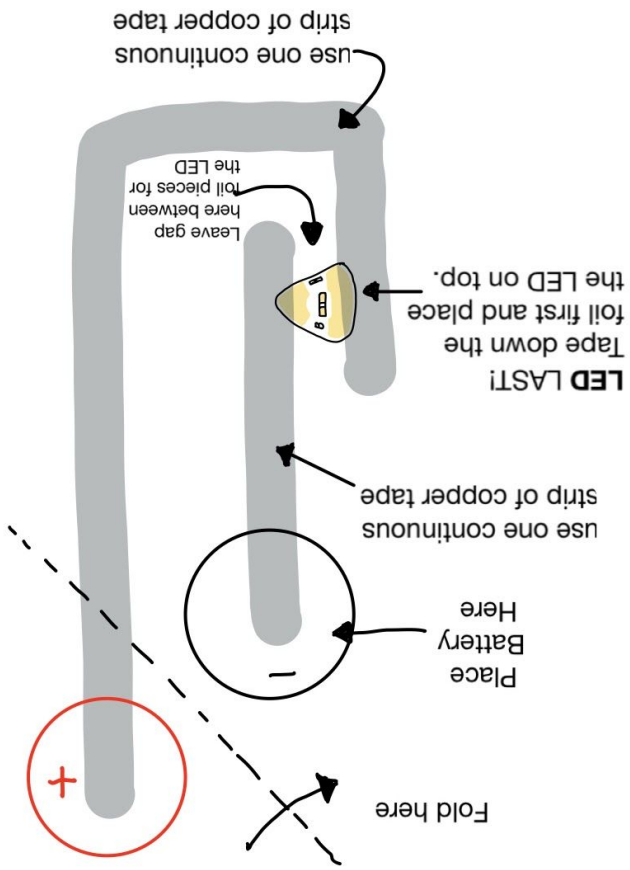
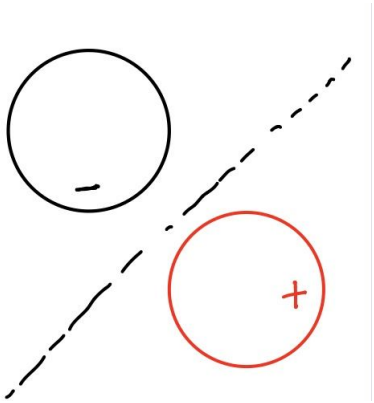
Building a Simple Circuit-Engineering Worksheet

Adapted from Chibitronics.com

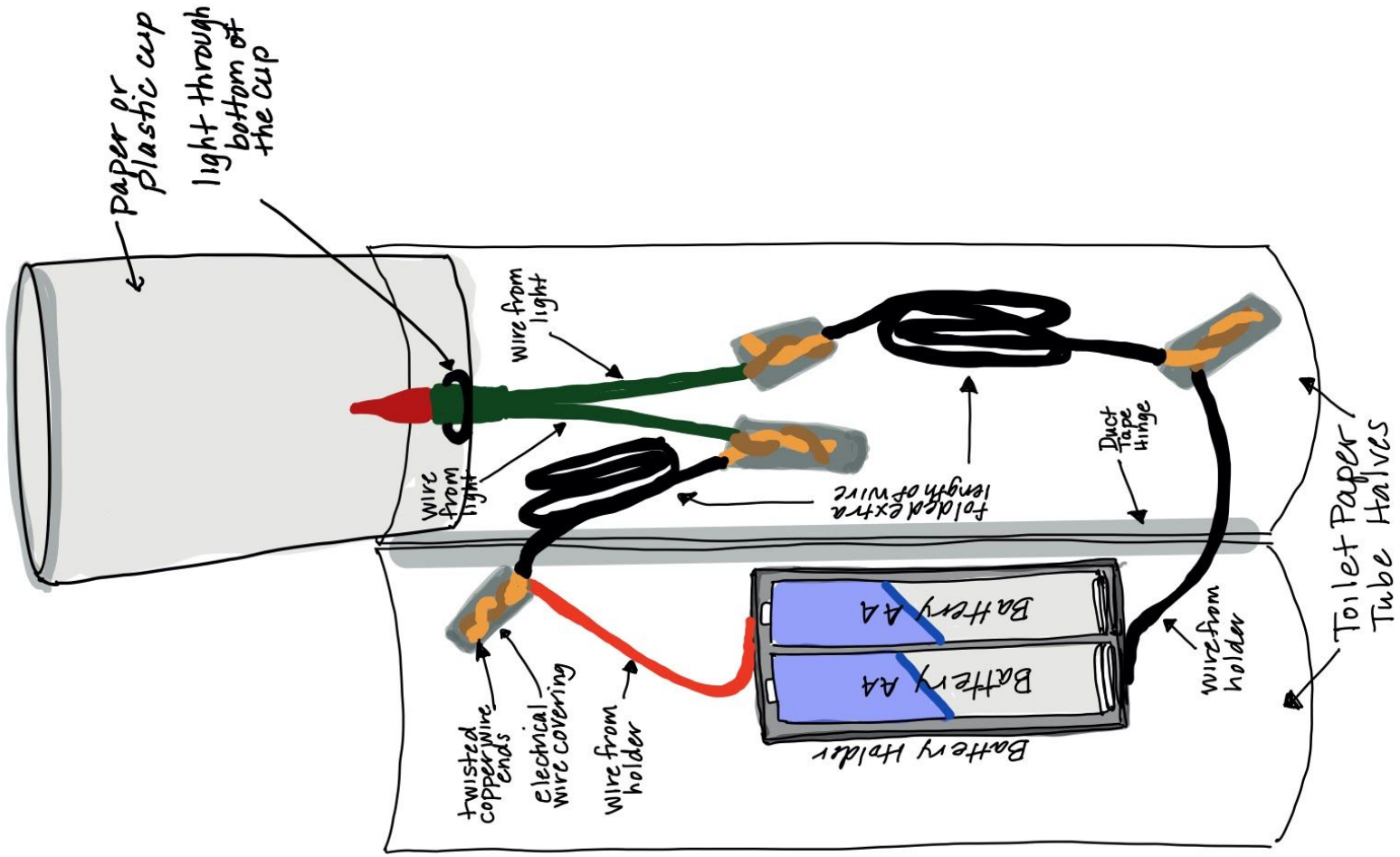
Part A: Simple Circuit Design - Make a circuit to light the LED that WORKS!

Practice Circuit: Use the Template below to build a circuit	**Extension Design: Plan your own complete circuit by varying your design. You can build it below or on a separate page.**



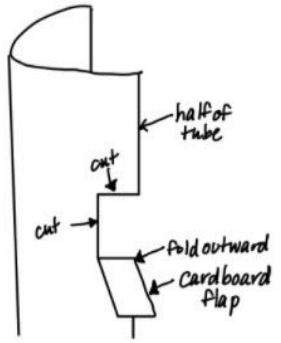


Part B: BUILD: Making a simple circuit flashlight

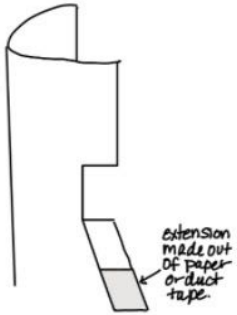


Part C: EXTEND YOUR DESIGN: Making a switch for your flashlight

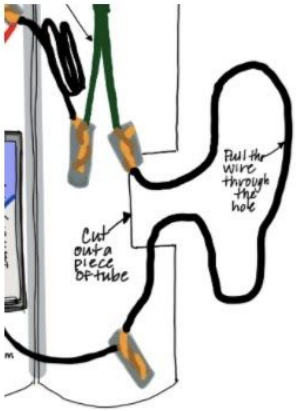
1. Cut a flap into one edge of the tube.



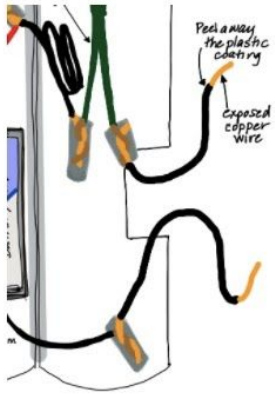
2. Use paper, ducttape, cardboard or a paperclip to create an extension to make the flap TWICE as long. Cover the flap with duct tape.



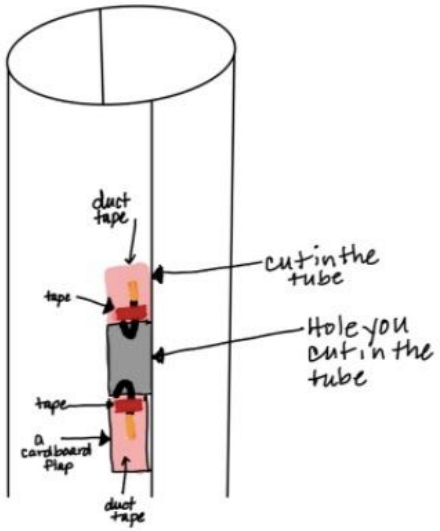
3. Pull wires through the opening.



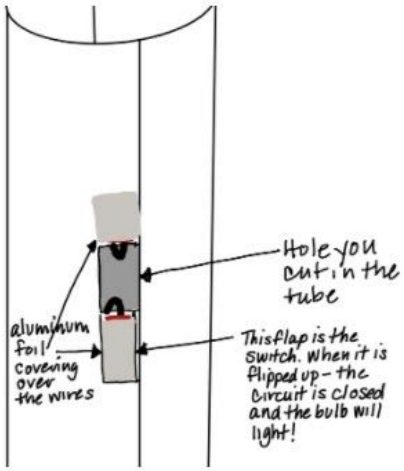
4. Cut the wire and strip the plastic off of the cut ends, being careful not to damage the wire.



5. Tape one wire (on the plastic insulator) to the inside of the flap. Place duct tape on the outside of the tube. Tape the second wire (on the plastic insulator) to the outside of the tube above the opening.



6. Cover the copper wires with pieces of aluminum foil. Foil is a conductor and will help to make a connection between the wires.



7. Open the tube and put your batteries in the battery holder. Close the tube and tape it shut. When the flap on your switch is down so that you can see the opening, you have an open circuit and your flashlight should be OFF. When you flip the flap up so that there is a connection between the foil conductors, it will close the circuit and the flashlight should be ON! Don't forget - Electrical connections are sometimes tricky. If it doesn't light right away, tinker until it does!