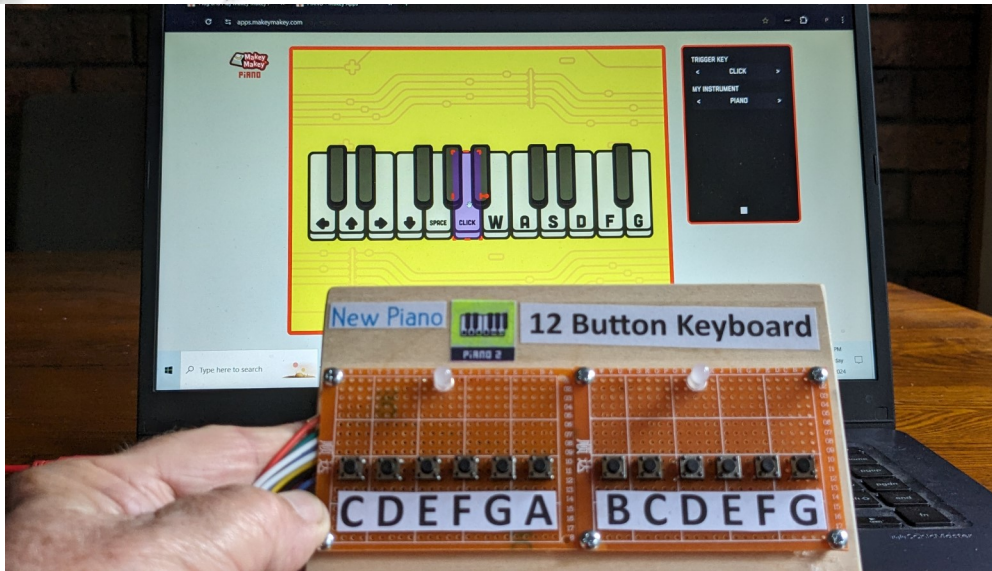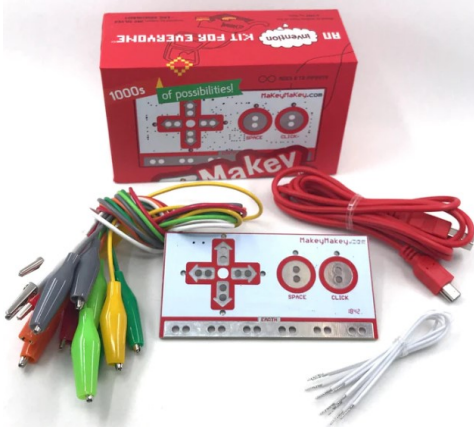# How to Build a 12 Push Button Piano Keypad for your Makey Makey
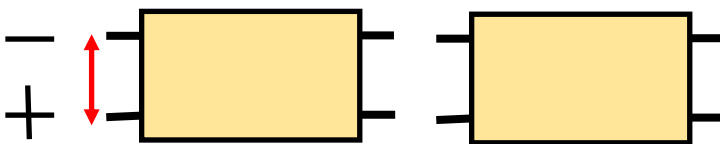
Pat McMahon V1 4/5/2024

Design Brief— Using two 5x7 cm Prototype Boards and 12 Push Button Momentary Switches, Build a 12 Push Button Piano Keypad for your Makey Makey.


Use 6 mm Momentary Push Button Switches

1— Use a Multimeter to check which legs, when the button is pushed, activates the Switch. It is usually the two legs that are closer together.


2 — Below is a partial parts list of the main components. Other optional parts are 150mm of Enamelled Copper Wire, 2 x LED's, 1x 330 Ohm Resistor, backing mounting board plus Alligator Clips or 3mm Banana Plugs to attach your board to the Makey Makey.

14 Lengths of Coloured ~400mm long

12 x Momentary 6mm Push Button Switches

Two 5x7cm Prototype Boards
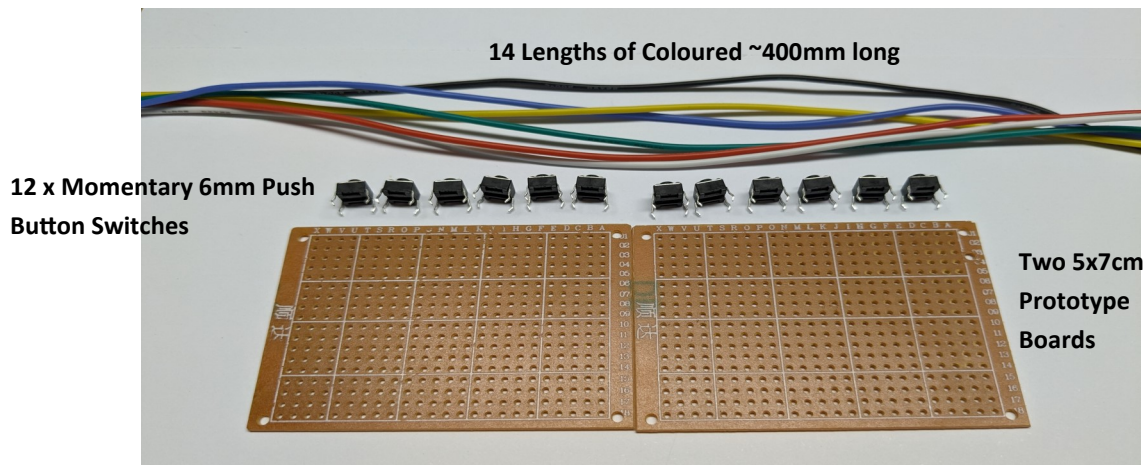
3 — Insert the 12 switches in a line as below, 6 on each board, ensuring the shorter spaced legs are facing to the left and right side.
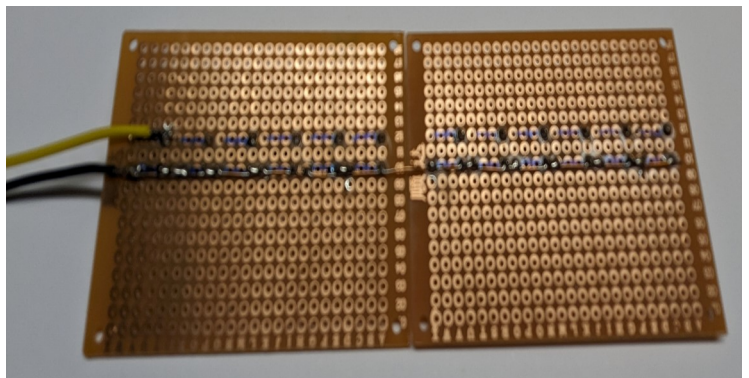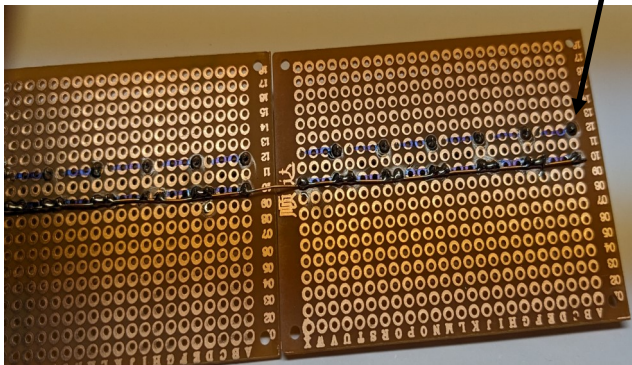
Shorter Spaced Legs
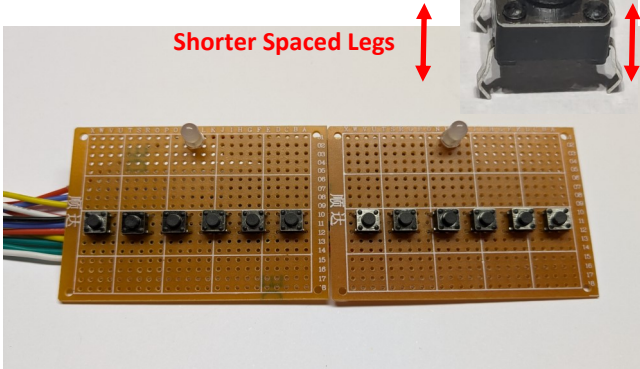
4 — Carefully flip over and align the two prototype Boards. Because it is hard to see the small legs poking through the Donut Pads, using a permanent marker pen, I marked in between the legs for ease of seeing the legs for soldering.
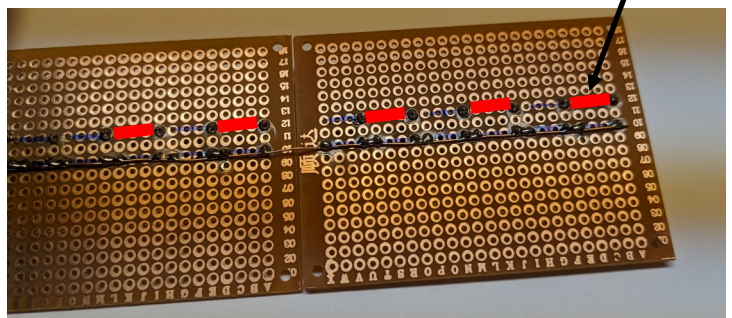

5 — Solder all of the 12 top row of legs to the individual doughnut pads, <u>on the right side only</u>. Using a length of Copper Enamelled Wire, solder it to each of the 24 wider spaced bottom legs (Earth or Ground Legs).

6— Solder a black wire (~400mm long) to the Copper Enamelled row (Earth).

7— Continue to attach coloured wires to the top 12 legs, <u>to one side only</u> of the wider spaced legs, previously marked.

8 — Insert an LED on the under neath face side, bending the short negative leg down to meet the copper enamelled wire and solder. Bend the long positive leg and solder inline, a 330R Resistor, then a wire to go to Key Out on the Makey Makey.
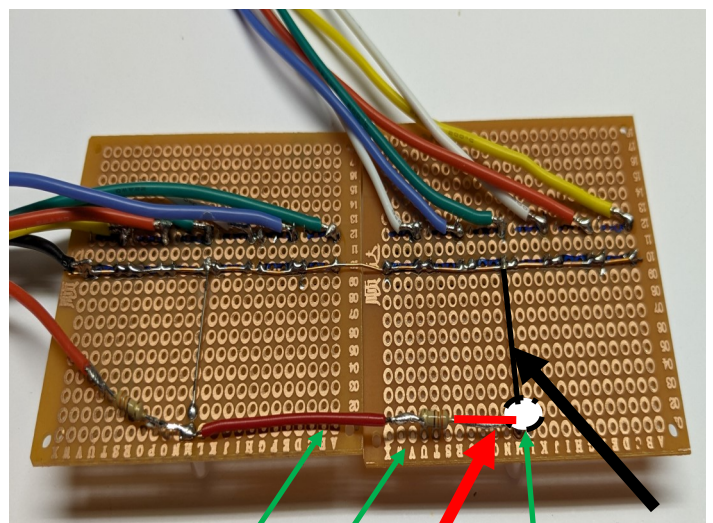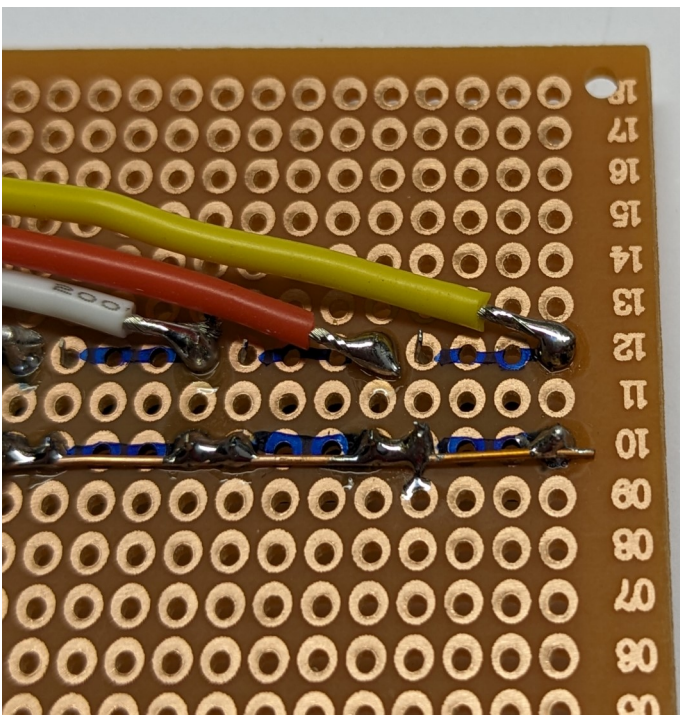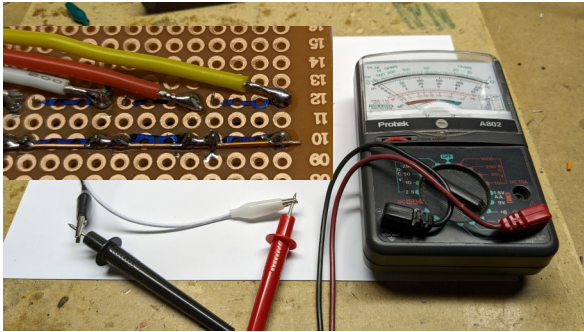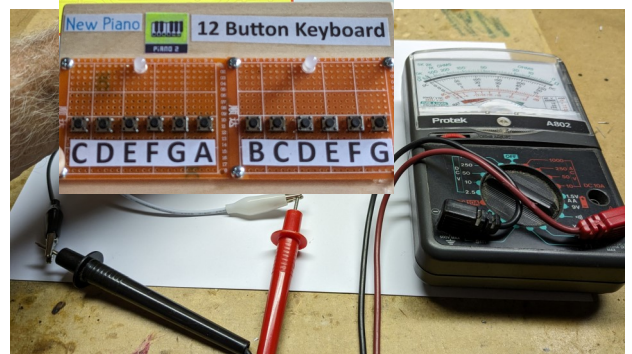

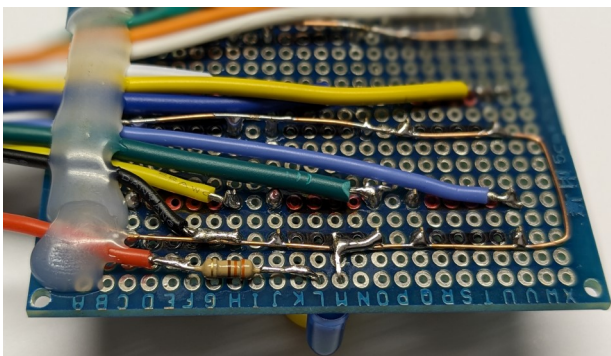Wire to Key Out

330 R Resistor

+

LED

9 — Using a Multimeter, attach it to the Earth (Ground) and to each attached Clip/Wire to test for continuity.


10 — Test each one of the Buttons to ensure each works, when the Button is pushed.


11 — Using a Hot Glue Gun, secure all the wires on one end of the board, to stop them from moving.

12 — Solder the W,A,S,D,F,G wires to a 6 pin Header inserted in the back of the Makey Makey. Attach the (+) wire from the 330 R Resistor/LED to a 5 pin Header inserted in the Makey Makey, to Key Out. Secure with Shrink Tubing if available and label for correct connection.
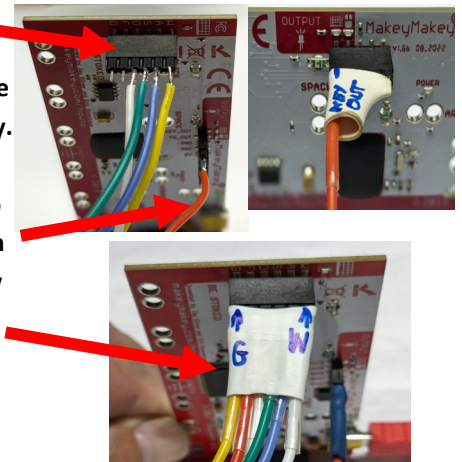
13 — Make up Identification Labels for the Alligator Clip /wires for correct connection and connect all the Alligator Clips/Banana plugs, to the Makey Makey.
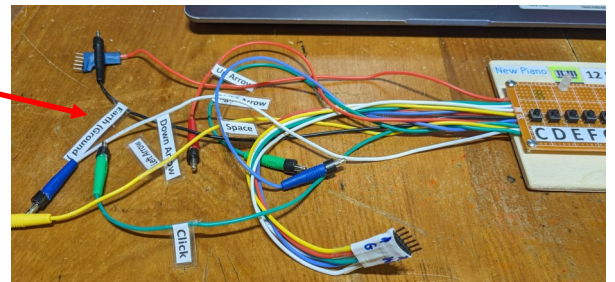
14—Attach the USB cable from your Computer to the Makey Makey.

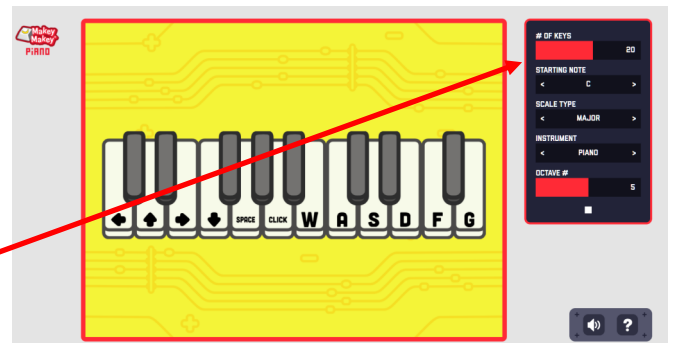15— Search on the web "Makey Makey".

16— Open "Makey Makey Joylabz Official Store" and select "Apps".

17—Select "Plug and Play Apps".

18 —Select "New piano" and press "Play".

19—On the right hand side black Dialogue Box, drag the red bar to the right to get # Keys = 20. Ensure note C, Major, Piano etc.

20— Test your Piano Keyboard by pushing the Buttons and play some Tunes.

Congratulations on building your own 12 Push Button Piano Keyboard for your Makey Makey, Well Done!