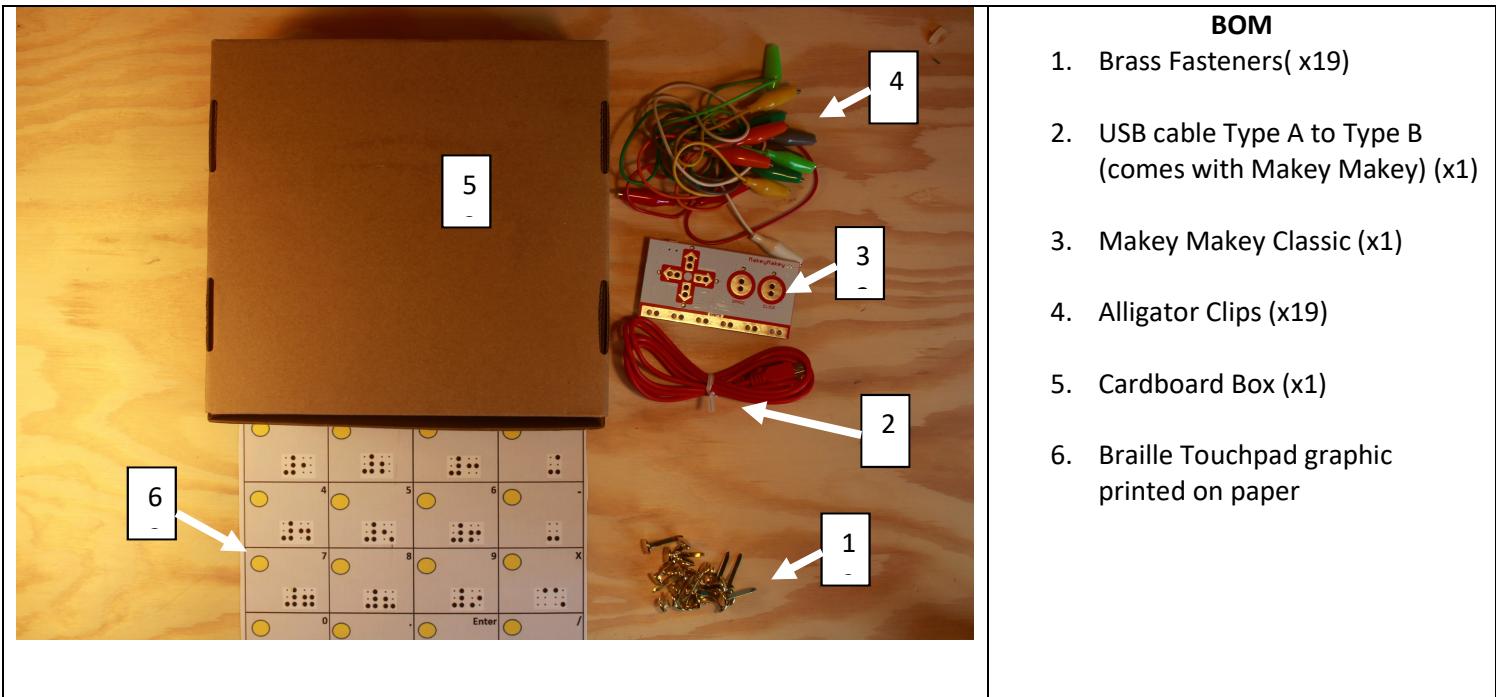


# Braille Calculator ASSEMBLY GUIDE

## Required Components



## Required Tools

- Glue (stick, hot glue, etc)
- 3D printer
- Ink Printer
- Scissors
- Wire Strippers

## Required Personal Protective Equipment (PPE)

- Safety Glasses

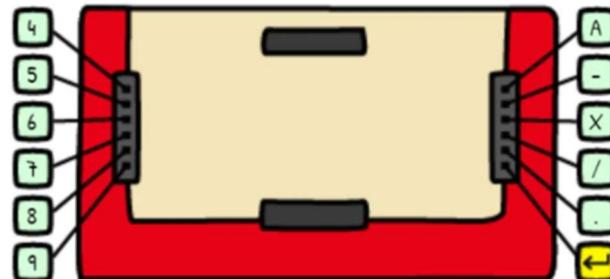
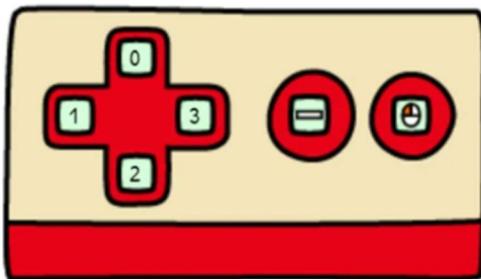
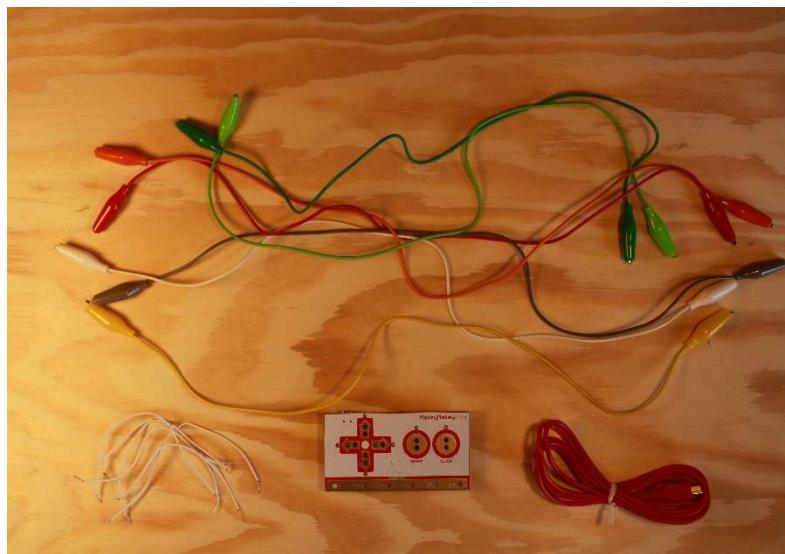
# Braille Calculator ASSEMBLY GUIDE

## Assembly Instructions

### Step 1

Setting up and Re-mapping the Makey Makey Classic:

- Lay out the components of the Makey Makey and follow the instructions found here:  
<https://makeymakey.com/pages/remap>
- When in the remapping process ensure the keys are remapped to reflect the graphic below

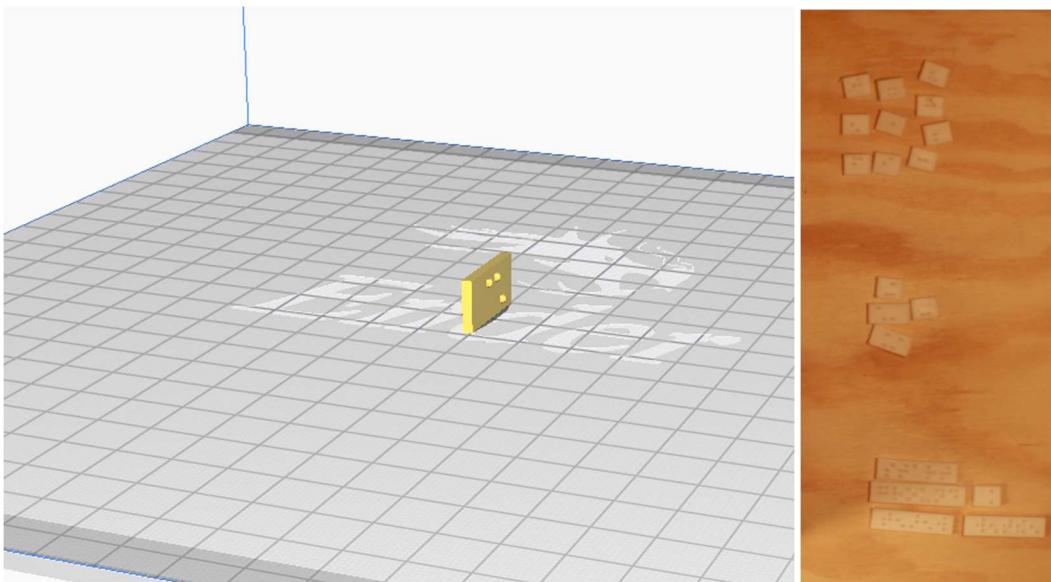


# Braille Calculator ASSEMBLY GUIDE

## Step 2

Setting up the 3D prints:

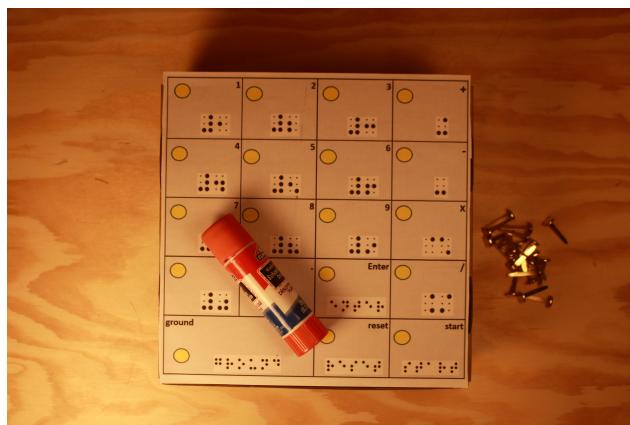
- Follow the 3D printing guide when printing out the files to ensure that the Braille is legible. Make sure the Braille is being printed vertically as shown below.



## Step 3

Setting up the housing:

- Glue the printed braille touchpad graphic to either the larger top or bottom sides of the cardboard box.



# Braille Calculator ASSEMBLY GUIDE

## Step 4

Setting up the housing:

- Using scissors, cut an access hole on the side of the cardboard box. This will be used to allow the USB to exit the side. Therefore, do not make this hole too big such that the Makey Makey could potentially slide out.

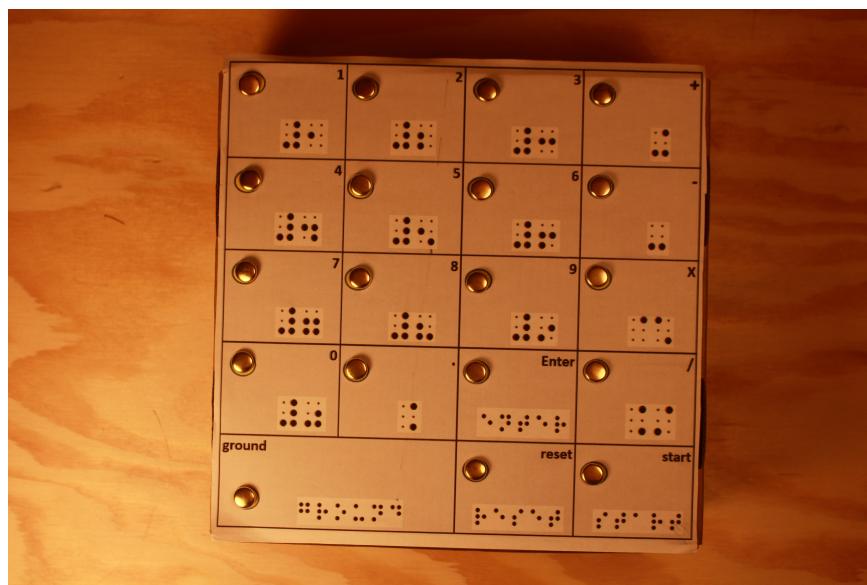


# Braille Calculator ASSEMBLY GUIDE

## Step 5

Setting up the housing:

- Insert the brass fasteners into the yellow circles indicated on the touchpad graphic. This should result in the tongs of the fastener facing inside the box and the flat head on the outside of the box.
- Open the box and write in what each of the brass tongs correspond to avoid confusion in the future.

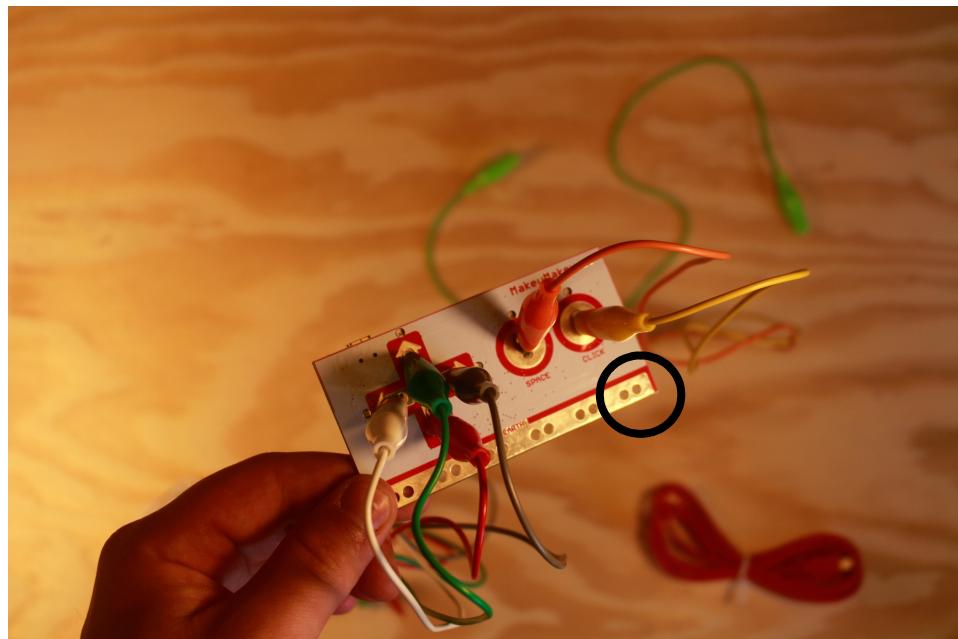


# Braille Calculator ASSEMBLY GUIDE

## Step 6

Assembly:

- Clip the Alligator clips to the front of the Makey Makey as shown below. **Note: In this picture, there should be another alligator clip on any of the “earth” ports seen at the bottom of the board circled in black.**

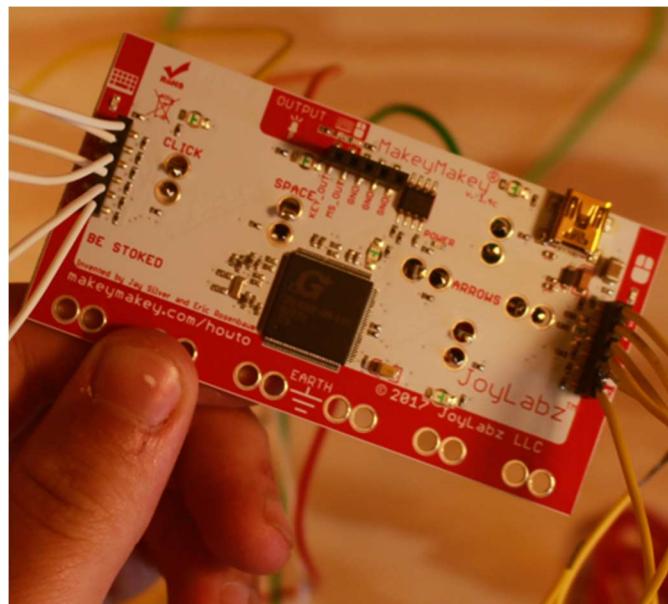


# Braille Calculator ASSEMBLY GUIDE

## Step 7

Assembly:

- With the remaining 12 alligator clips, cut off one end of the clip and strip approx. 1cm of the wire.
- Then twist and insert the stripped end of the alligator clip into the female header ports on the back of the Makey Makey.



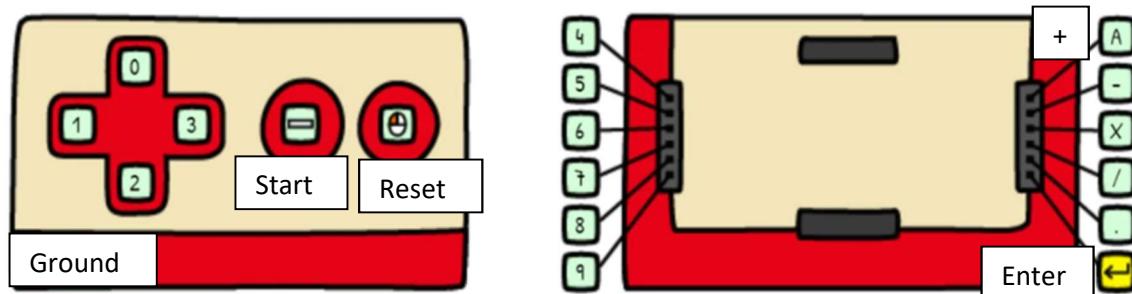
# Braille Calculator ASSEMBLY GUIDE

## Step 8

### Assembly:

Now that all of the alligator clips have been inserted to all ports on the Makey Makey, it is now time to connect the other ends to the brass fastener tongs.

- Place the electronics on the inside of the housing ensuring that the USB is exiting out of the port cut into the cardboard.
- Connect the ends of the alligator clips to the corresponding brass fasteners as shown in the graphic below

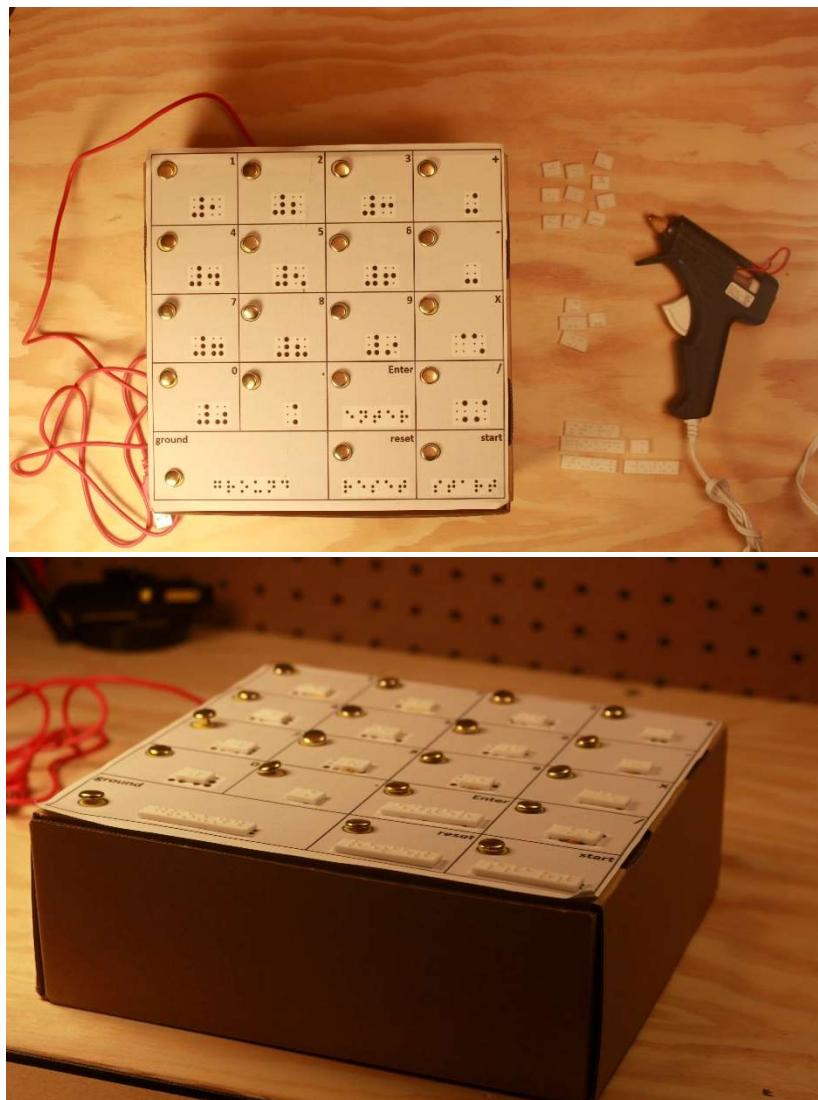


# Braille Calculator ASSEMBLY GUIDE

## Step 9

Assembly:

- Hot glue the 3D printed Braille tiles in the matching spots in the labeling area
- Make sure the labels are straight and in the correct orientation matching the touchpad graphic



# Braille Calculator ASSEMBLY GUIDE

## Step 10

### Testing:

- Plug in the Makey Makey into a device with a USB port and internet connection and open the calculator scratch project in a browser  
<https://scratch.mit.edu/projects/471598668>
- Test the Braille device by following the user guide