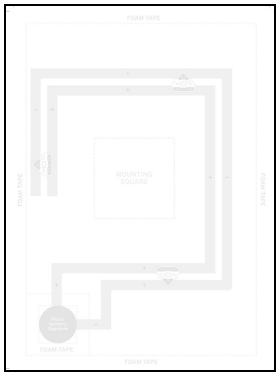
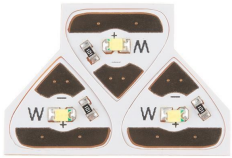
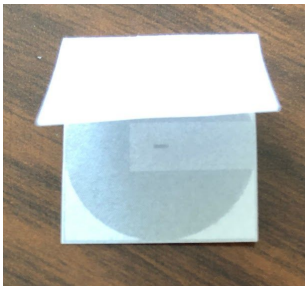
RED HAT CO.LAB: 3 LED PAPER CIRCUIT CARD

EQUIPMENT LIST

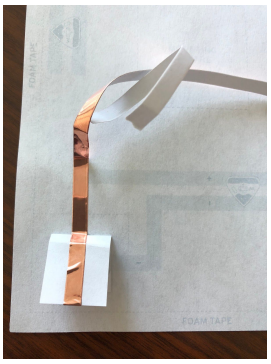
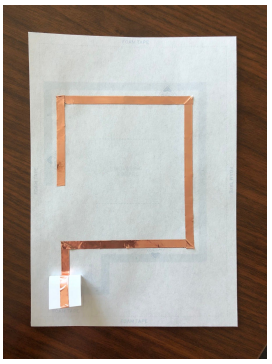
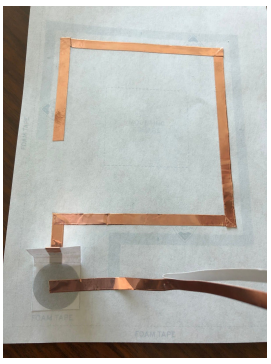
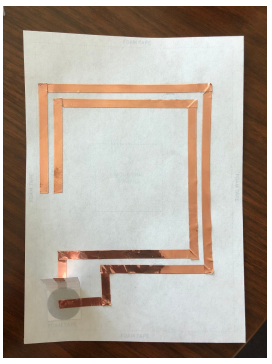
The following items are included with your kit and are referenced in the instructions below. You will also need a pair of scissors (these are included with your kit).

Printed materials: card base 	Printed materials: card overlay sheet 	Printed materials: battery flap 
Foam mounting tape (qty: 31”) 	Foam mounting square 	Glue dot 
LEDs (qty: 3) 	Coin cell battery 	Copper tape (qty: 35”) 

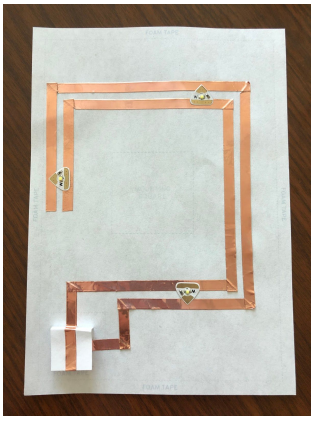
PREPARE THE BATTERY FLAP

1. Please review the diagram, specifically where the circuits are drawn. The LEDs face a specific direction and will need to be applied correctly in order for the lights to work. 2. Fold the battery flap along the gray lines. The battery image should be on the inside of the flap.	 

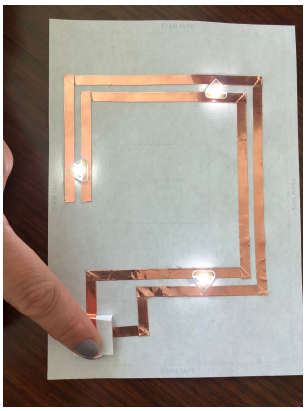
CREATE THE CIRCUIT PATH

1. Using the glue dot, adhere the battery flap to the card base where indicated. 2. Take the strip of copper tape and adhere the end to the underside of the battery flap, follow the illustration to adhere the positive lead along the positive lead line. *Make sure the copper tape starts under the flap, so it will touch the top of the coin cell battery, and wraps around the top of the flap to follow the positive lead line. Cut the copper tape at the end of the positive lead line.	  
3. Using the remainder of the copper tape, start at the battery and follow the negative lead along the negative line. *make sure the positive and negative lead lines do not touch or cross one another. Cut the copper tape at the end of the negative lead line.	 

POSITION THE LEDs

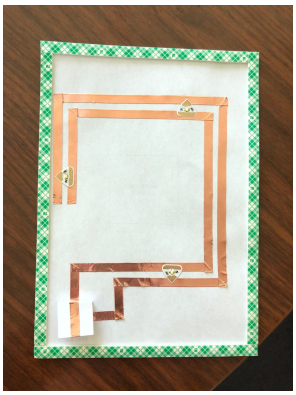
1. Using the illustration, adhere the LED stickers. Ensure that the positive and negative sides of the LEDs are aligned with the positive and negative leads. 2. Applaud yourself. You just built a circuit.	

TEST YOUR CIRCUIT

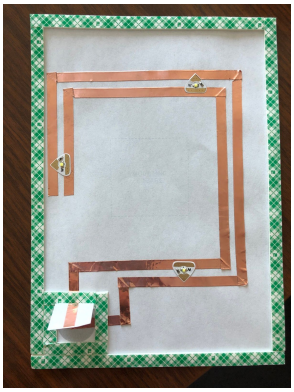
1. Position the negative side of the coin cell battery on the diagram, under the battery flap. 2. Press the flap closed, and watch your LEDs light up. *LEDs not lighting up? Try the troubleshooting steps listed at the end.	

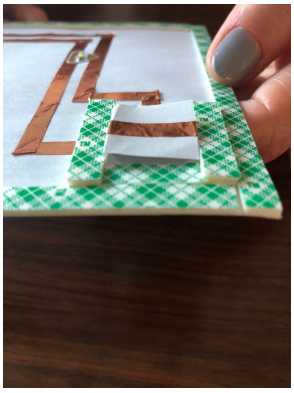
BUILD THE SUPPORT

1. Using the .25” wide mounting tape, follow the illustrations to create a border around the edge of the card base.

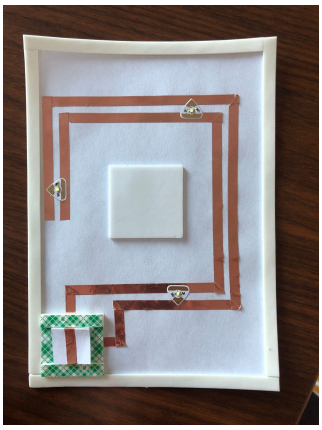


2. Using the remaining .25” wide foam mounting tape, follow the illustrations to make a frame around the battery flap.
    a. Remove the protective film on the top and bottom pieces of the battery flap frame ONLY. Create a second layer of tape on the top and bottom pieces ONLY. You should have two layers stacked on top of each other for the top and bottom only. This extra support ensures that the battery is activated only when you press the button.





3. Place the mounting square following the illustration on the card base.

4. Remove the protective film from the card border and the mounting square. DO NOT remove the protective film from the battery flap frame. This will allow the overlay sheet to adhere, while providing a cushion for your battery.	
5. Insert your battery into the battery frame. Double-check that your battery and LEDs are still working.	
6. Adhere the overlay sheet to the card base and support system you just built. Test again that your LEDs lights up.	

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