





California State University of Bakersfield, Department of Chemistry

Aluminum Circuit



Standards:

<u>1-PS4-2.</u> Make observations to construct an evidence-based account that objects in darkness can be seen only when illuminated.

<u>1-PS4-4.</u> Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.

<u>3-PS2-3.</u> Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other.

Introduction:

Circuits carry electric current when they are in a closed loop, and can act differently depending on the physical set up of the circuit. Current, which is the flow of electrons in a circuit, can be carried through wires, barriers, and any other functional pieces of circuits, like lights.

Materials:

- 9V battery
- Electrical tape

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- Aluminum foil
- 1 flashlight bulbs

Safety:

- Always have an adult with you to help you during your experiment.
- Always wear eye protection and gloves when doing chemistry experiments
- Always be careful the battery will get warm

Procedure:

- 1. Take two 8-inch strips of aluminum foil and fold it in half the long way at least two times.
- 2. Tape an 8-inch strip of aluminum foil to the positive terminal of the 9V battery. Make sure the aluminum foil is touching the metal.
- 3. Tape another 8-inch strip of aluminum foil to the negative terminal of the 9V battery. Make sure the aluminum foil is touching the metal.
- 4. Wrap the end of the aluminum strip attached to the positive terminal around the light bulb's metal screw cap. (Make sure the bottom of the metal screw cap is still exposed and use electrical tape to hold the bulb tightly in place.)
- 5. Place the bottom of the light bulb (bottom of the metal screw cap) attached to the positive terminal on the loose end of the other battery's foil strip.
- 6. You have created a series circuit. Take note of how brightly the bulb shines.

Data and Observations:

1. Record your observations in this space.

Questions:

- 2. What other household objects could you use to create a circuit?
- 3. What other kind of circuits can you create using foil?

References: 1. Bjornsson, Erin. Series and Parallel Circuits (Education.Com). http://www.education.com/science-fair/article/parallel/ (Accessed: July 28, 2014)					

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