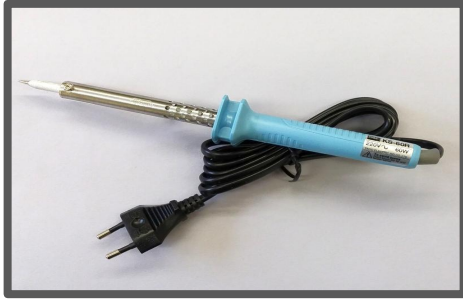


Soldering 101

Tools and materials needed

Soldering Iron:



Solder:



**Soldering tip
cleaner:**



**Desoldering
pump:**



Tools and materials needed

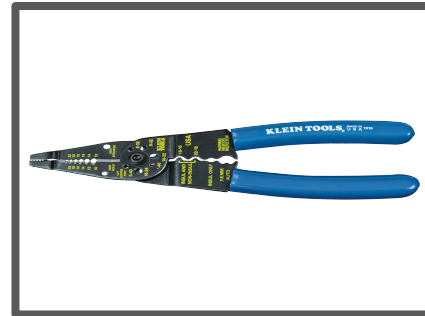
**Soldering
helping hands:**



**Magnifying
glass:**



**Wire cutters
and strippers:**



**Soldering
wick:**



Safety tools and materials(Very important!!!)

**Fume
Extractor:**



**Safety
Glasses:**



**Soldering
mat:**



**Gloves
(optional):**



Setup and Preparation

SAFETY GLASSES MUST BE WORN AT ALL TIMES WHEN WORKING!

1. Make sure the water bottles have water
2. Soak the sponge
3. Gather all materials such as components needed for the soldering process before you actually start.
4. Turn on and place the ventilation fan close to workspace
5. Turn on the soldering iron

Note:

Keep the workspace organized and clean so that you are not scrambling mid-solder

Creating an Excellent Solder Joint

Please refer to Adafruit's instruction Pages 2-4:

<https://learn.adafruit.com/adafruit-guide-excellent-soldering/preparation>

Desoldering (1 of 5)

1. **Have your desoldering pump ready**
2. **Apply Flux (Optional)**

- a. applying a small amount of flux to the solder joint can help improve heat transfer and make the solder flow more easily, which can be especially helpful on older or oxidized joints.

3. **Heat the Solder Joint**

- a. Place the tip of the soldering iron on the solder joint you want to remove. Be gentle, and apply enough pressure to transfer heat efficiently.
- b. Allow the solder to melt fully; this may take a few seconds depending on the solder thickness and the iron's temperature.



Desoldering (2 of 5)

4. Remove the Solder

- a. Using a Desoldering Pump:
- b. As soon as the solder melts, quickly bring the pump close to the joint.
- c. Press the pump button to release suction, drawing the melted solder up into the pump. Repeat if any solder remains.

5. Remove the Component

- a. Once all the solder has been removed, carefully lift the component off the board with tweezers.
- b. If it's still attached, inspect and remove any remaining solder or gently apply the iron again to free it.

Desoldering (3 of 5)

6. Clean the Area

- a. After the component is removed, clean the area with isopropyl alcohol to remove any remaining flux residue or solder splashes.
- b. Inspect the board to ensure no traces of solder are left on the pads.

7. Check for Damage

- c. Look over the desoldered area to ensure that no pads or traces lifted. If any did, they may need to be repaired before you proceed.

Desoldering (4 Of 5)

Using wick to desolder



8. Place the Wick Over the Solder Joint:

- a. Position the desoldering wick directly on top of the solder you want to remove. Ensure that the wick is flat against the joint for maximum contact.

9. Heat the Wick with the Soldering Iron:

- b. Press the tip of the soldering iron onto the wick, directly over the solder joint. The heat will transfer through the wick, melting the solder.
- c. The wick will start to absorb the solder. You'll see the solder wicking up into the braid.

Desoldering (5 of 5)

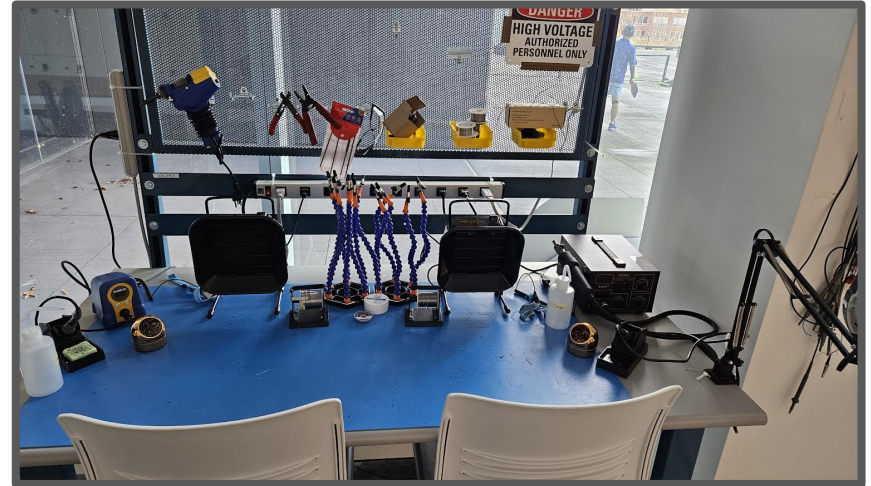
10. Remove the Wick and Inspect:

- a. Once the solder is absorbed, lift both the iron and wick away. Be careful, as the wick will be hot.
- b. Trim off the used section of the wick before moving on to the next joint to ensure the braid can continue to absorb efficiently.

What You Should Do After Soldering

CLEAN UP AFTER YOURSELVES

The station should look like this when you are finished.



Need Help? Anything Missing?

Our contact Information

Jack Russo: jackrusso@uri.edu

Ismail Muhammad: ismail_muhammad@uri.edu

Barry Huang: barry_huang1213@uri.edu