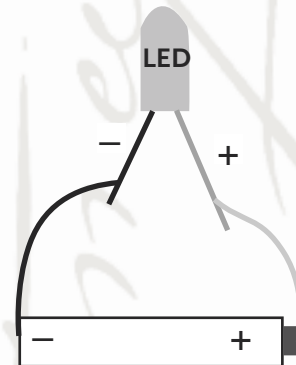


Student Materials for 4 Frame

Your four frame animation theater uses four lights called LEDs. An LED is a Light-Emitting Diode. It requires very little electricity – less than a tenth of the electricity of an incandescent bulb! It also produces no heat. As a result, LEDs are being used more and more. You might see them as indicator lights (like the one that shows that your computer is on), traffic signals, and car brake lights.

Putting an LED light in a circuit requires some thought. Electricity always moves from the negative side of a battery through the circuit and back to the positive side. Electricity only travels through an LED in one direction. So you need to know which is the negative lead of the LED and connect it with wires to the negative side of the battery. This gives the electricity a path from the negative side of the battery into the LED. To give the electricity a path back to the positive side of the battery, you need to connect the positive lead of the LED with wires to the positive side of the battery.



Electricians and scientists use color to help them draw electrical circuits. They use black for the negative part of the circuit and red for the positive part of the circuit.

Show how to finish the circuit so that LED #1 will light.

1. Draw the wire that connects the LEDs to the positive side of the battery. (You will need to draw what is on the bottom side of the board. Imagine that the board is transparent.)
2. Draw your commutator and the wire that connects it to the battery, remembering to put it in the position it would need to be in to light LED #1.
3. Use colors to show the path the electricity follows in the complete circuit. Trace the negative part of the path (into the LED) in black. Trace the positive part (back to the positive side of the battery) in red.

