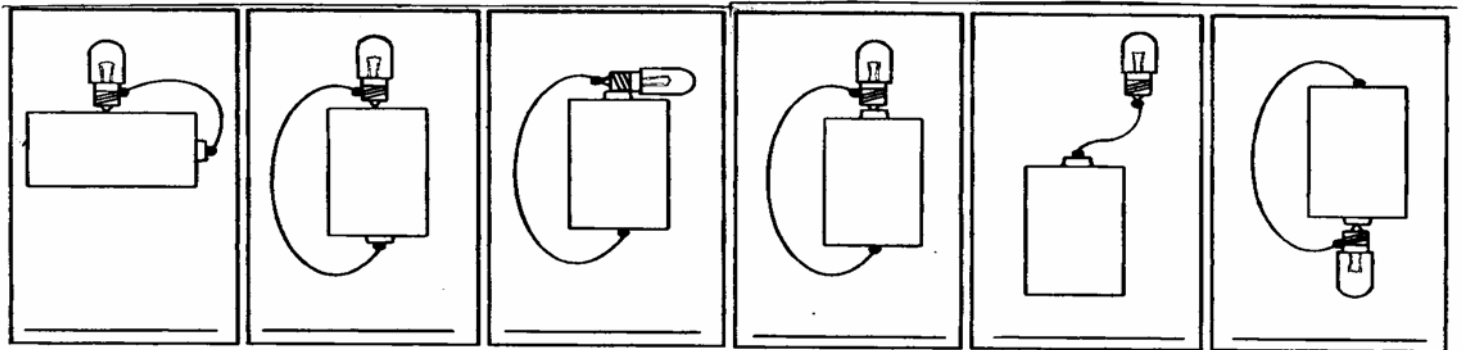


# Electricity

## A Closer Look at Circuits

(Lesson 3)

**Background:** (What you're studying today) In Lesson 2 you learned that a **complete circuit** must be formed in order to get a **continuous flow of electricity** to light a bulb. You built a complete circuit one way. Do you think there are other ways to make a complete circuit? Below you will see diagrams of several circuits. Look carefully at how each circuit is made and decide if you think there is more than one way to make a complete circuit.



Circuit A

Circuit B

Circuit C

Circuit D

Circuit E

Circuit F

**Question:** (What you want to find out) Which of the diagrams show a complete circuit?

**Hypothesis:** (Prediction) I think that the following diagrams show a complete circuit that will light the bulb:

(Circle each circuit below that you think is a complete circuit)

Circuit A

Circuit B

Circuit C

Circuit D

Circuit E

Circuit F

**Materials:** (What you'll need) 1 D-cell battery 1 bulb 6" piece of wire (ends stripped)

**Procedure:** (Numbered steps needed to complete the investigation)

1. Build Circuit A exactly as shown in the diagram above. **Watch your fingers!**
2. Observe if the bulb lights or not. If the light goes on, you have a complete circuit, so circle "complete" on your data sheet. If the light does not go on, you have a short circuit, so circle "short" on your data sheet.
3. Repeat steps 1 and 2 for Circuits B through F.

**Data:** (What happened)

Circuit A	Circuit B	Circuit C	Circuit D	Circuit E	Circuit F
Complete	Complete	Complete	Complete	Complete	Complete
Short	Short	Short	Short	Short	Short

**Conclusion:** (What you learned)

My hypothesis was **proven** **disproved** because the following circuits made a complete circuit and lit the bulb:

**Circuit A**      **Circuit B**      **Circuit C**      **Circuit D**      **Circuit E**      **Circuit F**

I learned that it **is** **is not** possible to have more than one type of complete circuit.

**Discussion:** (What else can you say?)

1. What 2 parts of the light bulb did the wire or battery need to touch in order to form a complete circuit? Draw a bulb and show which 2 parts are used in forming a complete circuit.

2. Do you think the circuit would be complete if you touched the wire to the glass part of the bulb? Why or why not?

3. If you use a battery, a wire and a bulb to make a circuit, but the bulb does not light up, what could be the problem? See if you can think of 3 things to check on to make sure you have a complete circuit.

1.

2.

3.

