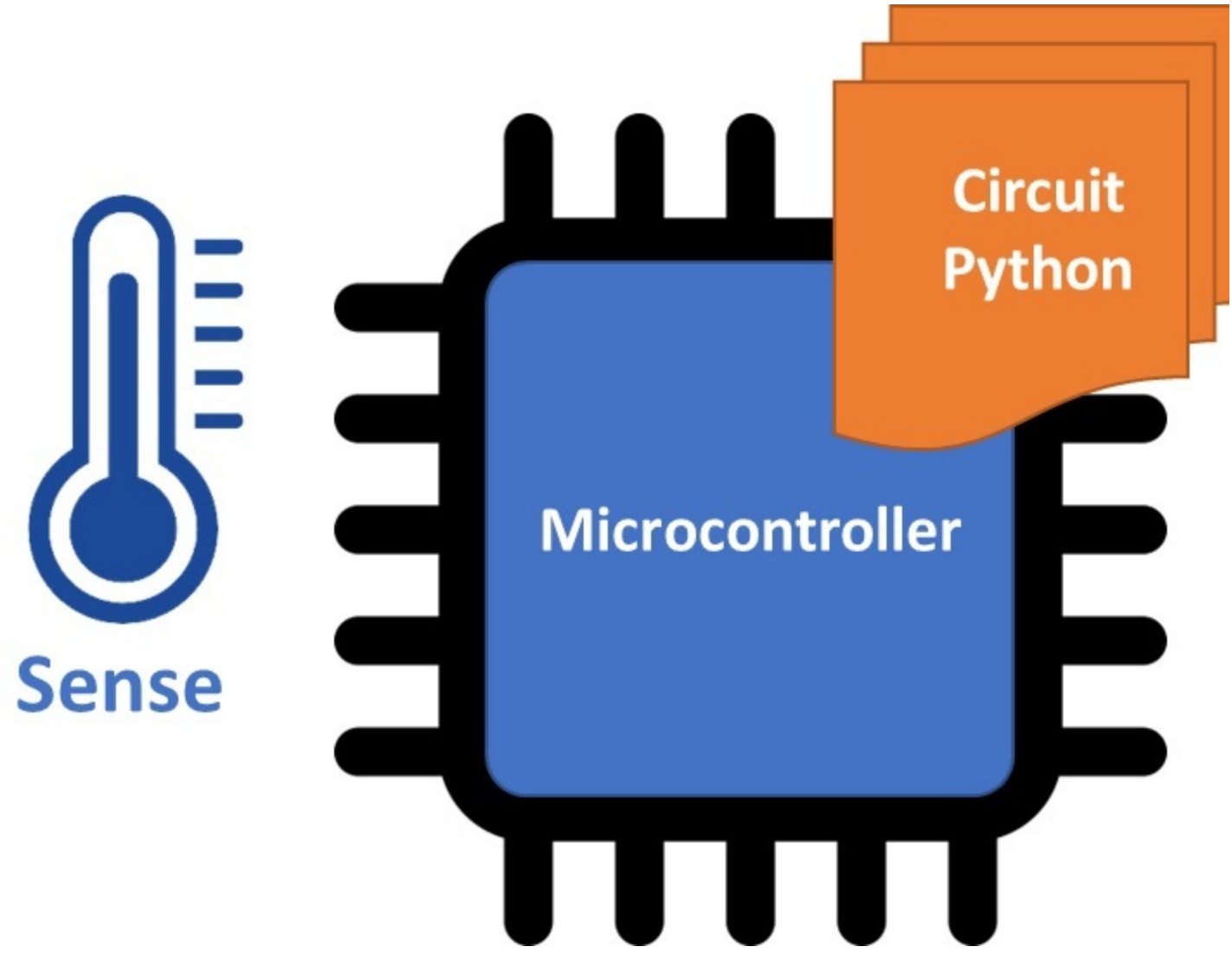
# Circuit Playground Sound Sensor

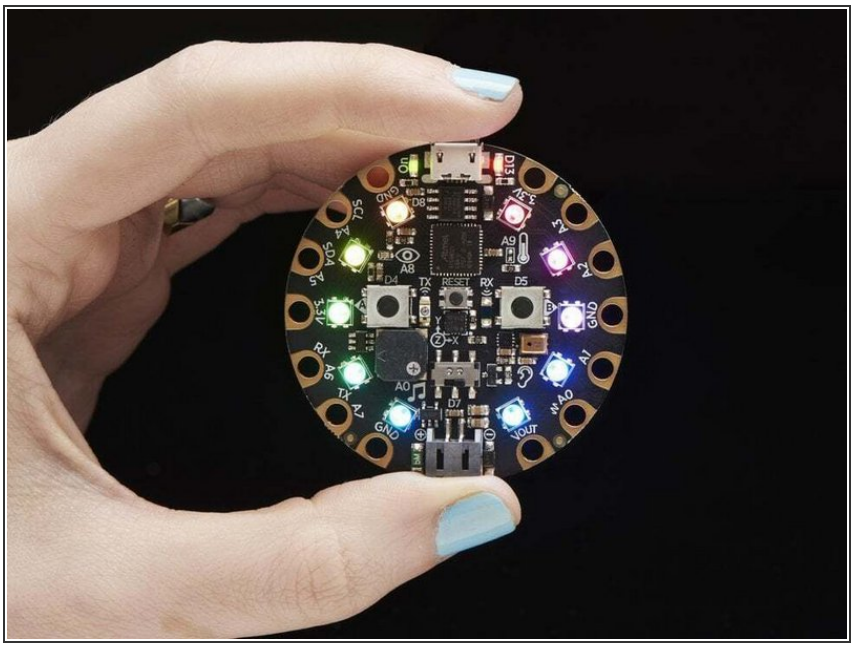
Written By: Kate Cheville



# INTRODUCTION

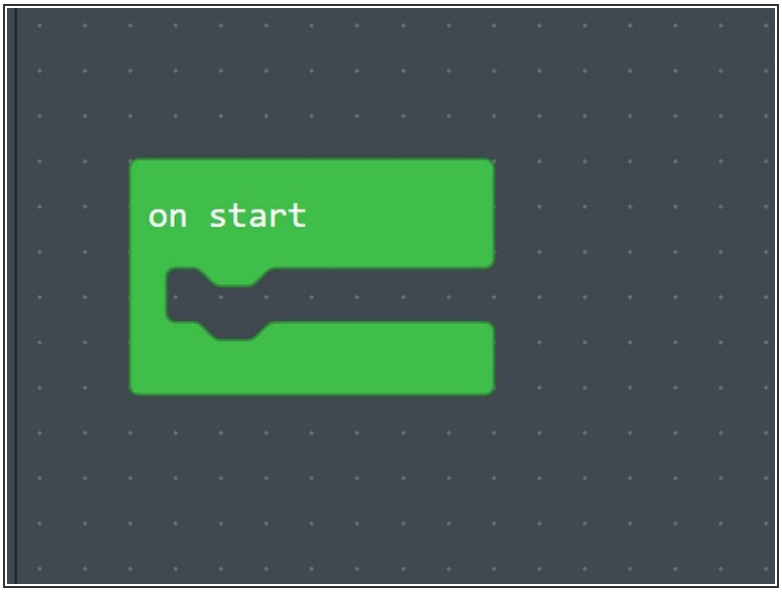
Learn how to use the sound sensor onboard the Circuit Playground Express! This tutorial uses MakeCode, which is an easy-to-use code writing program!

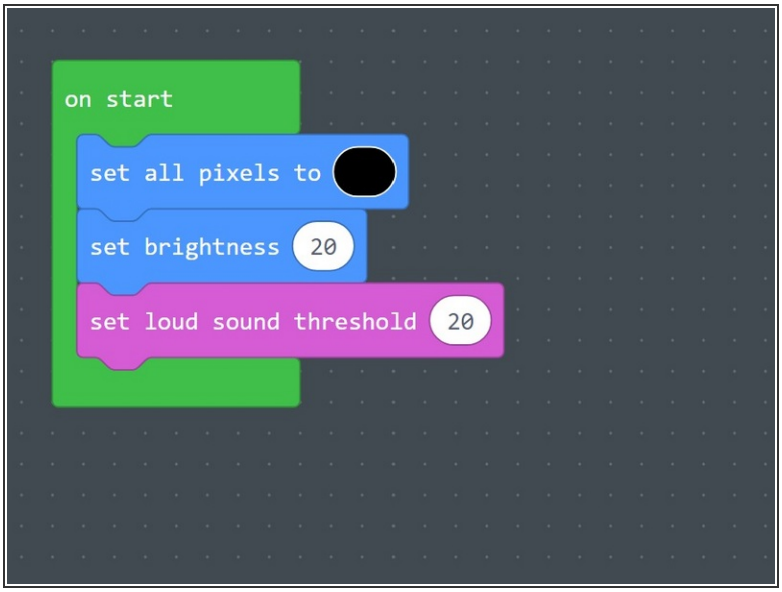
## Step 1 — Getting Started




- To start using a Circuit Playground, you'll need a laptop, a circuit playground, and a USB cable
- If you've never used makecode before, check out this tutorial to learn about it

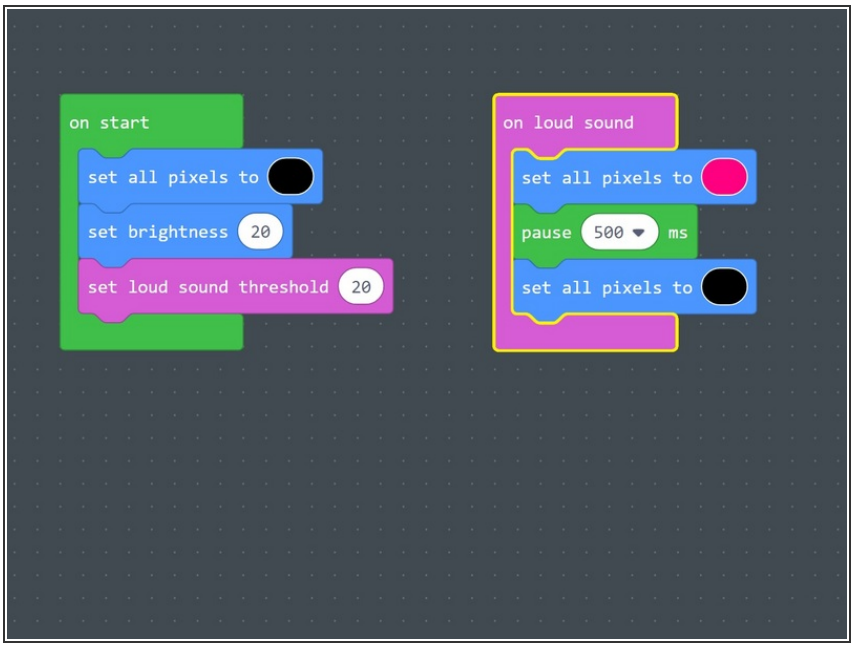
## Step 2 — On Start



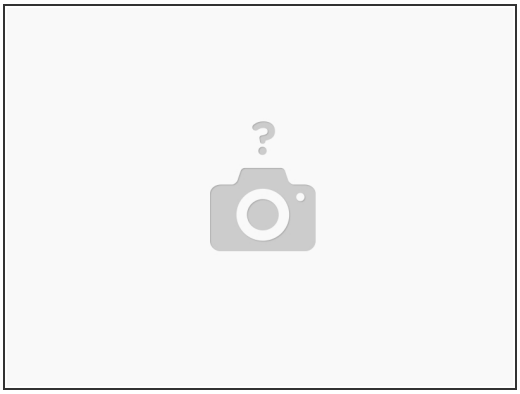

- Ignore the ***forever*** loop that is already there, it'll be used later.
- Place an ***on start*** loop in the workspace.
- Inside the ***on start*** loop, place a ***set all pixels to...*** block. Change the color to black
  - ⓘ This doesn't turn the pixels fully off, but rather makes it so they don't emit any light!
- Place a ***set brightness*** block inside the loop as well. Change the brightness to whatever you'd like
- Finally, add a ***set loud sound threshold block***. This will determine how loud a sound has to be to turn the lights on. Change the threshold as you see fit.

## Step 3 — Sound Sensor



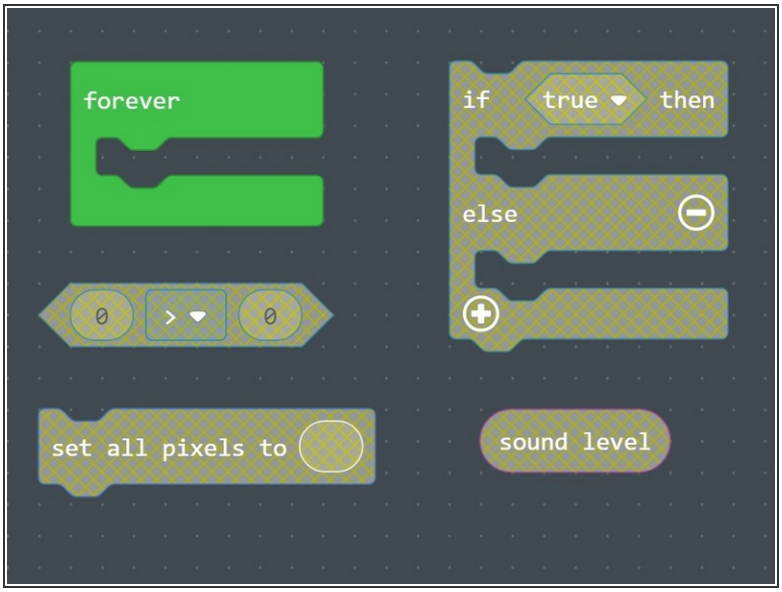

- Drag out an ***on loud sound*** block from the input menu
- Inside the block, add a ***set all pixels to*** followed by a ***pause*** block. Change the duration of the pause to at least 500 ms.
- After the pause, insert another ***set all pixels to*** block and change the color to black

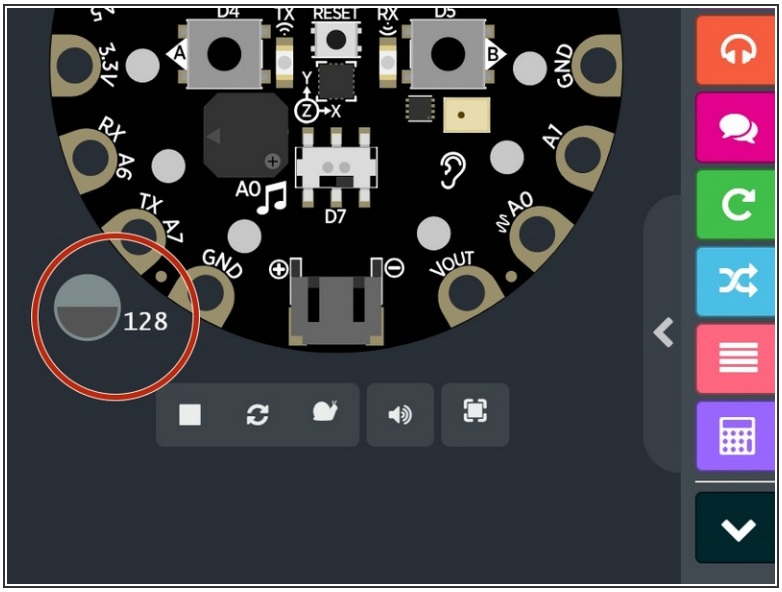
## Step 4 — Writing to the board



- Plug the circuit playground into your laptop using the usb cable
- Download your code and follow the instructions in MakeCode to write the code to the board

## Step 5 — Challenge




- For the challenge, try writing the code so that the leds are on when the volume is above a certain level
- You'll need a ***forever*** loop, an ***if...else*** logic loop, a ***comparison statement***, and the ***sound level*** from the input menu
- You can use the interactive volume slider to test your code before writing it to board. Click and drag to change the volume of the sound