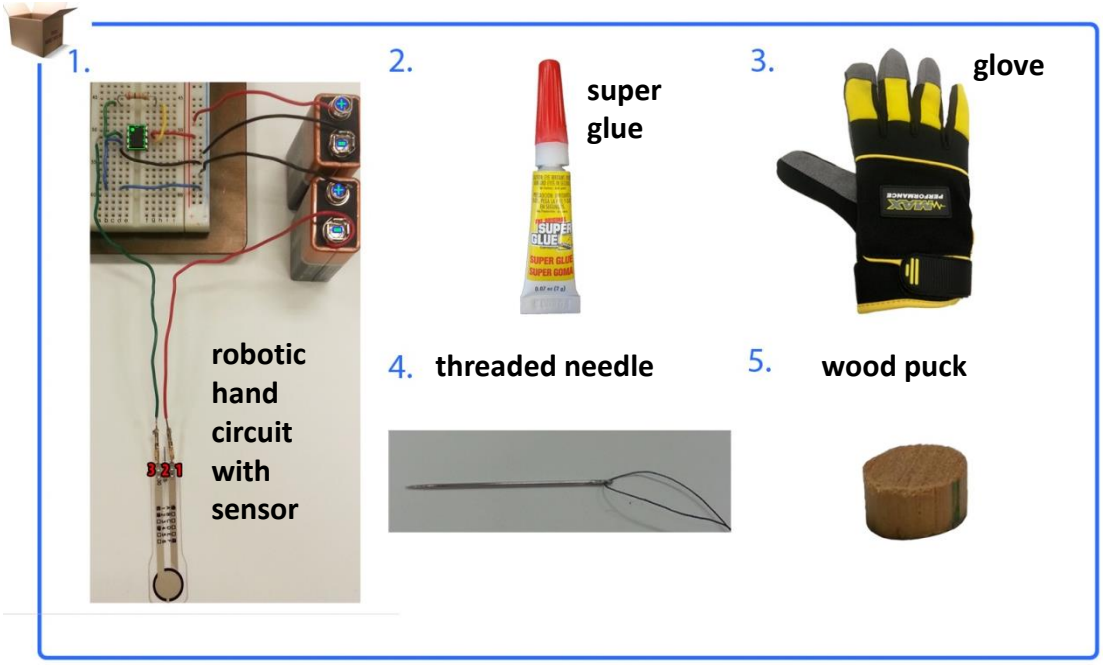
Names: _____ Date: _____ Class: _____

Designing and Building a Robotic Hand Using the Force Sensor Circuit GUIDANCE & TIPS

Use this instruction manual to help you design and build a robotic hand. Incorporate the force sensor into the inside of a glove finger. The sensor remains connected to the electric circuit as force is applied to an object. Make sure you have the following items:



NOTE: Record the minimum force required to crack an egg on the *Building an Electric Circuit Evaluation Sheet.*

1. **FlexiForce Sensor**
   A. Disconnect ONLY the FlexiForce sensor from the robotic hand circuit.
   B. You may want to replace some sensor wires with longer ones.
   C. The sensor will be used inside the glove!!

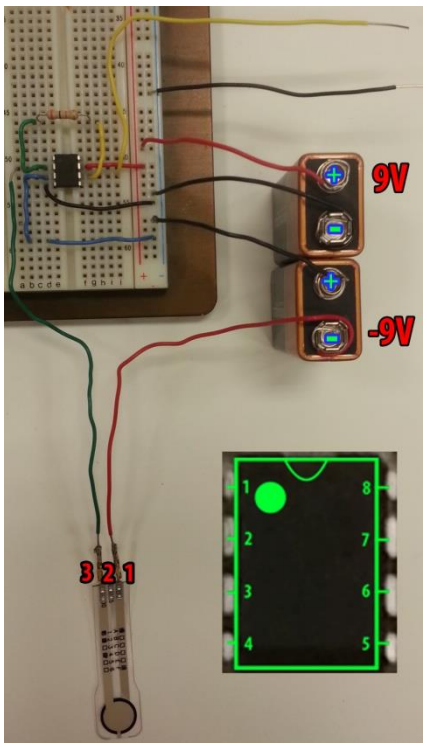


Figure 1

2. Glove Stitching Removal

A. Turn glove inside out.

B. Choose any glove finger and remove the stitching from the upper half.

Figure 2A

Figure 2B

3. Sensor

A. Turn glove inside out.

B. Place the FlexiForce sensor inside the chosen glove finger.

Tip: The sensor sensing area should be facing DOWN.

C. Secure the sensor inside by sewing around it from side to side.

Tip: Make sure not to pierce the sensor!

Figure 3A

Figure 3B

4. Puck

A. Glue the puck to the sensor sensing area.

The puck is between the sensing area and the glove surface.

B. Sew the glove finger back to its original state.

Figure 4A

Figure 4B

5. Glove Testing

A. Connect the glove to the robotic hand circuit.

B. Connect the multimeter, if it is not already connected.

C. Add pressure to an object (the egg).

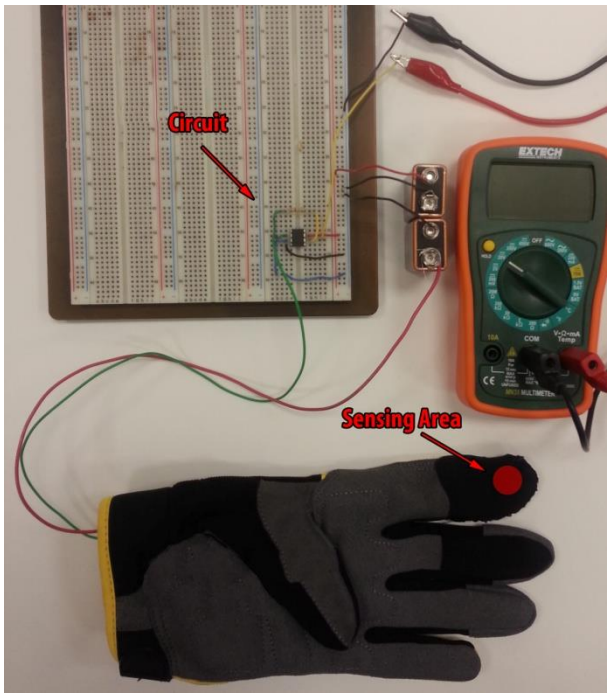


Figure 5A

Figure 5B