



Curiosity Guide #604

Electric Lights

Accompanies Curious Crew, Season 6, Episode 4 (#604)

Illuminating Bulbs

Investigation #3

Description

Let your little light shine!

Materials

- 3 D-cell batteries
- 3 battery holders
- 1 mini light bulb holder with Fahnestock clip
- 1 mini light bulb
- 4 alligator clips

Procedure

- 1) Place the batteries into the battery holders.
- 2) Screw the mini bulb into the bulb holder.
- 3) Attach a single battery to a light bulb with two alligator clips.
- 4) Add another battery into the circuit with another alligator clip. Be sure that the negative battery end is connected to the positive end of the first battery.
- 5) What do you notice?
- 6) Can you follow the flow of the electricity through the light bulb?
- 7) What would happen if a third battery were added?

My Results

Explanation

This circuit is a simple series circuit that allows a flow of electricity to travel from the battery through the light bulb and back. At first, there is only 1.5 volts of electricity going through the bulb. Voltage is a measurement of how hard the electrons are pushed through the circuit.

When the second battery is added, then a total of three volts is running in the circuit. The change in voltage results in a brighter bulb.

Electricity enters and exits the bulb through two contact points, one called the electrical foot contact at the bottom of the bulb, and one on the side called the screw thread contact. Electricity flows across the filament and collides with the atoms, creating heat. At first, the bound filament electrons vibrate faster, but when the electrons slow down, the energy is transferred into a released light photon that is visible. The increased electricity from the second battery increases the energy flow, heat, and released light.

**Parents and Educators: use #CuriousCrew
#CuriosityGuide to share what your Curious
Crew learned!**



Curious Crew is a production of Michigan State University.

Learn more at WKAR.org.

© MSU Board of Trustees. All rights reserved.