Maker Skill: micro:bit Make Your Own Buttons

In addition to the built-in buttons, you can build and code with your own buttons using micro:bit. The "pins" are the areas numbered 0, 1 and 2 at the bottom of your micro:bit, and you can connect wires and conductive materials to each of these pins to create your own buttons that can sense when they are being touched.

You'll need:

- Your micro:bit, USB cable, and battery pack (optional)
- 2 or more alligator clips
- Conductive materials like aluminum foil, copper tape, paper clips, brass brads, metal objects, or even fruits and veggies!

To get started:

- Head to https://makecode.microbit.org/ and click on "New Project"
- You will need a physical micro:bit to build your own button. If you don't have a micro:bit, you can still create code and test it out on the simulator.
- Check out this tutorial to learn how to download a program to your micro:bit.

**Build your button:**

In this example, we'll build a button using alligator clips, aluminum foil, cardstock, and a glue stick.
- Connect one alligator clip to P0 (or P1 or P2) on your micro:bit
- Connect the other end of that alligator clip to something conductive. In this example, we've glued some aluminum foil onto a piece of cardstock and connected the alligator clip.
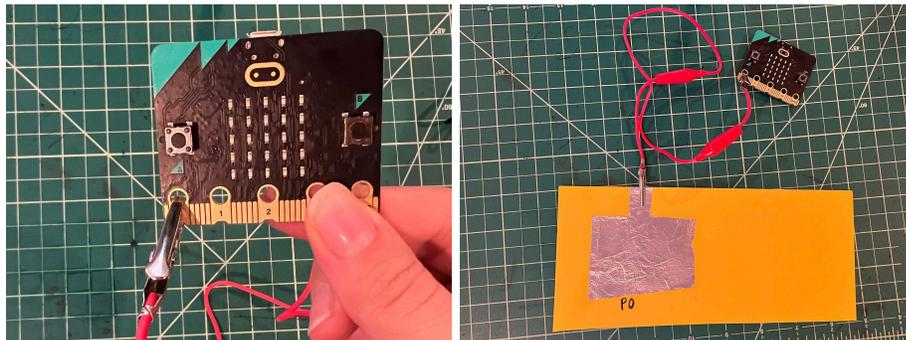
- Connect another alligator clip to GND on your micro:bit
- Connect the other end of that alligator clip to something conductive. Or, hold it in your hand, making sure the metal part of the clip is touching your skin.
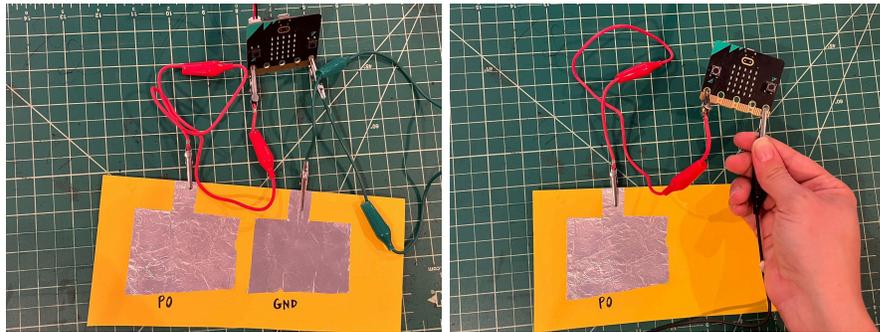
- To "press" your button, touch the GND alligator clip, or the conductive material it's connected to, to the P0 alligator clip, or the conductive material it's connected to.
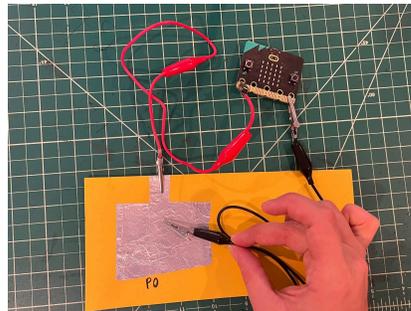
Note: You can use your own body as a conductive material! If you're touching the GND alligator clip with your skin, you can touch the P0 alligator clip, or the conductive material it's plugged into, to "press" your button.
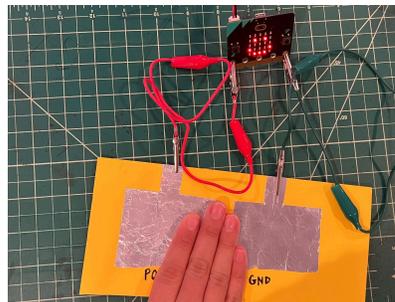
Code your button:

- Click on to ⊙ Input display the magenta "Input" coding blocks.

- Drag the on pin P0 ▾ pressed button into the coding area.
- Inside the "on pin P0 pressed" button, place the blocks that will tell your micro:bit what to do when your button is pressed. This code will run one time as soon as the button is pressed.

Design your own buttons! Try some of these building and coding challenges.
- Come up with an interesting way to connect and disconnect the P0 and GND parts of the button.
- Design a musical touchpad that plays different notes or melodies when you touch different areas (requires micro:bit v2)
- Program a reaction timer or another simple game on the LED matrix and design your own controller.
- Create an interactive quiz card that displays answers on the LED matrix when you touch a question.