

**Wednesday 9/22/21 - 10:07am-10:44am; 6:00pm-7:00pm**

This day was entirely dedicated to Yuliana and Disha choosing their learning module, finishing up the last one, and learning the very basics of what they were going to do. This included watching safety videos, looking over the soldering kit and booklet, and not much else before they had to go. The girls decided they would read the soldering kit's packet at home to maximize their time working next class.

**Thursday 9/23/21 - 10:07am-10:44am**

This day was used for soldering practice. This included doing the trial section of the soldering kit, making bridges and undoing them, and cutting wires to use later on. Most of what was learned was about how to properly provide solder to a circuit, how to heat up the metal, and what a good bead looked like.

**Friday 9/24/21 - 10:07am-10:44am**

Using the wires they had cut during the previous class, the girls went on to solder all of the wires. This was difficult at first, because the wires would move or not be able to penetrate the molten solder, as it would harden too quickly. Learning to keep things in place and then working around them was important.

**Monday 9/27/21 - 9:12am-9:54am**

On this day, the girls continued doing the soldering practice, but also tried to solder on the first few resistors. They struggled with heating up the metal at first, but soon got into a groove and managed to put on two wires and learn how to do that over and over. There was confusion with the resistors -- the girls did not know how to properly put them in the right spots and asked for some help. After getting it, they soldered their first resistor.

**Tuesday 9/28/21 - 9:12am - 9:54am**

This time around, Disha and Yuliana took turns soldering on resistors, and managed to get all but two done. There were some issues with getting the metal hot enough -- so much that they actually couldn't desolder a mistake they had made when they mixed up the labeling on the resistors. It turned out that the iron was unplugged. They sighed and agreed to try again the next day.

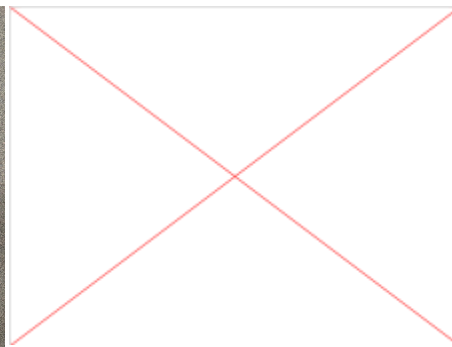
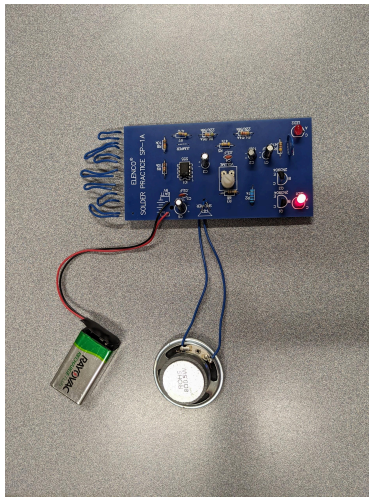
**Wednesday 9/29/21 - 9:12am - 9:54am**

This day marked a lot of work done for the girls. Not only did they finish up their resistors, they also went on to put in all the other components. This went really well, and the girls were finished with the soldering kit in one session -- a school record, for sure. The only thing left was just to plug in the battery to see if everything ran, and they plan to do this on the day they can spend on finishing up their final report.

**Thursday 9/30/21 - 9:12am - 9:54am**

Yuliana and Disha plugged in the battery onto their soldering board and successfully got their LEDs to light up. However, the speaker did not make any sound. The girls could not figure out why that was, so they called over Mr. Detrick who told them they were missing a jumper wire. So Yuliana and Disha went and soldered on the missing jumper wire and got the speaker to work. This was the final thing they did with their soldering kit before moving on to finish their final report.

**Project Gallery:  
bink bonk!**



Double click the black box  
to watch video.

## **Final Write-Up - Learning Module 3**

### **Group Members' Names:**

Disha P. and Yuliana P.

### **Topics Covered:**

Soldering, Soldering safety, Applications of soldering.

### **What was Learned:**

Yuliana and Disha came into the learning module with no soldering experience. They learned a lot along the way, especially when it came to safety and working together. The experience put a big emphasis on pair work, as they would check over what the other did and make suggestions to be safer and neater (especially when it came to wearing goggles!).

From beginning to end, the girls accomplished their goals with what they came in to learn -- they figured out how to solder, properly clean off the soldering pen, unclog the desoldering pen, and safely dispose of materials like wire scraps, foam, and metals.

### **Problems Encountered:**

There were quite a few problems the girls ran into with soldering. For one, it was hard to get the hang of. Sometimes holding the iron to the metal and not moving it would prevent it from melting, and other times the pen wasn't even plugged in, which meant the iron wasn't getting enough heat and the solder wasn't melting whether they were trying to solder or desolder.

### **Suggestions:**

Yuliana and Disha suggest that you make sure the soldering iron is plugged in! Also, when trying to heat up the solder when attempting to desolder, try to move the soldering iron around on the solder, it might help it melt faster. Make sure the iron is warm enough because if it's not then the solder won't melt. When desoldering, you have to be quick about it because as soon as you take the iron off the solder gets cold very fast.

### **Experience Summary:**

Yuliana and Disha overall had a fun and productive experience learning how to solder. From safety to finishing their soldering kit, the girls worked through the project until the end successfully. Yuliana and Disha have gotten the hang of soldering now and are confident that they will be able to use the soldering knowledge they acquired in future projects.

### **RESOURCES:**

The soldering kit we were given, Mr. Detrick's website (for access to materials on soldering safety), and YouTube for soldering safety videos and tips on how to solder.