Paper Circuits

PLIX

Make a Simple Paper Circuit

Use foil tape and paper to expand your circuit.

Circuit Basics

Anything that uses electricity has a circuit!

In a **complete** motor circuit, electrons flow from the battery, through the motor, and back into the battery. This round-trip flow of electrons—or current—causes the motor to spin.

Build your own simple circuit using an LED (light-emitting diode) and a battery.

When the legs of the LED are in the right places, the circuit is complete, and it lights up!

Control Your Circuit

Make your projects interactive with a **switch**!

A switch is just a gap in your circuit that something else conductive — like a paper clip or another strip of foil — can bridge.

The light turns ON because the circuit is complete. Electrons flow through your circuit.

Electrons can't find a closed circuit. They stop flowing, and the light will turn OFF.

As a switch closes and opens, the LED turns on and off.

Set up a simple switch with this template:

Add More LEDs in Parallel / Series

Light up two or more LEDs! There are two ways to add multiple LEDs to your circuit.

Wire a *parallel* circuit:

Not all color LEDs work together, because they have different voltages. Experiment and see what colors can share the same battery!

Or, wire a *series* circuit.

Chain the the LEDs to each other, long leg to short:

Series circuits require more power: use more batteries!

Bright Ideas

What designs will you light up with your paper circuits?

Get three-dimensional!
Diffuse light behind paper or fabric!
Design unusual switch layouts.
Connect and arrange your lights to create all sorts of effects.

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This zine was created by the MIT Public Library Innovation Exchange (PLIX) and Jie Qi, the creator of Circuit Stickers.

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