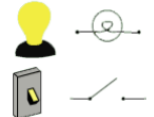
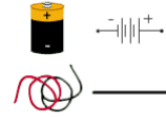


"It's Electric"

Name: _____

Per: _____



Lesson Objective: 7.P.2.3 Recognize that electrical circuits require a complete loop through which an electrical current can pass.

Materials: 1 D Cell Battery, Battery holder, 1 bulb, 4 wires, 1 switch

Part A

Light **a bulb** using only **one wire** and **one battery**.

Draw your circuit and trace the path of electricity as it flows through each successful arrangement. (Hint negative to positive)
(4pts)

1. List 3 ways in which the bulb in **part A** can be turned off? (3pts) _____

Part B

Construct a circuit using your simple **circuit from part A**, **an additional wire**, and a **switch** so that the bulb may be easily turned on and off using the switch.

2. What is the function of a switch in a circuit? (1pt) _____

3. Does it matter where the switch is placed in a circuit? Why/ why not? (2pts) _____

4. Draw your new circuit with the switch and trace the path that electrons follow. (hint negative to positive) (5pts)

5. What is a conductor? Give an example. (2pts)

6. What is an insulator? Give an example. (2pts)

Remove the switch from the circuit and touch the two free ends of the wires to various small objects (Cardboard, paper clips, pencil etc) to see if they are conductors or insulators. If the bulb lights up then you have a conductor, if it doesn't then you have an insulator. Make sure the wires are not touching each other!



Part C

Join with another group to create a series circuit in which **one battery** is able to light **two bulbs**. Only **3 wires** should be used.

7. In your series circuit what happens to the other bulb when one bulb is removed from the circuit (1pts)?

8. Redesign your circuit using **4 wires** so that when one bulb is out the other will remain lit. This type of circuit is called a parallel circuit. Draw your successful diagrams (6pts).

Series Circuit	Parallel Circuit

9. What do you notice about the intensity (brightness) of the two bulbs when placed in series? How does this compare to the intensity of the bulb in part A. (1pt)

10. Identify the following components in your circuit (4pts).

- a. Power Source _____ b. Conductor _____
- b. Load _____ d. Control Element _____