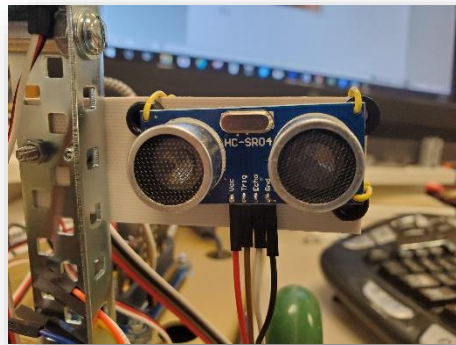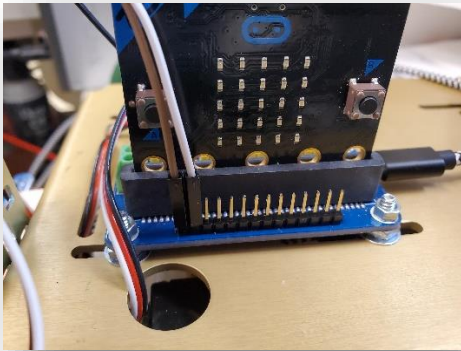**Notes from 2/24 Robot Sensor Training**

Robotics Sensor training:

1. The ultrasonic Sensor is basically a radar. It sends out a signal through "trigger" and receives and signal through "echo".
2. For testing purposes, connect trigger to P0 and connect echo to P1. Ground can go to any black row pin and VCC (+5v) must go to any RED ROW pin.
3. The ultrasonic must connect to the outside row of pins on the servo driver board. From my research, the servo driver board works as an output device for servos but has not worked as a receiver device.

See picture

4. In order to program the ultrasonic you will need to add the "SONAR" extension package
   a. Click "Advanced"
   b. Click "Add Package"
   c. Type the word "Sonar" in the search bar
   d. Click on the "Sonar" link

Notes from 2/24 Robot Sensor Training

Things that students should be trying to accomplish:

1. Students should first look to slow down the servos.
2. Students should create a series of code that attempts to recognize and object at a given distance, Pause for the micro:bit to process the information, then cause servos to move in the direction that is proper.
3. **Keep the following things in mind:**
   a. When servos are set to "90" they should be centered. Remember that these servos have a centering screw to allow the servos to be centered with a small screwdriver.
   b. Because the two main wheels are on servos and pointed in opposite directions, they will need directions completely opposite to go straight. So servo one would be set to 180 and servo 2 to 0 to go in one direction. To go on the opposite direction, you would need servo 1 to "0" and servo 2 to 180.
   c. Keep in mind that for this "autonomous" segment, you will not need remote control. You will need one microbit and one servo driver board.
   d. Pins are needed on the side of the Servo driver board so that the ultrasonic can be connected properly.
   e. teachers can send me their servo driver boards in the pony or drop them off. I will need about a 2-day turnaround to get these done and ready for pickup!

- This is the chapter of activity to share with students and let them read and explore.
  https://www.waveshare.com/wiki/Chapter_10_of_KitiBot-Microbit

- Paste this link in the extension link to get the correct ultrasonic package.
  https://github.com/waveshare/pxt-KitiBot