

Constructing an Electric Circuit

Purpose: to construct a simple electric circuit that operates safely and can be controlled.

Background:

- What are the four parts in an electric circuit?

Hypothesis: If the four parts of an electric circuit are connected, then a functioning electric circuit can be created

Materials:

3 batteries (with holders)

4 connecting wires (conductors)

switch

light bulb

Method:

1. Study the electric circuit shown on the right of the page.
 - a. Draw a proper circuit diagram for the circuit shown.



Part 1

2. Place the switch, battery and light bulb on your desk as shown in the figure above.
3. Identify the negative terminal of the battery and connect a wire from it to one side of the switch. Ensure the switch is open.
4. Connect a wire from the other side of the switch to one side of the light bulb.
5. Connect a wire from the other side of the light bulb to the positive terminal of the battery.
6. Close and open the switch several times. Touch the light bulb and record your observations.

Part 2

7. Disconnect the wire from the negative end of the battery and attach two batteries together.
8. Reconnect the wire to the negative end of the battery. Record your observations.
9. Disconnect the wire from the negative end of the battery and connect a third battery.
10. Reconnect the wire to the negative end of the battery. Record your observations.

Part 3

11. Disconnect the wire from one side of the light bulb. Attach a second light bulb to the first light bulb using another connecting wire.
12. Reconnect the wire from the light bulbs to the battery. Record your observations.
13. Deconstruct your circuit carefully and return all your materials.

Observations:

	Elements in Circuit	Observations
Part 1		
Part 2		
Part 3		

Analysis:

1. What is the function of:
 - a. the battery?
 - b. the switch?
 - c. the light bulb?
 - d. the connecting wires?
2. Which one of the four parts of the circuit can be removed while allowing the circuit to continue to function? Why is it usually included in a circuit?
3. What effect did adding more batteries to the circuit have? **Why** do you think this was so?
4. What effect did adding a second light bulb to the circuit have? **Why** do you think this was so?