



## Curiosity Guide #604

### Electric Lights

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

#### Magic Light Bulb

Investigation #2

#### Description

Astound your friend with a mysterious magic light bulb!

#### Materials

- Magic Light Bulb, available on Amazon in Toys and Games and on sites that sell magic tricks
- A friend

#### Procedure

- 1) Show your friend the magic light bulb.
- 2) Carefully hold the light bulb in your hand by touching the side of the bulb, then secretly touch the bottom of the bulb at the same time.
- 3) Try placing the magic bulb against your forehead while touching the sides. Tell your friend, "I have a bright idea."
- 4) What do you notice?
- 5) Hand the light bulb to a friend to see if they can explain how the light bulb works.

#### My Results

## Explanation

The Magic Light Bulb looks like an ordinary light bulb but seems to work without a power source. Inside the base of the bulb are watch batteries that connect to a 3-volt LED white light. Normally the circuit is open. However, touching both the side and bottom of the bulb, or its active contact points, closes the circuit. The energy from the battery flows through the bulb, back through your hand, and into the bulb again. Because the magic bulb is only 3 volts, we can't really feel the energy flow.

**Investigate further.** Look online or in your library for photos and diagrams of early electric light bulbs. You may also enjoy reading about the lives of inventors Thomas Edison and Joseph Swan. The electric lamp really lit up the world in 1880 when Thomas Edison in the United States and Joseph Swan in England redesigned the electric arc lamp to make a light bulb that could last a long time. Edison's design had wires that ran into the bulb to carry electricity across a filament that would glow when the filament got hot. After thousands of attempts, Edison found that a filament made of bamboo covered with carbon worked as long as there was no air in the bulb. Now that was a bright idea!

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