



# JL BOCES

## Popsicle Stick Flash Light



**Presenter:** Jana Rogers

### Description of Project

Make your own flashlight using simple items from the Makerspace cart and learn the basics of LED circuitry

### Materials Needed

1. Popsicle Stick
2. LED Light
3. 3v Button Battery
4. Copper Wire
5. Copper Tape
6. Regular tape (Scotch, painting tape, etc)

7. Binder Clip (Medium or small, depending on the size of your popsicle stick)
8. Scissors

## Steps

1. Remove one side of the clip from the binder clip squeezing in the middle of the wire clip near the bracket.



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2. Use 1-2 glue dots to glue the flat part of the binder clip to an end of the popsicle stick. You could also use a hot glue gun if necessary.



3. Cut about 2-3 inches of copper wire and thread it through the empty holes on the binder clip. Wrap it around the back of the popsicle and twist wires together and lay flat against any excess the stick. Cut off wire.



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4. Cut a strip of copper tape the length of the popsicle stick. Remove the backing and stick it to the back of the popsicle stick. It should cover the twisted wire.



5. Flip the stick over and cut another length of copper tape that will be the length of the popsicle stick to the clip. Remove the backing and stick it to the front of the stick, leave about ½ inch unstuck and up.
6. Stick your battery + side (smooth) down on top of the tape. There may be some glue from the glue dot to stick it on as well- that will help hold it in place.
7. Test out your LED by placing one leg on each side of the other end of the popsicle stick. The longer leg (+) should be on the side with the battery. Flip the metal bracket from the binder clip down so it is touching your battery (this is your on/off switch!). If your LED does not light up, try switch the sides with the legs. If it still does not work, try flipping your battery upside down.
8. Once you have your LEDs lighting up, tape them into place with regular scotch tape, or painter's/duct tape.
9. To turn off your flashlight, flip the bracket of the binder clip back up.



## Finished Project

## Tips and Suggestions

1. If your connection is unsteady (flashing, blinking, etc) try taping down the battery and applying tape over the copper wire in the back.
2. Younger students may need help cutting the copper wire.
3. You can also try adding more LEDs for a brighter light!

## Extension Projects

Projects that are related or use the same materials.

1. You can also try a light cube (or night light) found here.  
<http://www.instructables.com/id/LED-Light-Cube/>
2. As an extension of this project, you could add a semi-clear cone and make it into a light saber!
3. Pipe Cleaner Bracelet <http://www.instructables.com/id/LED-Pipe-Cleaner-Bracelet/>
4. Find more at Instructables.com

