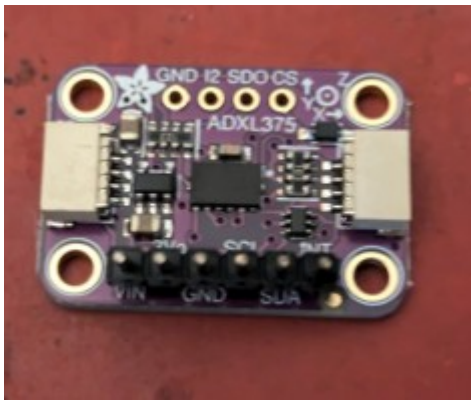
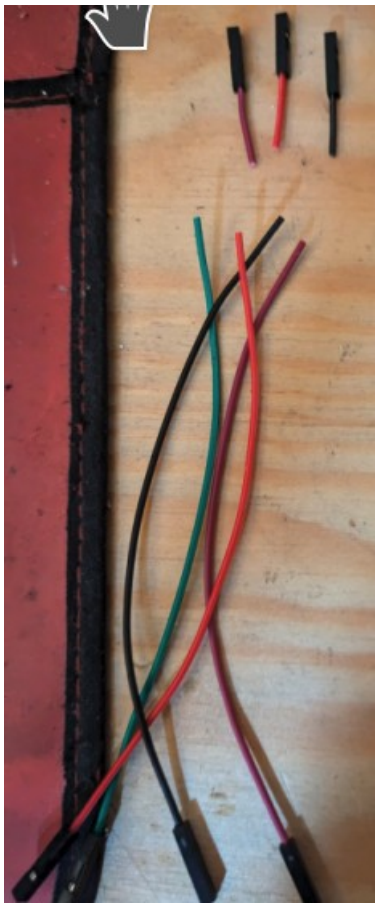
Prior to the electronics build, put CircutPython 9.1.1 on the Pico.  Copy the two library files (adafruit_adxl37x.mpy, adafruit_adxl34x.mpy) into the lib folder of the circutpython USB drive as well once it's running Circutpython.  See the instructions on https://circuitpython.org/board/raspberry_pi_pico/ for how to install CircutPython and get the 9.x libraries files (only install the 2 library files from the bundle).

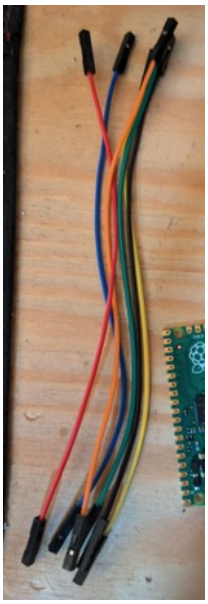
1. install headers on ADXL sensor.  We only need the pins on the 6 pin side.



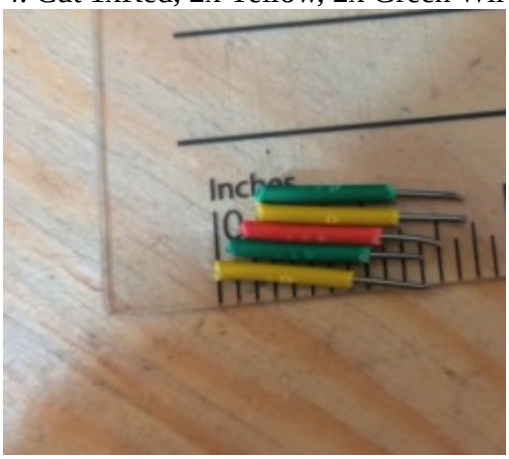

2. Get 4 wires for the sensor. Cut them at approx 4.5 in:



3. Get 6 wires for the SD card.  Again cut at approx 4.5 in:

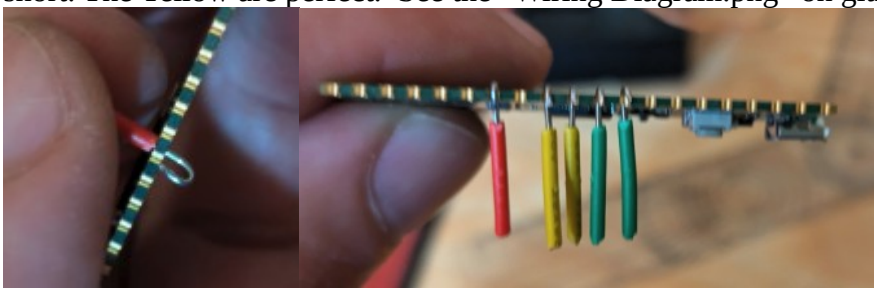



4. Cut 1xRed, 2x Yellow, 2x Green Wires at >.75inches, and strip off at least .25in (.5 is too much).

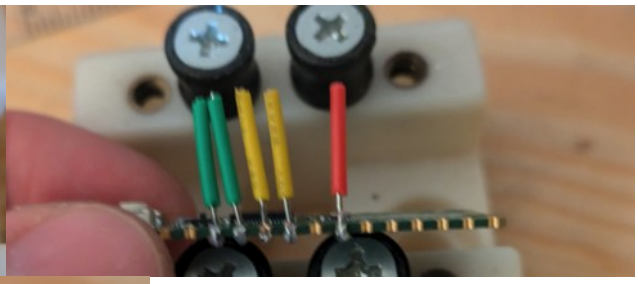


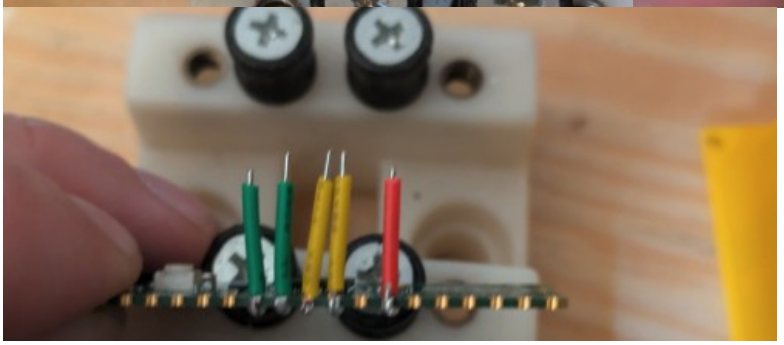
We will slide the insulator up and down. .25 is the minimum and 3/8ths is probably perfect.

5. Make a J at the end to hook it through the board. Do not use up all the wire for the J, just bearly enough to fit into the castelated edge.  Repeat for all 5 wires. In the picture the Green wires are too short. The Yellow are perfect.  See the “Wiring Diagram.png” on github for the latest.



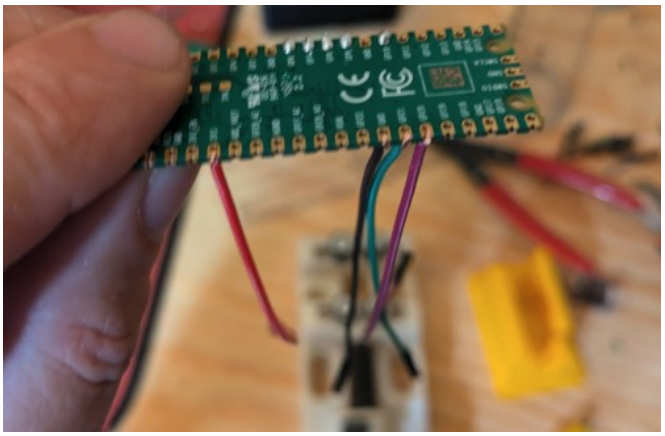
6. Solder wires. Then push down insulator when cool.

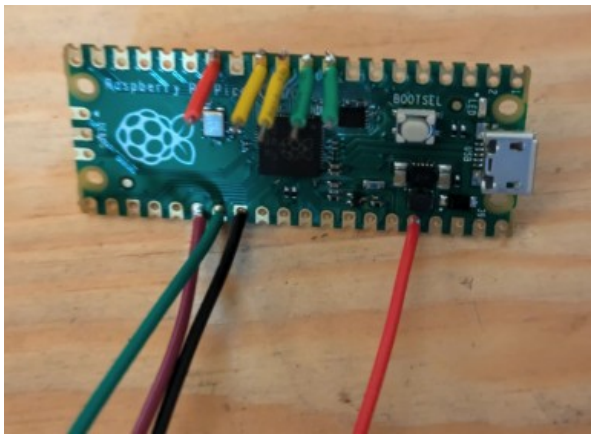




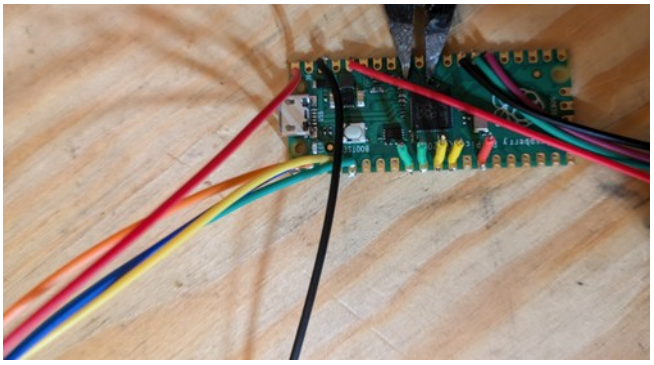
Note… Yellow and one Green are perfect.  Red and one Green too short.

7. Connect Sensor Wires:

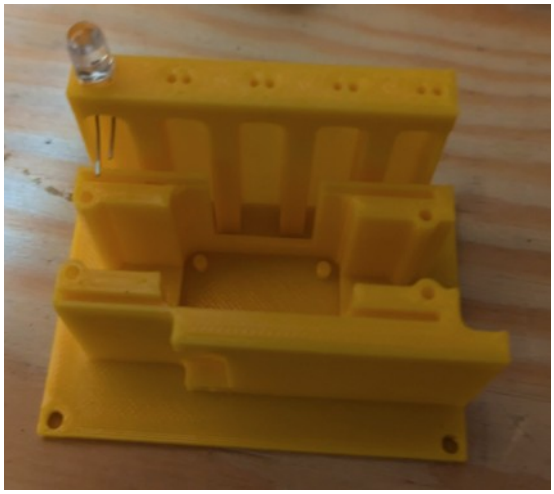




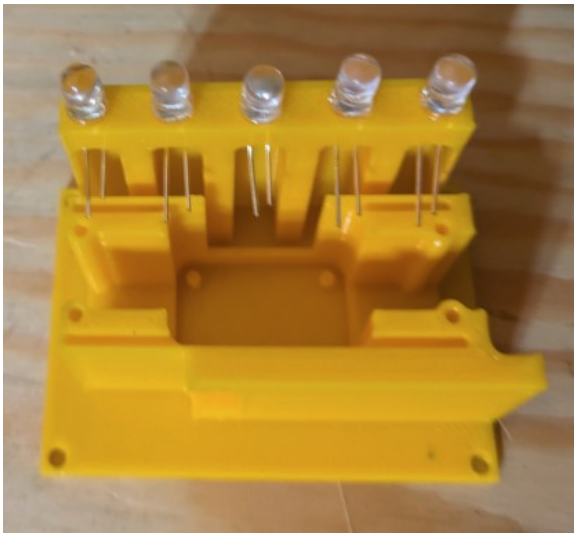

8. Repeat for SD Card Wires:



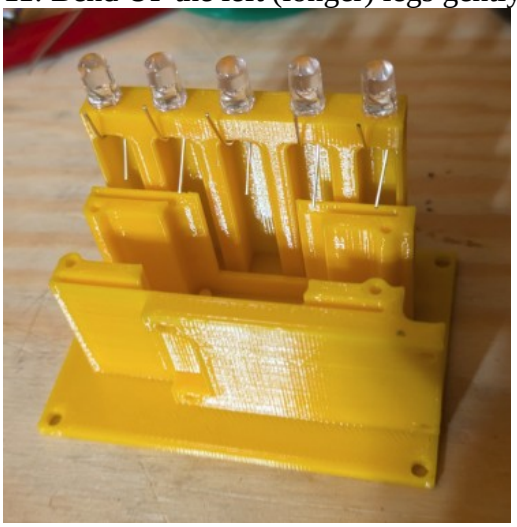
9. Bend and insert LED.  Bend is shown with longer leg on top.  Insert with longer leg to the left.



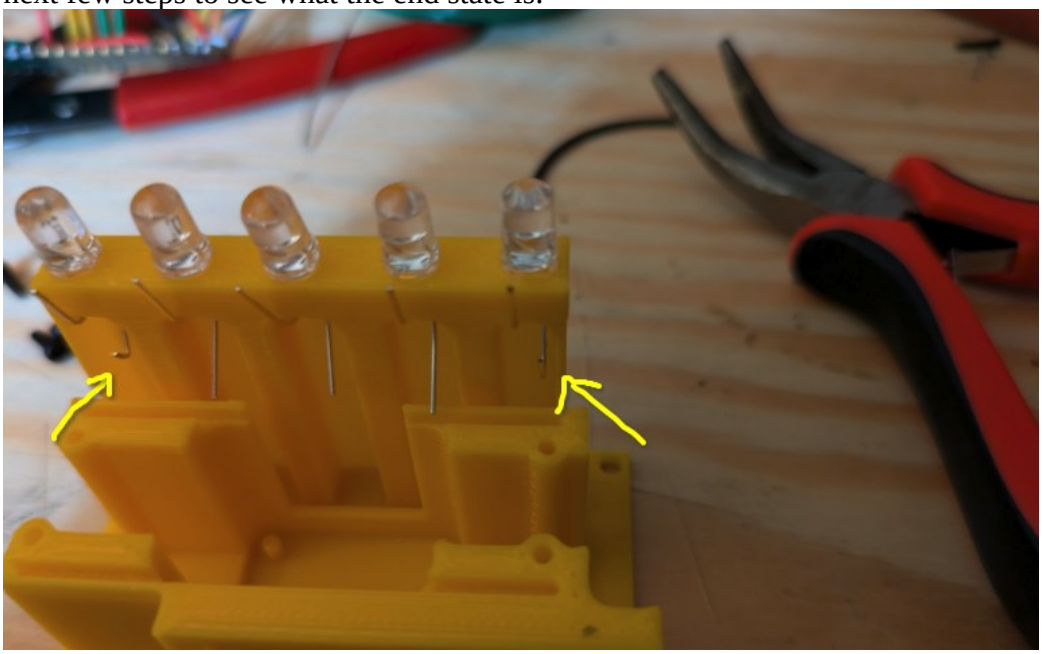
10: repeat for all LED RED, Yellow, Yellow, Green, Green (left to right). Long leg of LED should be on the left.



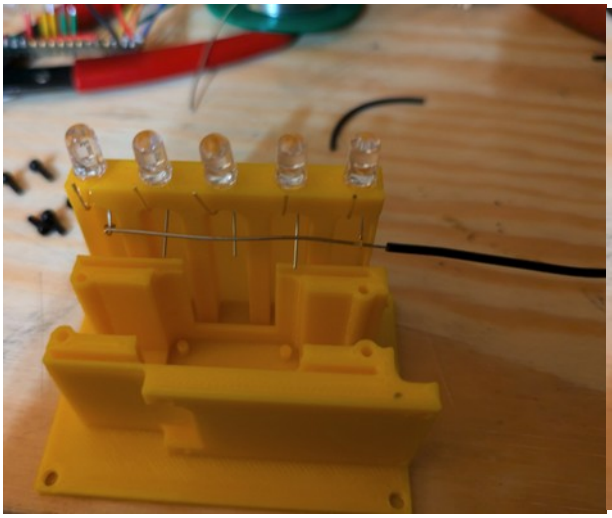
11: Bend UP the left (longer) legs gently.  Bend Down (as shown below) the Right Leg:

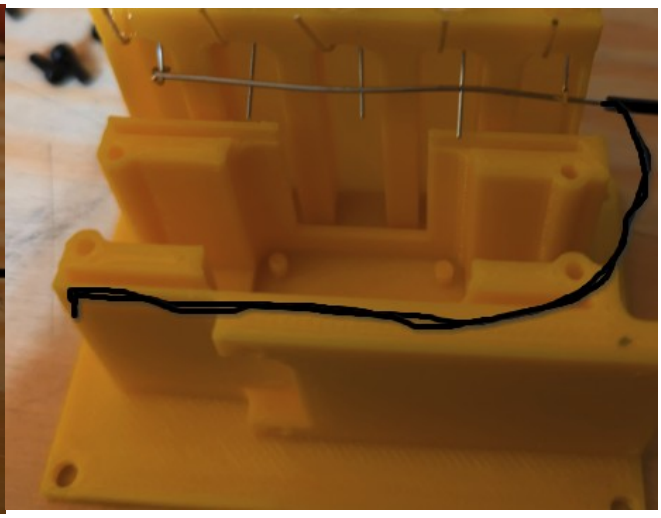


12: Using needle nose pliers bend up the left and right downward legs into a “J”.  Look ahead to the next few steps to see what the end state is:

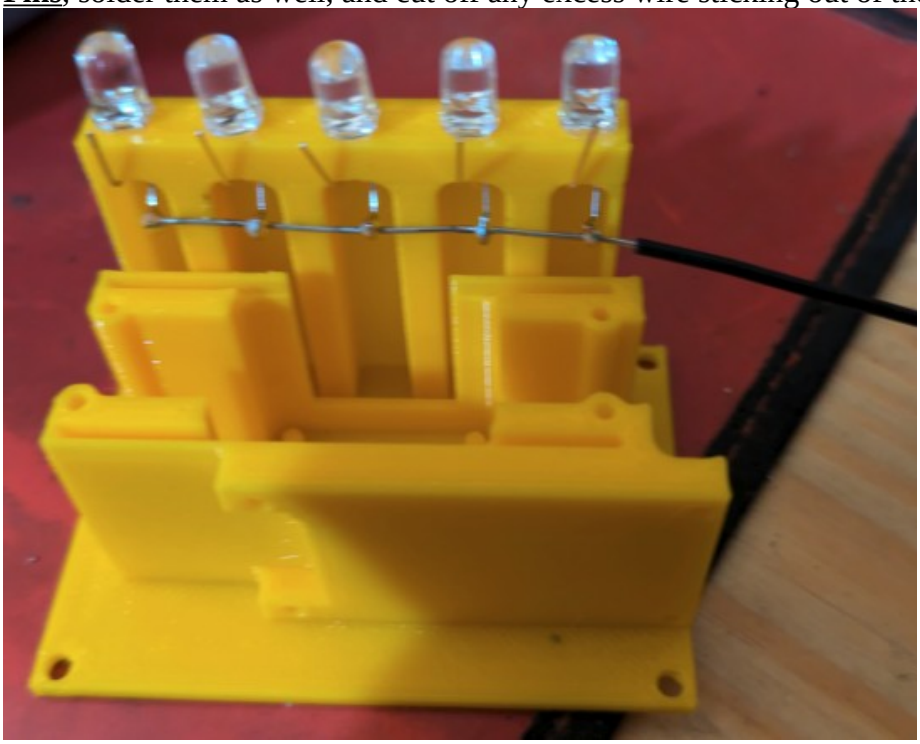


13: cut a long piece of wire (see the second picture to see where it will go LATER), and strip off enough wire to connect all 4 LED:

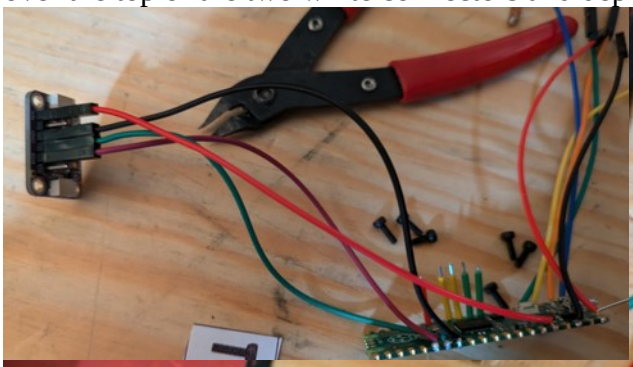


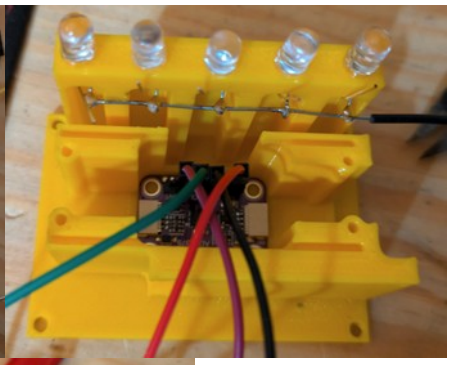


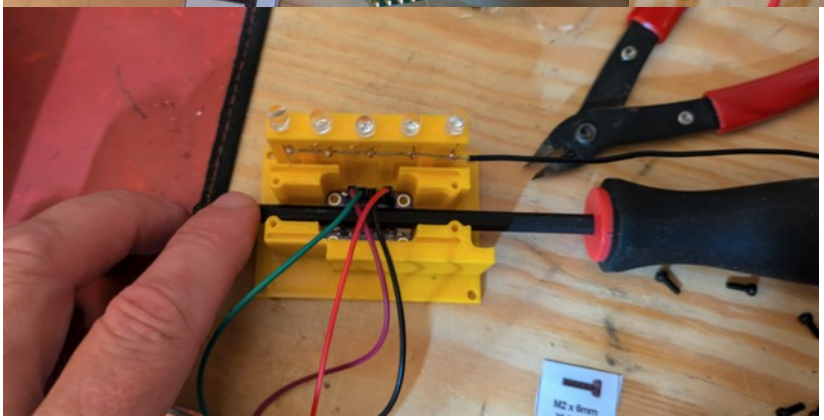
14: Solder the J's (Left and Right) to the wire. **After the Left and Right cool, bend up the other J Pins**, solder them as well, and cut off any excess wire sticking out of the solder:



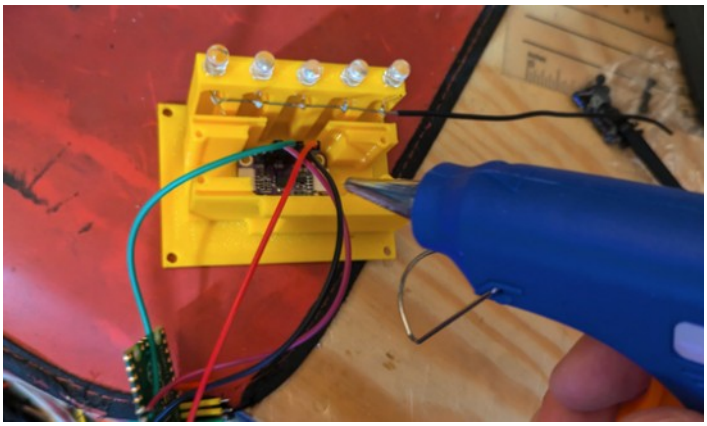
Wire up the sensor,  and Insert it with the wires toward the LED side, if it is a tight fit, lay a hex wrench over the top of the two white connectors and depress:

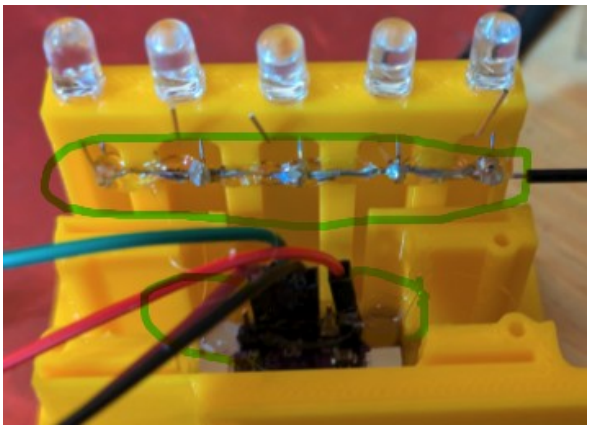




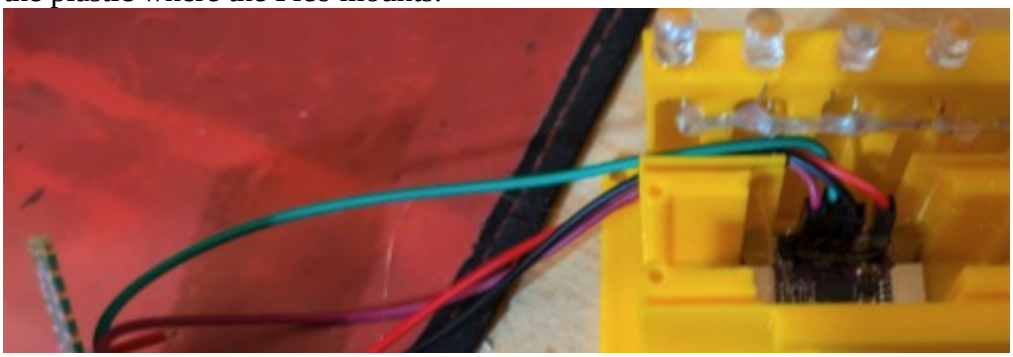


OPTIONAL: Apply some hot glue to the corners of the sensor board (where the yellow pegs stick through) and cover/insulate the LED Wire from step 14.



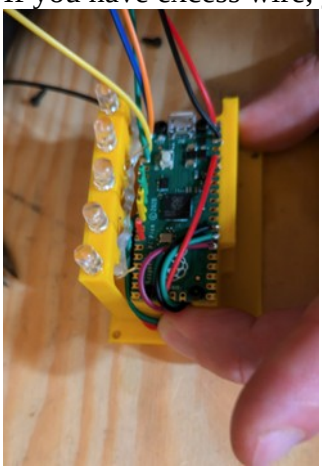


Work the sensor wires behind the plastic under the LED wires and to the left.  They need to be under the plastic where the Pico mounts.

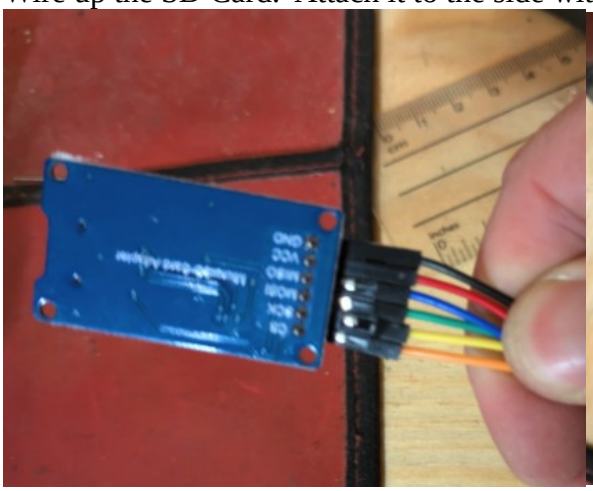


Put the Pico in place and screw in QTY:4 M2x6 Screws being careful not to pinch any wires.
If you forgot to flash the Pico with CircutPython (9.1.1) now is the last time where the reset button is easy to get to.

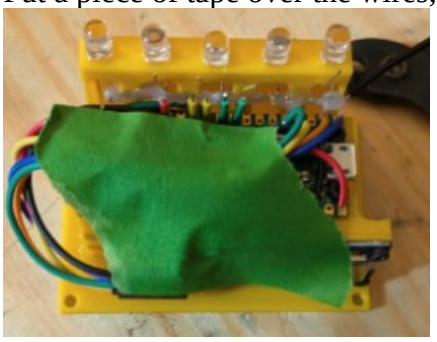
If you have excess wire, you can tuck it in.



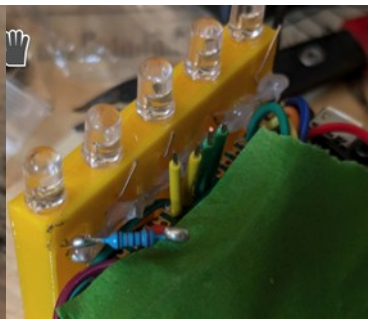
Wire up the SD Card.  Attach it to the side with QTY:4 M2x6 Screws.



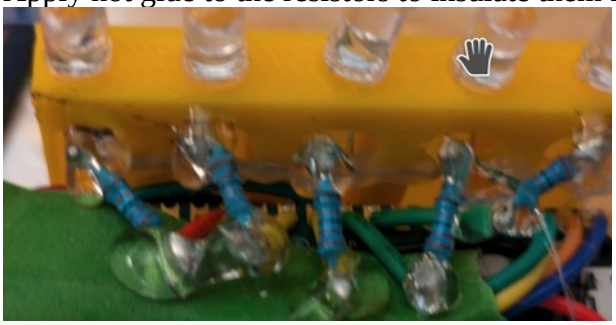
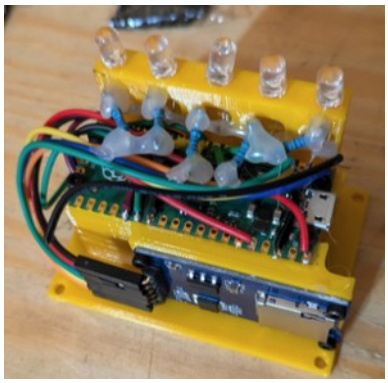
Put a piece of tape over the wires, this will help protect them while we wire up the LED.



Bend each resistor into a little hooked configuration (wrong value resistor shown).
Attach them between the bent up leg, and the colored wires (Red, Yellow, Green). This is the hardest step.  After this things are easier..


Apply hot glue to the resistors to insulate them from each other.  Remove the tape once fully cooled.

Before putting on the cover, **insert an SD Card**, and test the electronics.
Make sure that the code.py is in the root of the circutpython USB drive(not the SD Card), and that the two library files (adafruit_adxl37x.mpy, adafruit_adxl34x.mpy) are in the lib folder of the circutpython USB drive(not the SD Card).  The SD card will get two files written to it if all is right.  Test.txt which is just a test file that gets overwritten each power up.  Data.txt which gets APPENDED to.  If you want each test to have a different file then rename or move Data.txt.

Use 4x M3 screws of length >4mm <10mm to secure the cover to the base.  Attach your USB cable to power it, and when ready for use zip tie it in place.  Yes you can power it off of 3xAA batteries. Currently testing how long it lasts powered off AA Batteries.