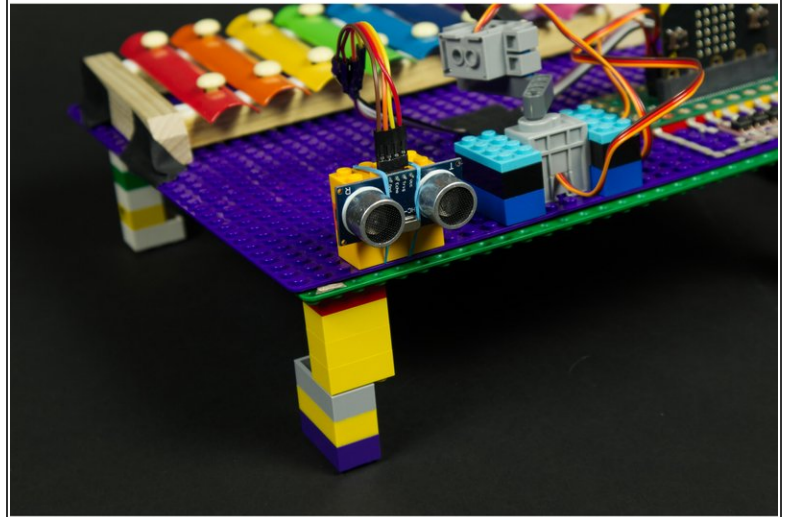
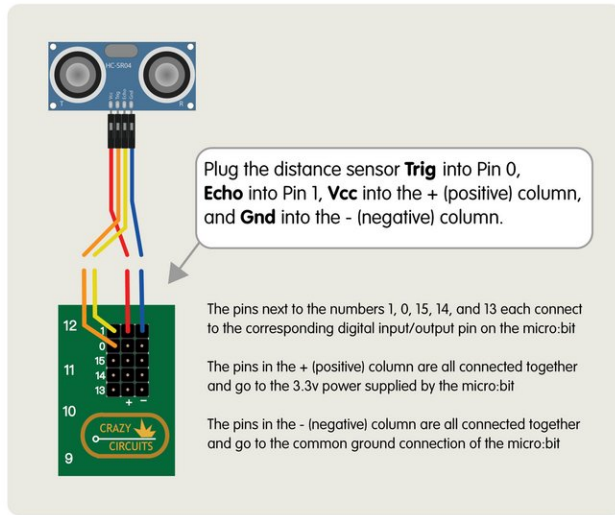
- ① If you haven't built a micro:bit powered Xylophone yet, start with our [Xylophone guide](#).
- ① If you want to check out another distance sensor project, or see more information on the sensor, see our [Distance Display guide](#).
- Once you have a working (micro:bit powered) Xylophone you can add your distance sensor.

Step 2 — Remove Button 1



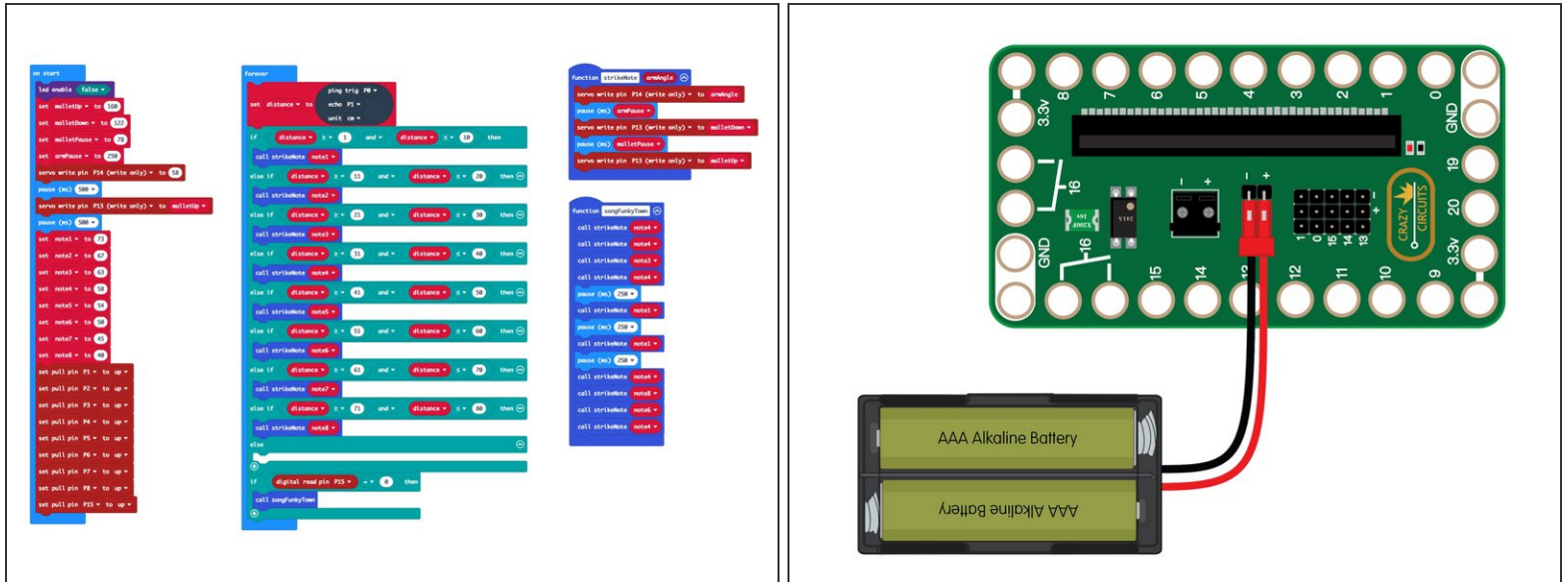
- If you've build the micro:bit powered Xylophone from our previous guide you'll have a row of 8 push buttons that were used to trigger the mallet to play notes.
 - We're going to remove the first button, that is connected to Pin 1 because we'll be using Pin 1 to connect our Ultrasonic Distance Sensor.
 - You can remove all the buttons if you want to do a full conversion (or just skip adding them when you build your Xylophone.)
- ❗ If you already have buttons it's easy to keep them in place if you want to switch back to button control later.

Step 3 — Add the Distance Sensor



- Use the 4 jumper wires to connect the Ultrasonic Distance Sensor to the header pins on the Bit Board.
- ① We found that a few rubber bands and LEGO bricks work well to hold our sensor in place pointing in the right direction. (Tape can also work.)

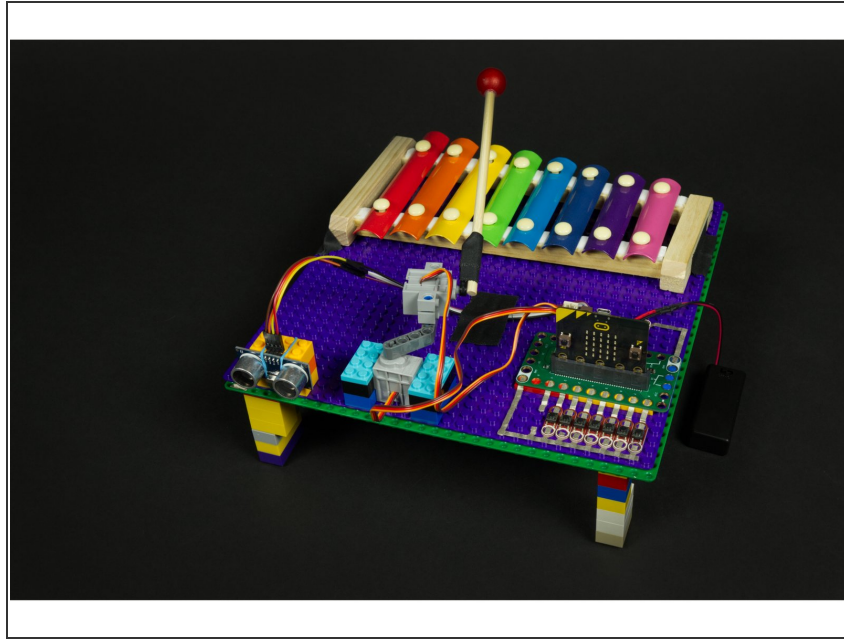
Step 4 — Load the Code



- Connect a USB cable to the micro:bit and then plug it into your computer.
- We'll be using makecode.microbit.org to program our board. It uses a simple drag and drop block interface.
- We're going to load the following code for our **Distance Xylophone** program:
https://makecode.microbit.org/_aAC0vX4Rp...

⚠ Remember that when the USB cable is plugged in it will power the micro:bit but not the servos for the Xylophone, so you'll need to add a battery pack before it works.

Step 5 — Test it Out!



- Once you've got your battery pack connected to the Bit Board you can test it out!
- Try standing at least half a meter in front of the distance sensor and then walking slowly towards it (or just run fast if that's your style!)
- Try standing out of the line of sight of the distance sensor and lowering your hand at different distances... can you play a song?