Squishy Sound

Use Squishy Circuits conductive dough to create fun sound effects.

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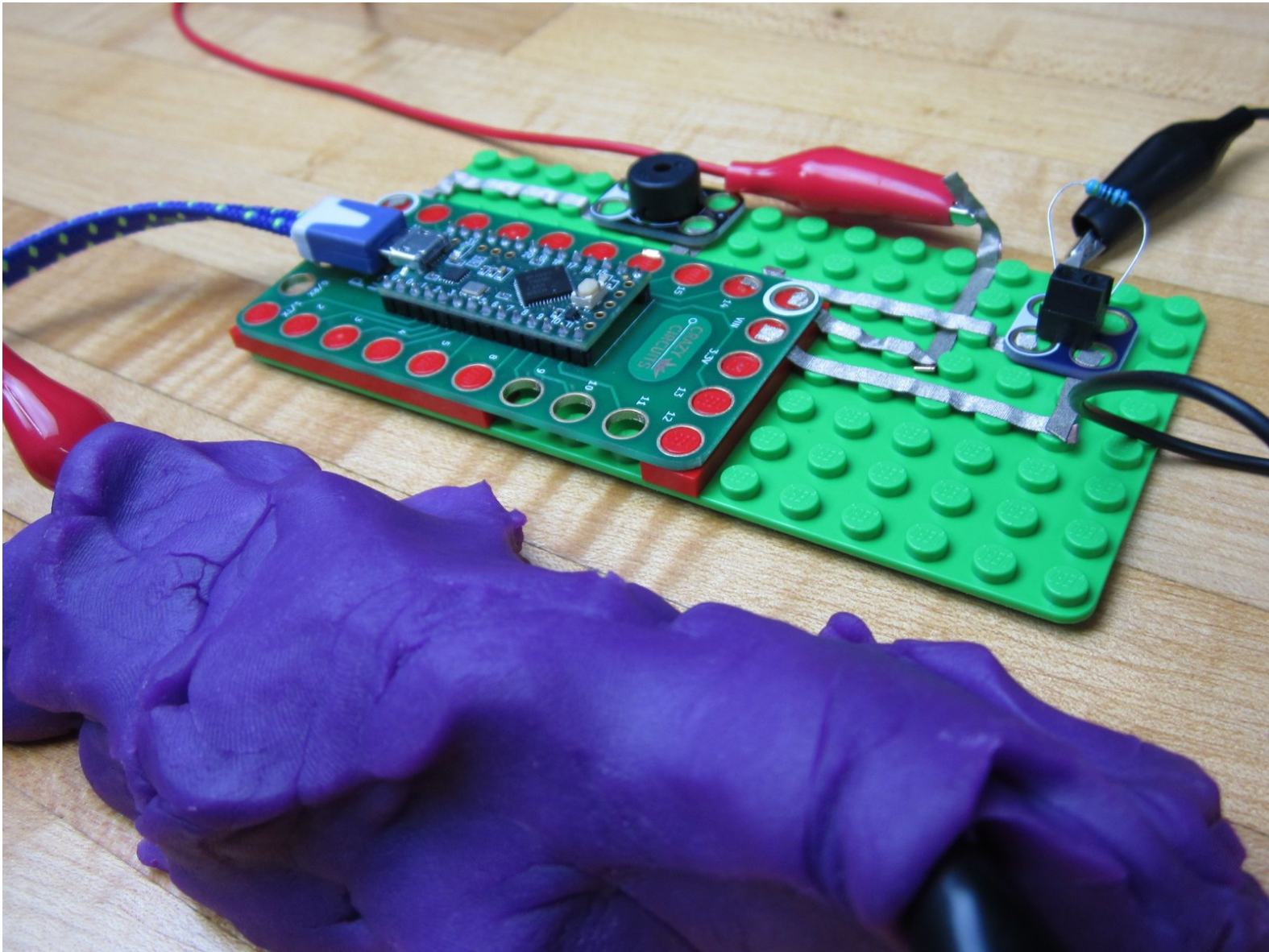
INTRODUCTION

Conductive Dough is extremely fun to use in place of a Potentiometer (variable resistor) in projects and you can use it to control all sorts of things. In this activity we'll be using dough to control the sound being produced by a Piezo Speaker hooked up to one of our Touch Boards.

If you have a Robotics Board you can also do this project, you'll just have to change a couple of pin numbers in the code.

TOOLS:
- Scissors (1)
- Screw Driver (1)

PARTS:
- Crazy Circuits Touch Board (1)
- Crazy Circuits Piezo Speaker Chip (1)
- Crazy Circuits Screw Terminal Chip (1)
- Squishy Circuits Conductive Dough (1)

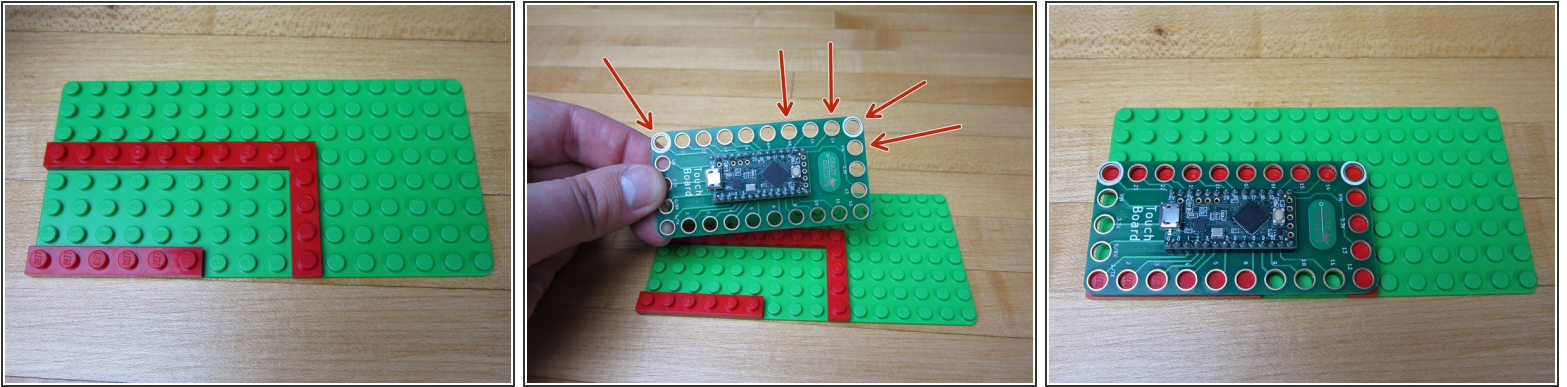This document was generated on 2022-04-03 05:41:06 PM (MST).

Step 1 — Screw in the Resistor

- Grab a Resistor and screw it into the Screw Terminal Chip.

- ⓘ We're using a 460 ohm resistor, however a resistor of near or similar value will work.

- ⓘ If you don't have a Screw Terminal Chip around you can always just use Conductive Tape to hold the Resistor down. We attached a small diagram of what that would look like at the end of this write up.

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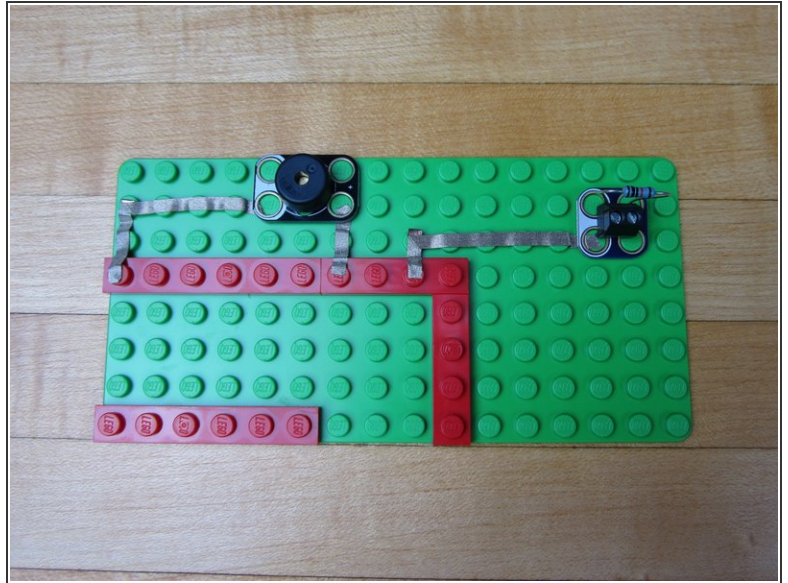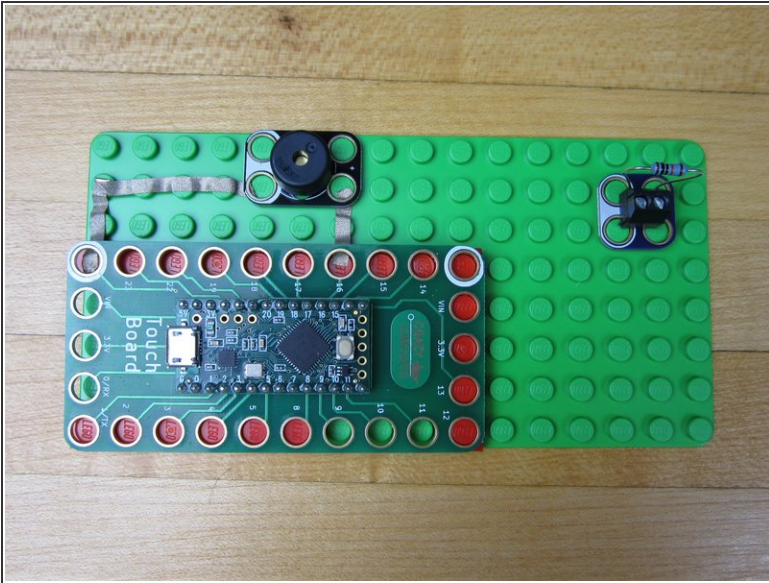## Step 2 — Make a Platform for the Touch Board

- The Touch Board won't lay flat onto our 8x16 base plate, so we'll need to make a platform for it. We're using several thin plates to create the platform.

- (i) You NEED to have bricks below the pins that you're using, otherwise the tape won't make a connection. We're using both Grounds, Pins 14 and 16, and the VIN on the right side.

Step 3 — Add the Piezo Speaker
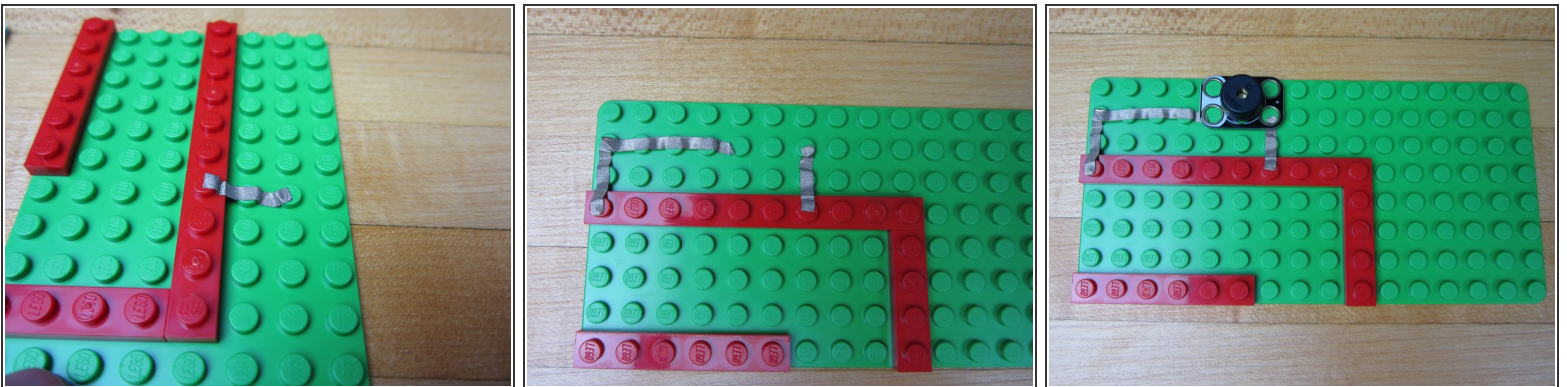
- Run Conductive Tape from Pin 16 to where you want your Piezo Speaker. Cut excess tape and press down with your fingernail or the Piezo Speaker.

- Run Conductive Tape from the left side Ground Pin (white circle) to the Piezo Speaker.

- Press your Piezo Speaker into place.

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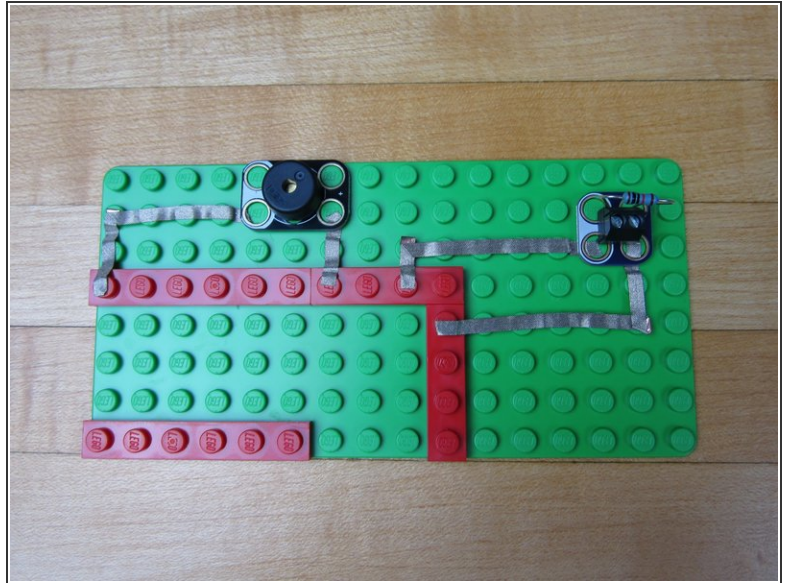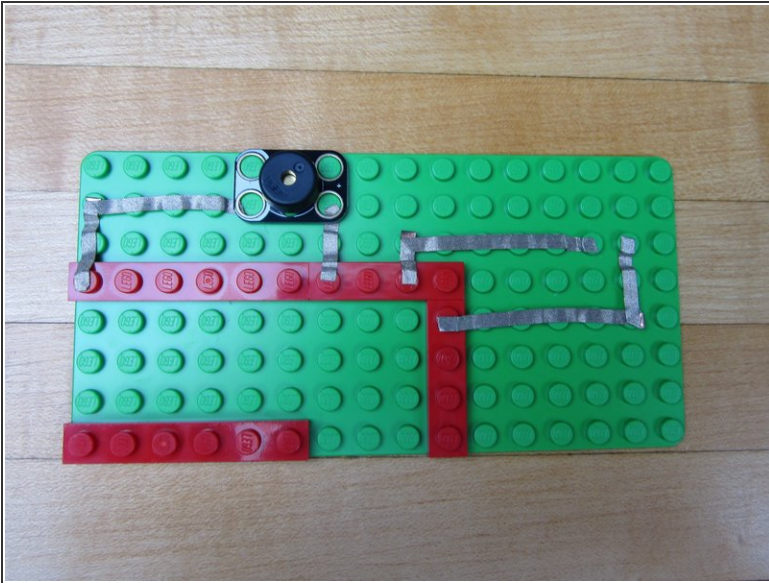
Step 4 — Connect Pin 14 to the Screw Terminal

- Place your Screw Terminal near the top right corner for placement.

- Run a line of Conductive Tape from Pin 14 to the white side of the Screw terminal.

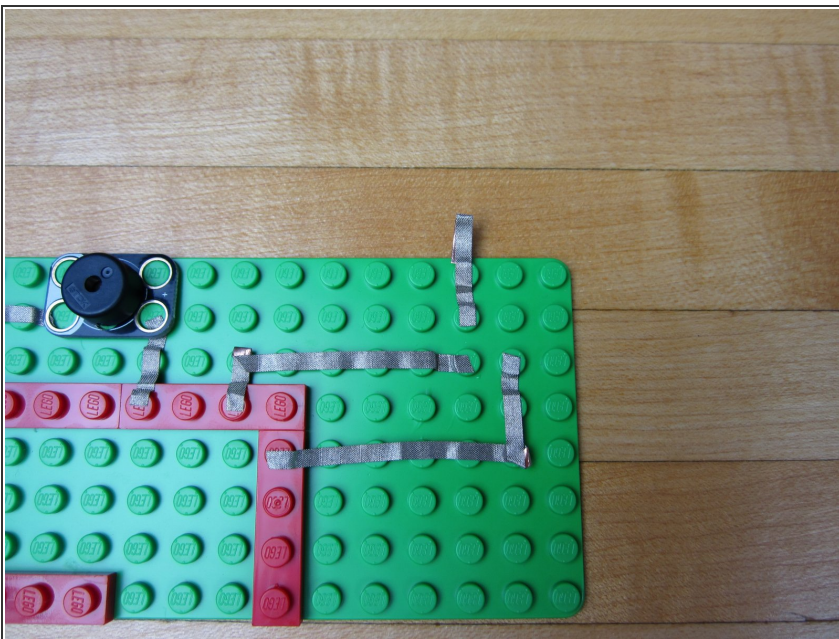- Cut excess tape and press to fit.

## Step 5 — Connect VIN to the Screw Terminal

- Run a line of Conductive Tape from the VIN pin to the blue side of the Screw Terminal.

- Cut excess tape and press to fit.

Step 6 — Add an Alligator Connection Strip

- Use a piece of Conductive Tape and and go from the second hole on the Screw Terminal off the side of your building surface.

- Fold over the tape onto itself so it's conductive on both sides. You can also just run it to the bottom side of the base plate as well.
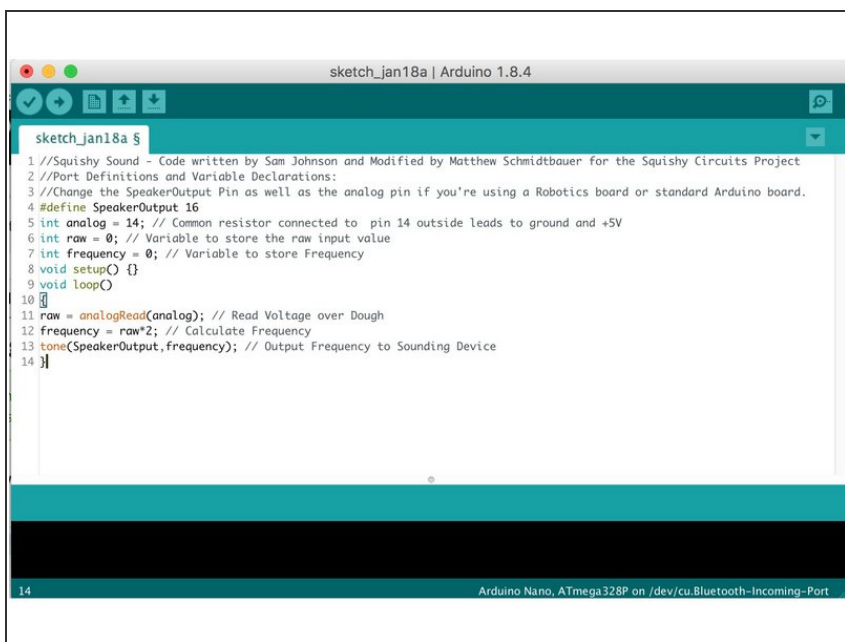
Step 7 — Connect Ground to Alligator Clip
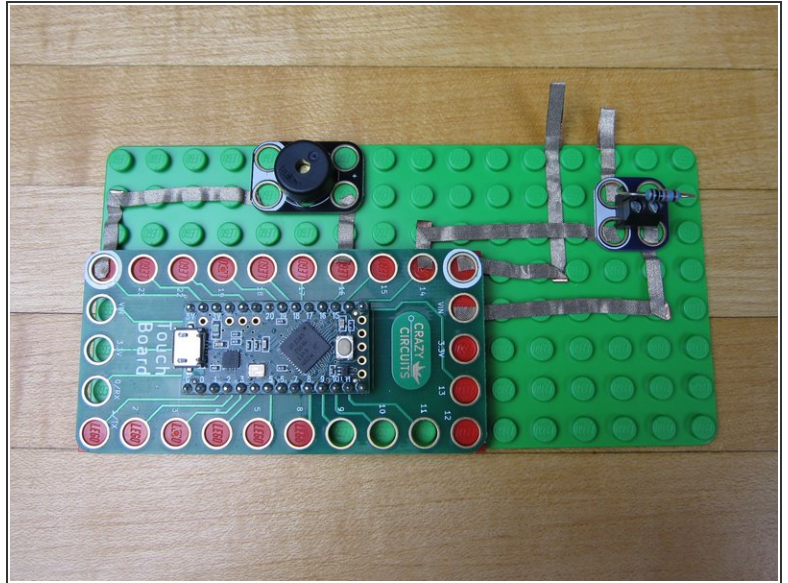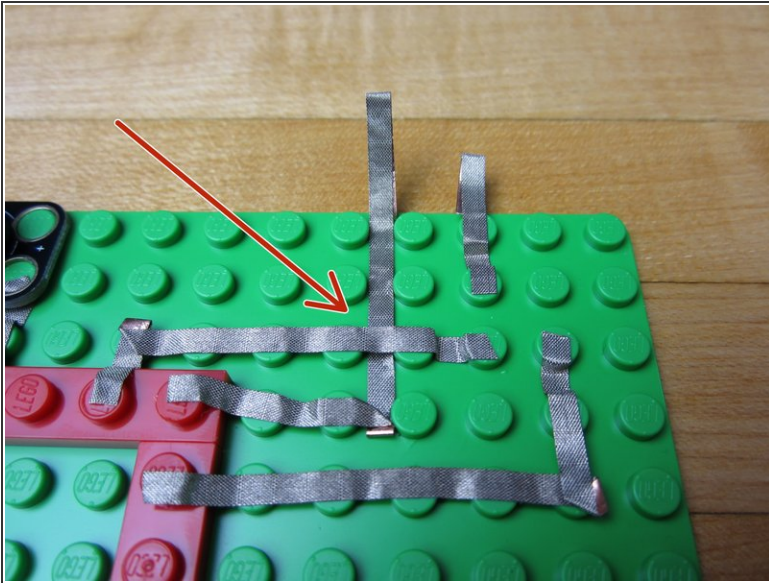
- Use a longer line of tape and go from the Ground pin off the side of the board.

- Start by threading a long piece of tape UNDER the pin 14 line of tape.

- Connect one end to the Ground pin. Let the other end hang off the edge, and fold it over like you did before.

- Use a pencil, screw driver, or paper clip to push down the tape so that the Ground line isn't touching the Pin 14 line.
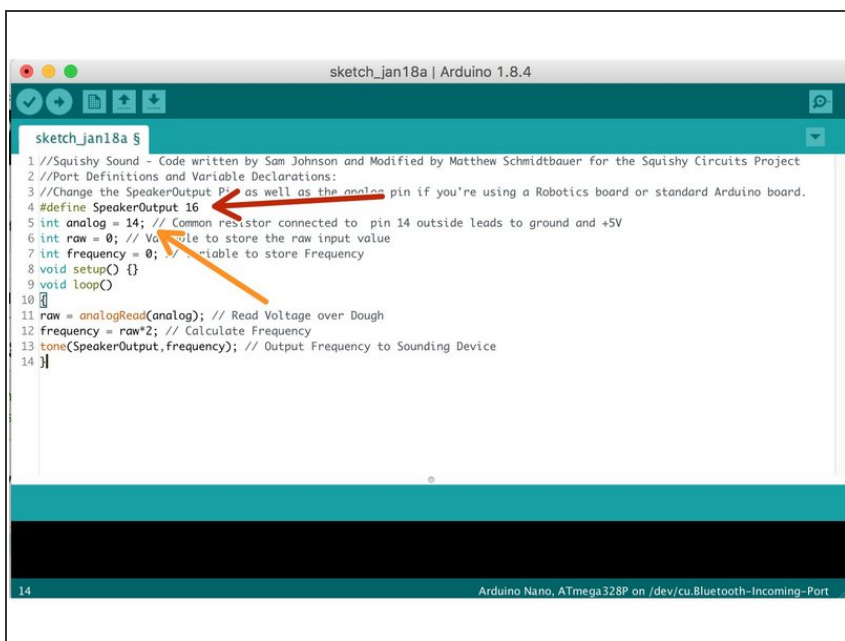
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Page 7 of 9

Step 8 — Upload Code

- If you've never used your Touch Board before, review the [Touch Board User Guide](#).

- Plug your Touch Board into your computer and open up the Arduino Software.

- Follow [this link](#) and choose either the ConstantTone or StepTone code. Copy and paste the code into a new project window in the Arduino Software.

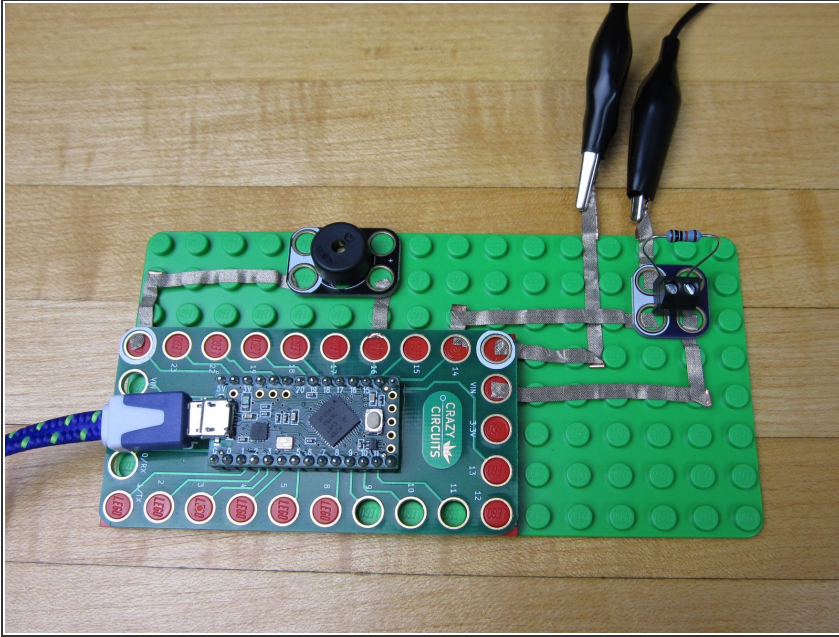- Upload the Code.

Step 9 — Robotics Board Changes

- If you're using a Robotics board you'll need to change a couple of lines.

- Change the Speaker Output Pin to 3.

- Change the Input (Analog Input) to A5.

- At the end of this write up is a diagram for how we suggest you hook up your Robotics Board, however the pins you use are entirely up to you.

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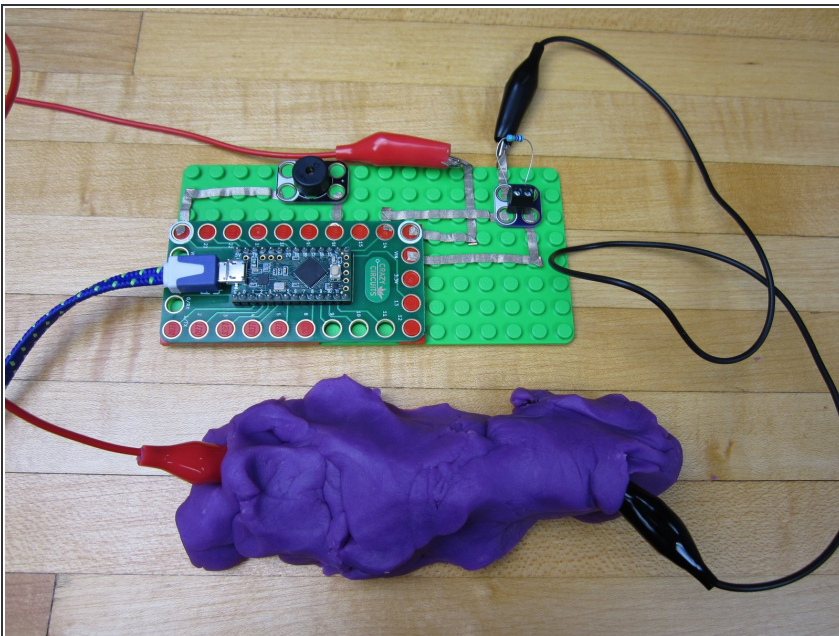learn.browndoggadgets.com/

Page 8 of 9

Step 10 — Test Everything... Again

- Leave your Touch Board plugged into your computer.

- Use an Alligator Clip to connect your two Alligator Connection Points together.

- No matter which code you're using, you should hear something come out of your speaker.

Step 11 — Connect Your Dough

- Connect the second Alligator Clip.

- Plug both Alligator Clips into the dough.

- Stretch the dough, change shapes, and do all silly manner of things. The sounds coming out of the Piezo Speaker will change.

- ⓘ Add a second batch of dough to the mix and make a reaaaaaaallllllllly lone line.

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