

## The Norwood Science Center

Energy  
Grade 1

### **Background Information:**

The movement of electricity is called current. Electricity flows only when it completes a path or circle back to its source, such as a battery. This path is called a circuit. If the path has a gap, the circuit is "open" and electricity cannot move.

Three parts make up a complete circuit: a source of electricity, such as a battery; wires, which provide a complete path; and an electric appliance, such as a lamp, motor, or iron.

**TITLE:            YOU LIGHT UP MY LIFE!**

**PURPOSE:**    Explore possible ways to complete an electrical circuit.

**MATERIALS:**   (per pair of students)  
One D cell battery  
One piece of wire  
One Flashlight bulb

### **Caution**

Touching one end of a wire to one end of the battery and the other end of the same wire to the other end of the battery creates a short circuit. Electricity will flow unimpeded through the wire. Without a bulb or some device that pushes back or resists the flow of electricity a great deal of heat can be generated in the wire. Do not allow students to construct this type of circuit.

## **PROCEDURE:**

01. Stimulate discussion by holding up the materials to be used and asking the students to name and describe the function of each. (If the students do not supply the information, make sure that these ideas are covered: a battery is the source of electrical energy; the wire carries electrical energy; the bulb changes electrical energy into light energy).
02. Ask the students to predict how they could arrange the materials to light the bulb. Reassure them that no shock will occur. Write several of the predictions on the chalkboard.
03. Distribute the materials and instruct students to light the bulb.

### **Caution**

The students are not to poke the wires into any object. The wires are to touch the outside of the objects.

04. After some initial floundering, offer the first bit of help. The materials need to be arranged in such a manner that the electricity can flow from the battery, through the bulb and return to the battery.
05. After another period of investigation, draw a circle on the board. Offer this to the students as the second hint. The materials need to be arranged in a circle, or a circuit, in order for the electricity to light up the bulb.
06. As students get close to the answer it may be wise to offer some concrete help and actually direct them towards the answer.

## **CONCLUSION:**

01. After all the students light up their bulbs they are to draw diagrams of the circuits in their notebooks.

## **SOURCE:**

01. Electrical Circuits. Delta Science Module, Nashua, NH, 1988.

