

Pop-Up Circuit Cards

Creating a pop-up circuit card is a fun way to learn about circuits and practice design and troubleshooting skills.

Also visit <http://makezine.com/projects/led-pop-up-cards/> where we found this fun idea

Materials List:

(Most of these supplies can be purchased on amazon.com)

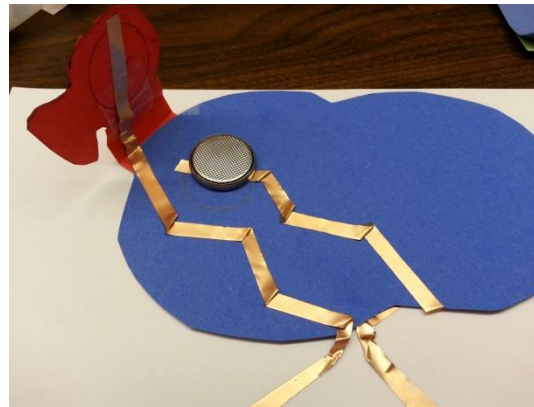
- Card stock paper, variety of colors
- Paper scraps and arts and crafts bits for decorating
- Scissors
- Tape
- Glue sticks
- Pencils
- Markers, colored pencils etc.
- 5mm LEDs



- Cr2032 lithium 3 volt batteries



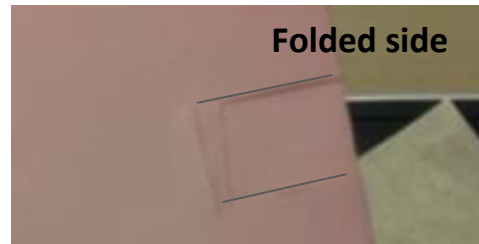
- ¼ inch copper tape



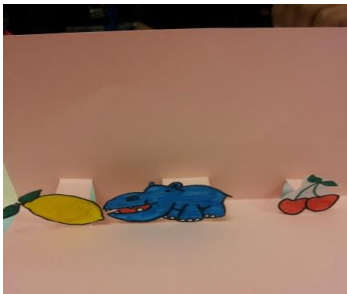
- 1.) Take the piece of card stock that you want on the inside of your card and fold it in half.



- 2.) Cut 2 two-inch parallel lines through the fold for each pop up. Doing this creates the 'pop-up' effect.



- 3.) Draw the designs that you wish to pop up, cut them out and place them on the pop-up pieces using either tape or glue.



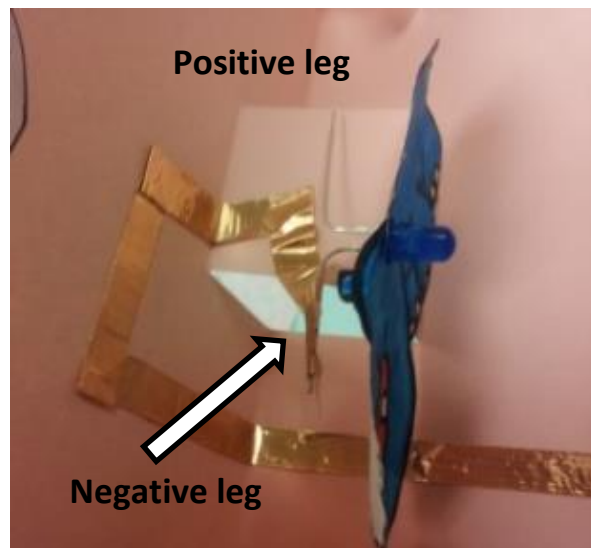
- 4.) Put the LED where you want it to light up your design and separate the LED legs so that so they don't touch and short circuit.



- 5.) Decide where you want your battery and switch and run the copper tape from the negative leg of the LED (the shorter one) to the battery location.



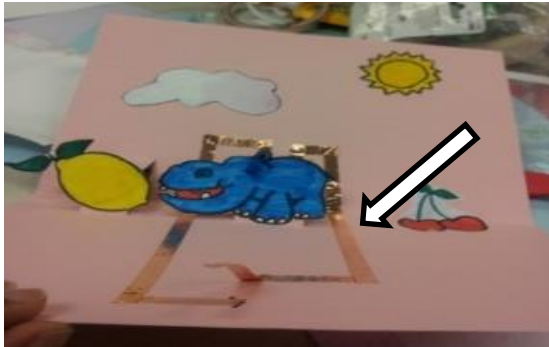
- 6.) Tape the copper tape on the negative end of the LED, making sure it does not touch the positive end.



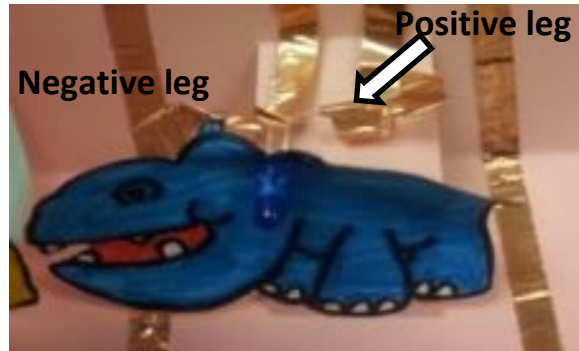
Leave the copper tape a little longer if you are not sure where you want your battery. The circuit works better if the tape is all one piece.

Use the non-sticky side of the tape touching the LED's leg. The sticky side is not as conductive.

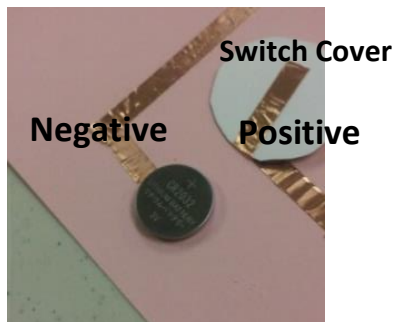
7.) Now run the copper tape from the positive leg of the LED (the longer one) to the battery's location.



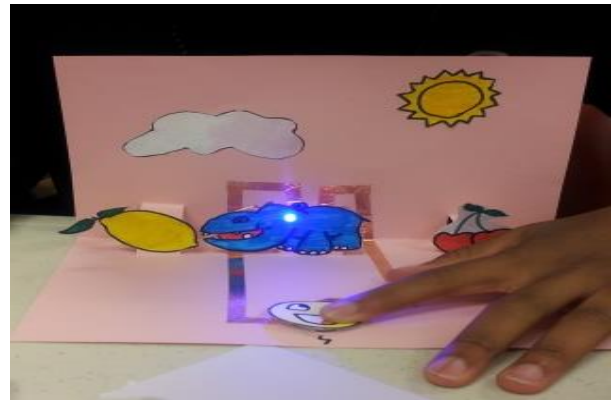
8.) Put the copper tape around the positive end of the LED making sure that it doesn't touch the negative end.



9.) Use your tape to attach the negative run of the copper tape to the negative side of the battery. Remember to have the non-sticky side of the copper touching the battery.



10.) Make sure the copper on the switch lines up to touch the battery when you push on it.



Now design a switch cover, out of paper scraps. Use the sticky side of the tape to attach it to your switch cover that way the non-sticky side will be touching to the battery.

And now you have created a circuit in your pop up card.....congratulations!

Pictured here is circuit diagram for the type of circuit used to create this pop up card.

A circuit diagram is a drawing of a circuit.

Electricians and engineers (and you) can use these symbols to draw the circuit for a design, project or invention.

