Caring Adult Network

Active Learning Workshop: Digital Youth Divas e-Cards

Materials Needed

Every person making a card needs:

- Construction paper (for the card but also if you wish to cut out shapes)
- Slot battery holder
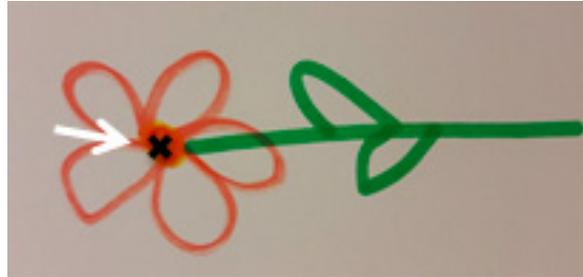- LED light
- Copper tape
- 3V coin cell battery

On your table:

- Sample eCard
- Sample Diva Card Circuit handout
- zSeries Circuit in a Flash handout
- Troubleshooting Guide: "Is yours not working?"
- Markers and colored pencils
- Tape
- Scissors
- Round needle nose pliers
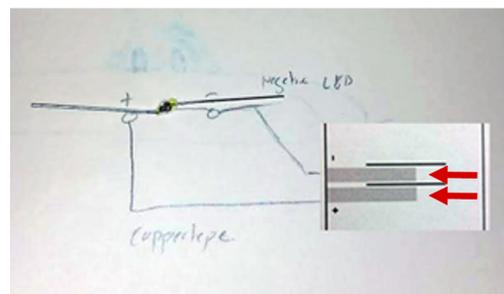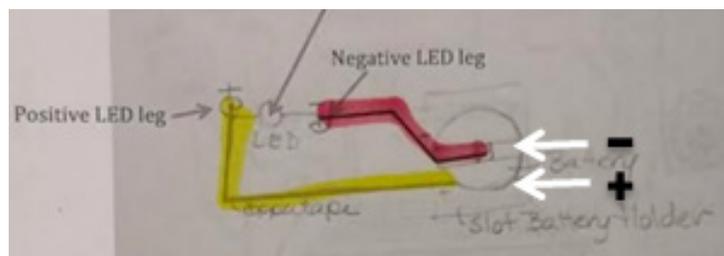- Toothpick

Tutorial: Making the Digital Youth Divas e-Card

Designing the e-card	
1. Design an image on the outside of the card, keeping in mind where you want to place your LED light.	
2. Using the Sample Diva Card Circuit handout as a reference, draw a circuit map on the inside of the e-card. **IMPORTANT:** Make sure two paths (the positive path and the negative path) will align with the positive and negative path on the battery holder. **The two paths will connect to the battery holder on the same edge.**	

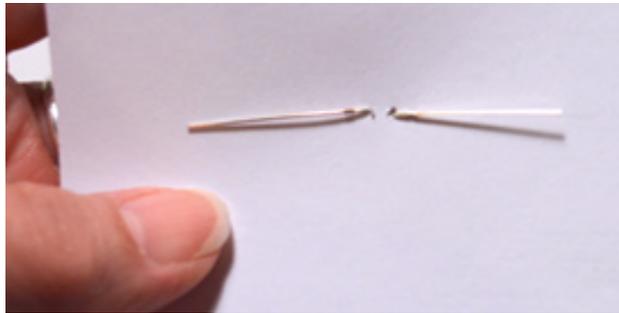| Placing the LED	
3. After you draw your circuit map, create a tiny hole using the toothpick where you will place your LED.	

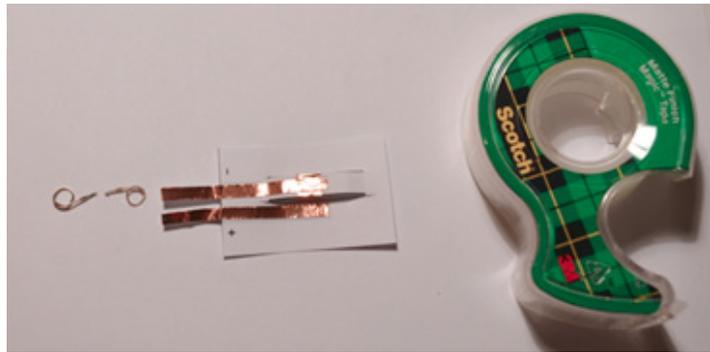|	
4. Insert the LED legs. Double check that the legs are in the correct polarity direction to match your circuit drawing. • The longer leg is (+) positive. • Inside the LED globe, the thicker metal piece is (-) negative.	
5. Pull the LED all the way through the card so the bottom of the LED is flush with the card.	
6. Curling the LED legs: • Bend the legs flat in the opposite directions (A). • Using the round needle nose pliers, curl the LED legs (B).	

Placing the battery holder	
7. Cut a small piece of copper tape. Wrap the copper tape fully around the the cutout strip.	
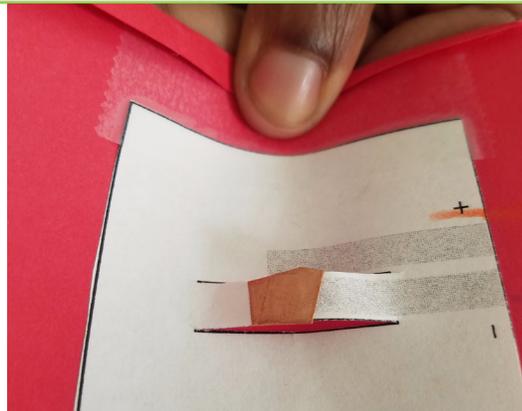
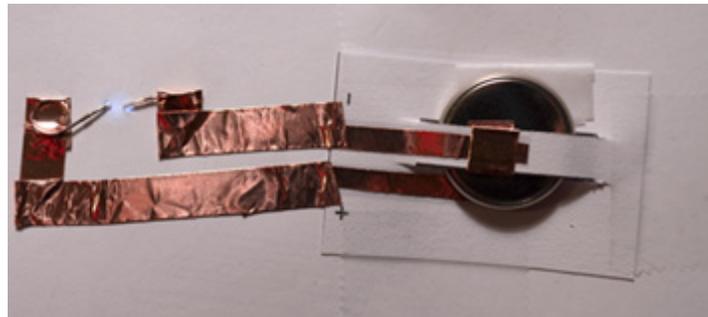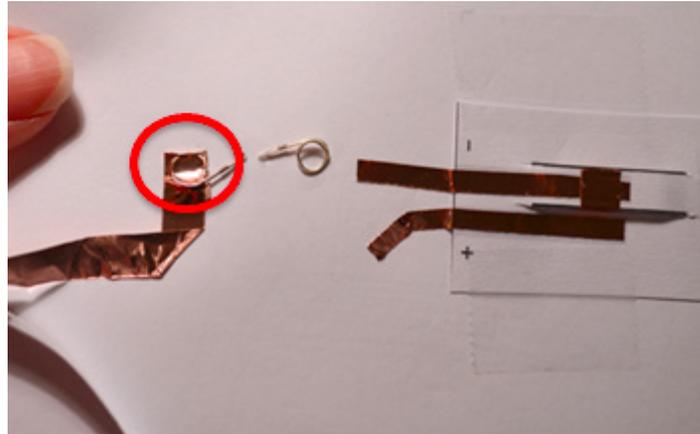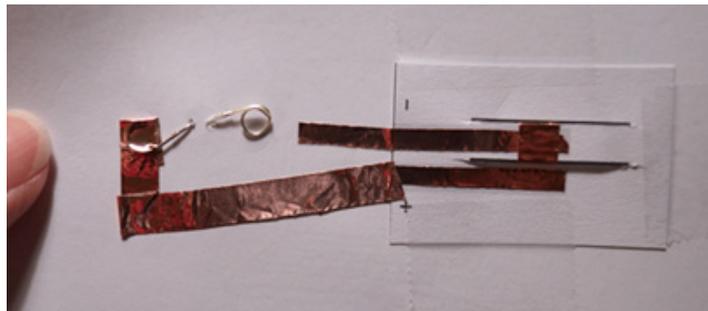|	
8. Cut one piece of copper tape, about an inch long. Attach it to the gray area on the cutout strip of the battery holder, closest to the negative (-) sign.	
9. Cut another inch-long piece of copper tape and attach it to the positive (+) grey area.	*Tip – do not peel all of the paper off of the copper tape until you are ready to stick it to the card*
10. Tape the holder onto the card with double-sided tape. Attach it so the negative and positive paths on card line up. **IMPORTANT** - To make sure the battery can fit into the holder, tape the battery holder down **with the battery in it.**	
11. Lay the copper tape over the positive (+) copper battery path to form a solid connection. This photo shows the completed positive (+) path from the LED leg to the battery holder.	
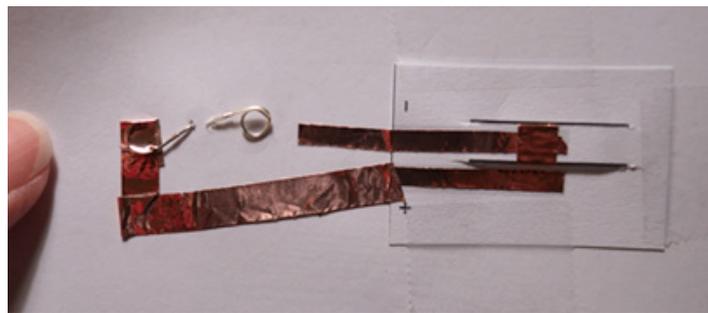
| Connecting the LED to the battery holder	
12. Cut a piece of copper tape that will be long enough to reach from the positive (+) LED leg to the positive copper tape connection to the battery holder. (Note: if the piece is not long enough, you can always add more copper tape to the path.) Wrap the copper tape around the positive (+) LED leg curl.	
13. Connect the copper tape from the positive (+) LED leg to the positive (+) side of the battery holder.	
14. Repeat steps 12 and 13 for the negative (-) side.	
Your completed path from the LED to the battery holder should look like this:	
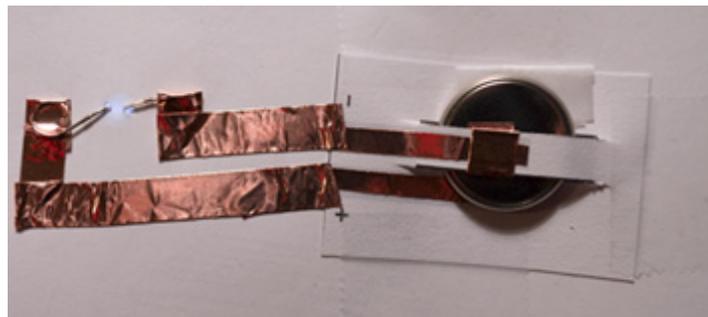
Light it up!
Congratulations on completing your first e-card! Is yours not working? See the Troubleshooting guide	

Activity Discussion Questions

- Did anything surprise you about doing this activity?

- How did you feel when your card finally lit up?

- What parts of the activity were the most fun / most challenging?

- How did you work through challenges? (people, resources, prior knowledge)

- Do you see any connections between this activity and learning opportunities in your learning environment(s)?