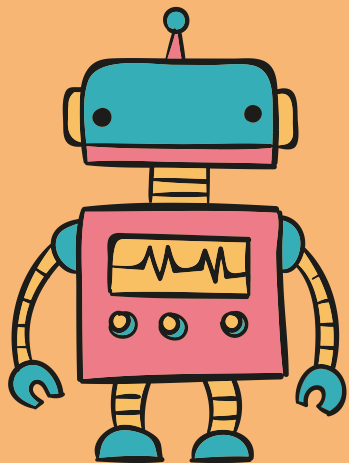
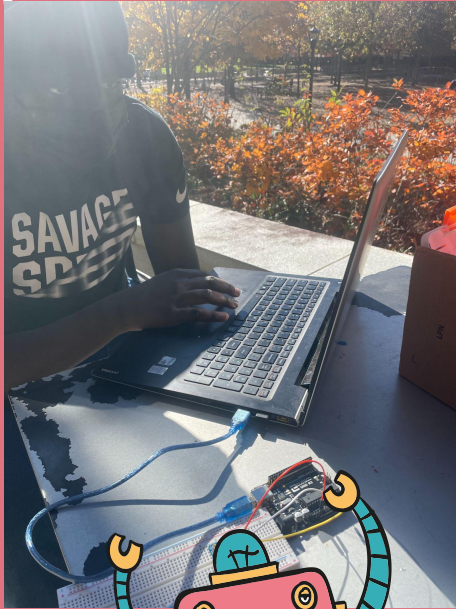


# Sunbot Prototyping Presentation

Matt, Ben, Vaishu, Nakai





# UV Sensing

We realized, it's not that easy.

Calculations with nanowaves, voltage, and location conditions determine UV, BUT

# UV Sensing

7:09AM 5:35PM

CHANCE OF RAIN 10%	HUMIDITY 42%
WIND WNW 12 mph	FEELS LIKE 50°
PRECIPITATION 0 in	PRESSURE 30.04 inHg
VISIBILITY 10 mi	UV INDEX 3

Weather for Georgia Institute of Technology.  
[Open in Maps](#)

The Weather Channel

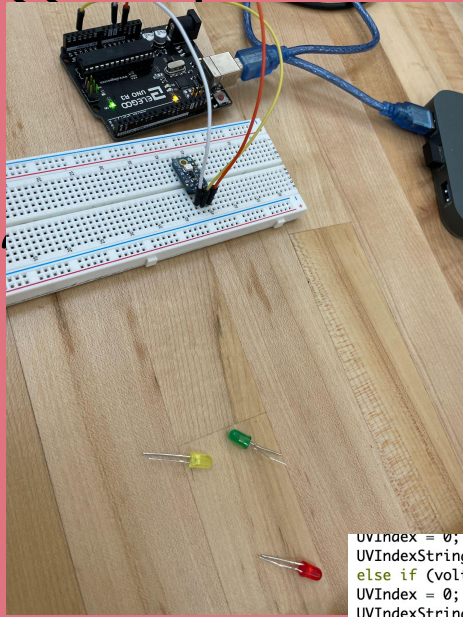
```
/dev/cu.usbmode.m14401
13:59:29.722 -> sensor voltage = 0.91 V
13:59:29.756 -> UV Index = 9.06
13:59:30.695 -> sensor reading = 242.00
13:59:30.728 -> sensor voltage = 0.78 V
13:59:30.766 -> UV Index = 7.80
13:59:31.709 -> sensor reading = 241.00
13:59:31.744 -> sensor voltage = 0.78 V
13:59:31.744 -> UV Index = 7.77
13:59:32.709 -> sensor reading = 240.00
13:59:32.744 -> sensor voltage = 0.77 V
13:59:32.744 -> UV Index = 7.73
13:59:33.705 -> sensor reading = 280.00
13:59:33.739 -> sensor voltage = 0.90 V
13:59:33.772 -> UV Index = 9.02

[ ] Autocroll [x] Show timestamp
Newline [x] 96

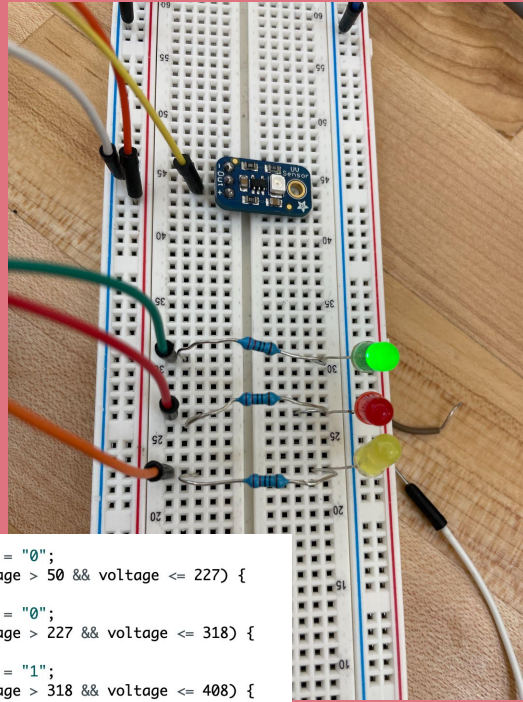
Serial.print(sensorVoltage);
Serial.println(" V");
Serial.print("UV Index = ");
Serial.print(sensorVoltage / .1);
Serial.println("");
delay(1000);

Memory:
  uses 3728 bytes (11%) of program storage space. Maximum is 32256 bytes
  variables use 258 bytes (12%) of dynamic memory, leaving 1790 bytes
```





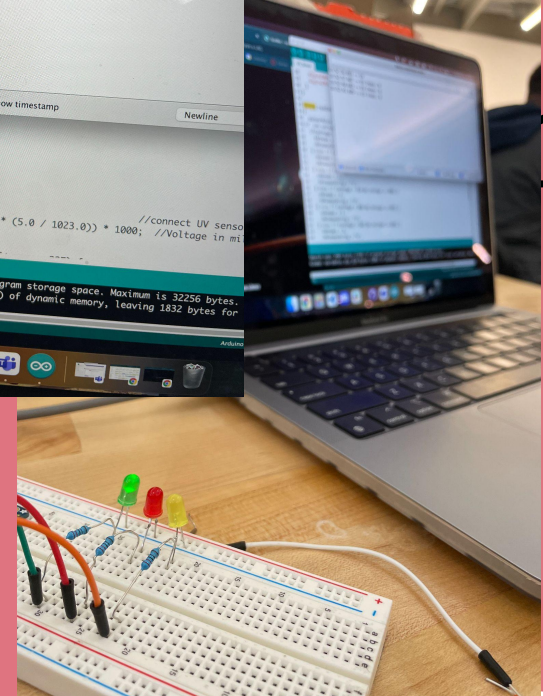
```
UVIndex = 0;
UVIndexString = "0";
else if (voltage > 50 && voltage <= 227) {
  UVIndex = 0;
  UVIndexString = "0";
}
else if (voltage > 227 && voltage <= 318) {
  UVIndex = 1;
  UVIndexString = "1";
}
else if (voltage > 318 && voltage <= 408) {
  UVIndex = 2;
  UVIndexString = "2";
}
else if (voltage > 408 && voltage <= 503) {
  UVIndex = 3;
  UVIndexString = "3";
}
else if (voltage > 503 && voltage <= 606) {
  UVIndex = 4;
  UVIndexString = "4";
}
else if (voltage > 606 && voltage <= 696) {
  UVIndex = 5;
  UVIndexString = "5";
}
```



```
UV_Sensor
1 float voltage;
2 float sensorValue;
3 String UV = "0";
4
5 void setup() {
6   Serial.begin(9600);
7 }
8
9
10 void loop() {
11   UV = readSensor();
12   int stringLength = UV.length();
13   Serial.print(UV);
14   Serial.print(" ");
15   delay(3000);
16 }
17
18
19
20 String readSensor() {
21   String UVIndex = "0";
22   int sensorValue = 0;
23   sensorValue = analogRead(A3);
24   int voltage = (sensorValue * (5.0 / 1023.0)) * 1000; //connect UV sensor
25   if (voltage < 50) {
26     UVIndex = "0";
27   }
28 }
```

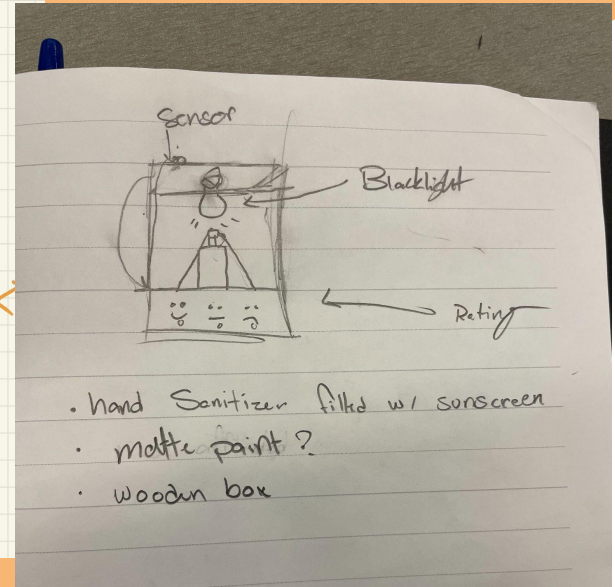
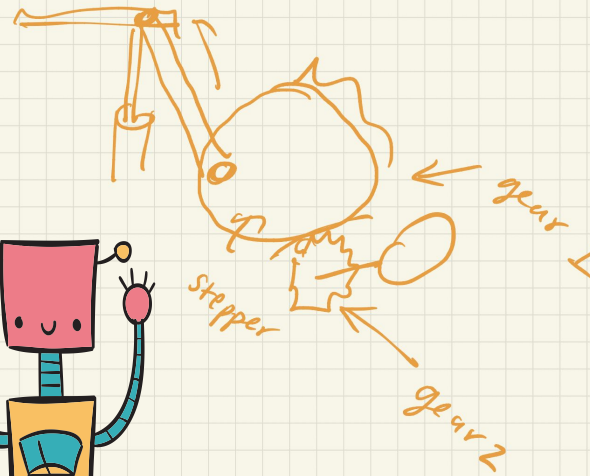
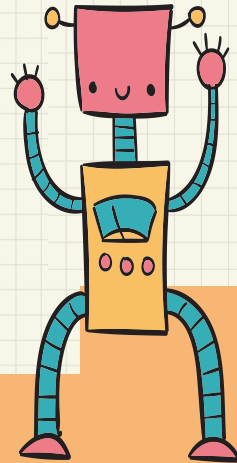
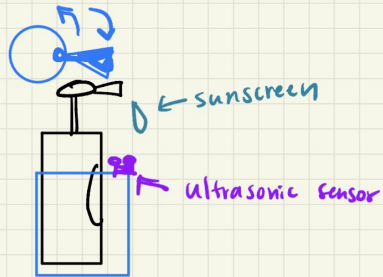
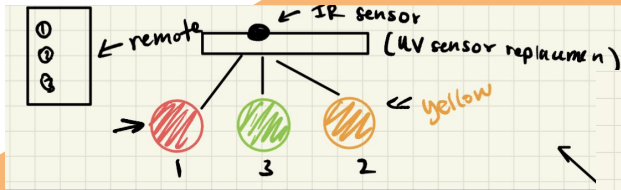
16:36:31.836 -> UV Index: 1  
 16:36:34.825 -> UV Index: 1  
 16:36:37.833 -> UV Index: 1  
 16:36:40.866 -> UV Index: 1  
 16:36:43.853 -> UV Index: 1  
 16:36:46.863 -> UV Index: 1  
 16:36:49.856 -> UV Index: 1

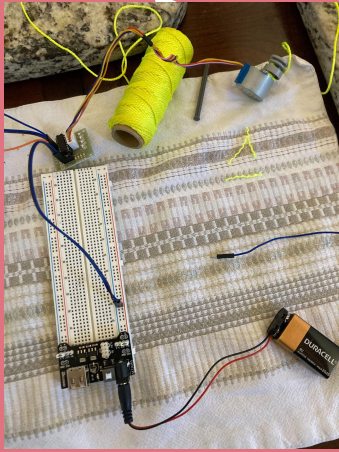
Sketch uses 3418 bytes (10%) of program storage space. Maximum is 32256 bytes.  
 Global variables use 216 bytes (10%) of dynamic memory, leaving 1832 bytes for





# Initial motor sketches





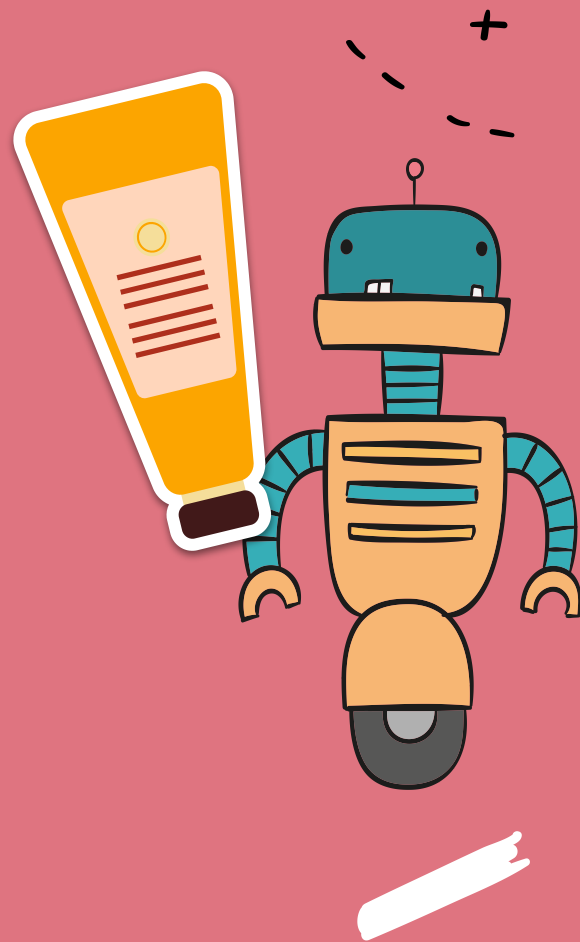
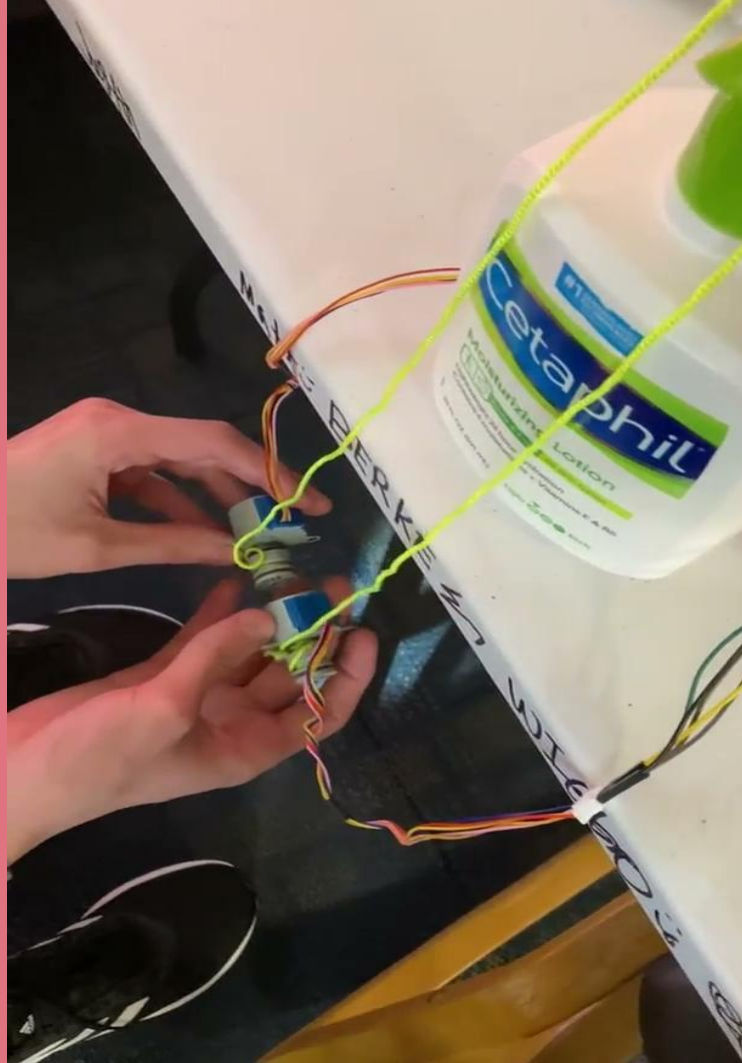
# Motor Problems

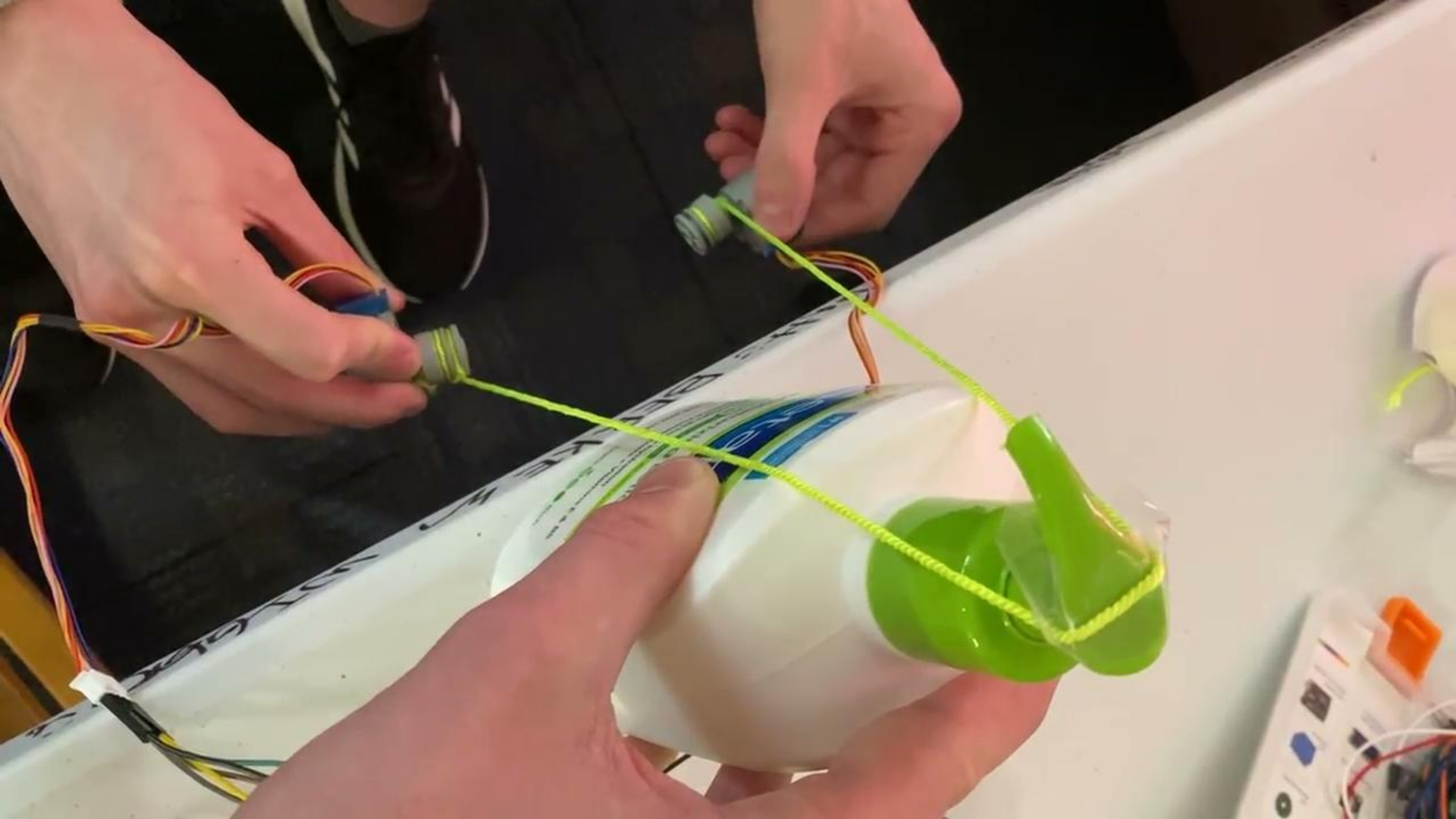
Spring/ Push down bottles are ALSO harder than it seems.

Our pulley systems with motors are not strong enough to pump the bottle

Solution: water pump?



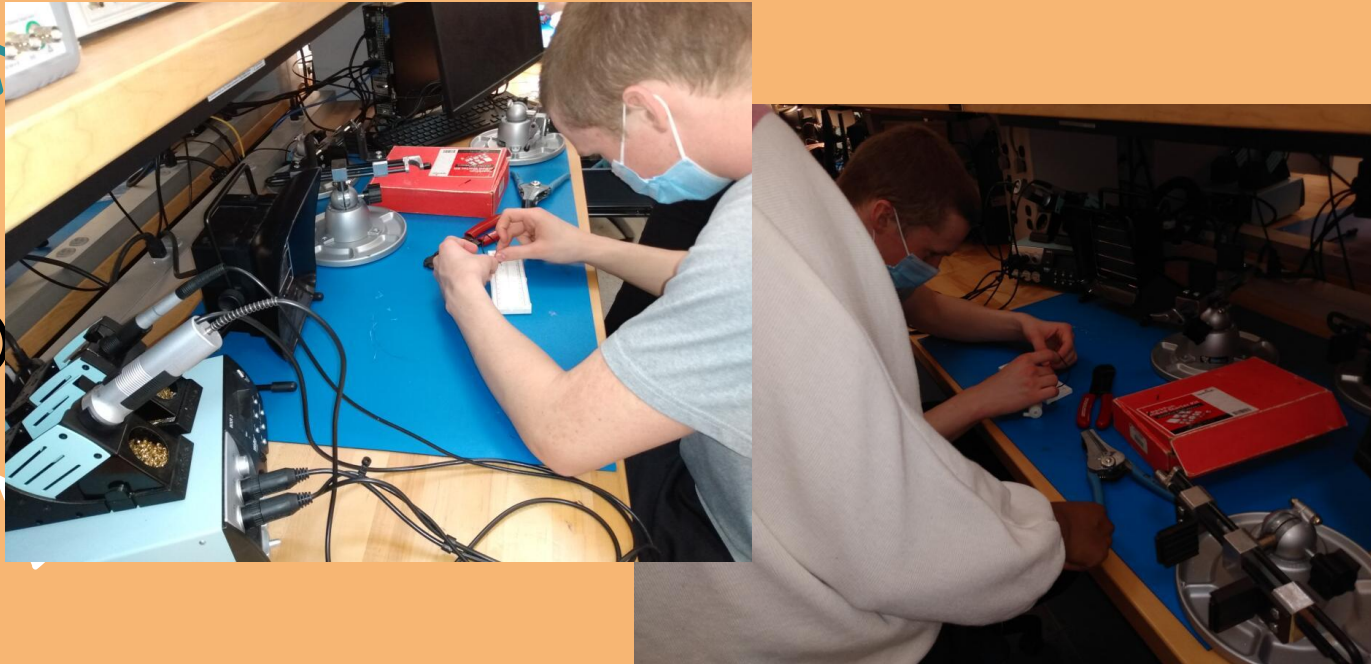






# THANK YOU CLARA

Soldering the water pump- we have two models of pumps, but we are initially starting with Clara's mini water pump



# What we still need to do

- Build the UV index LED 'face' instead of LEDs
- See if motor pump works
- Test sunscreen dispensing
- Using ultrasonic sensor

