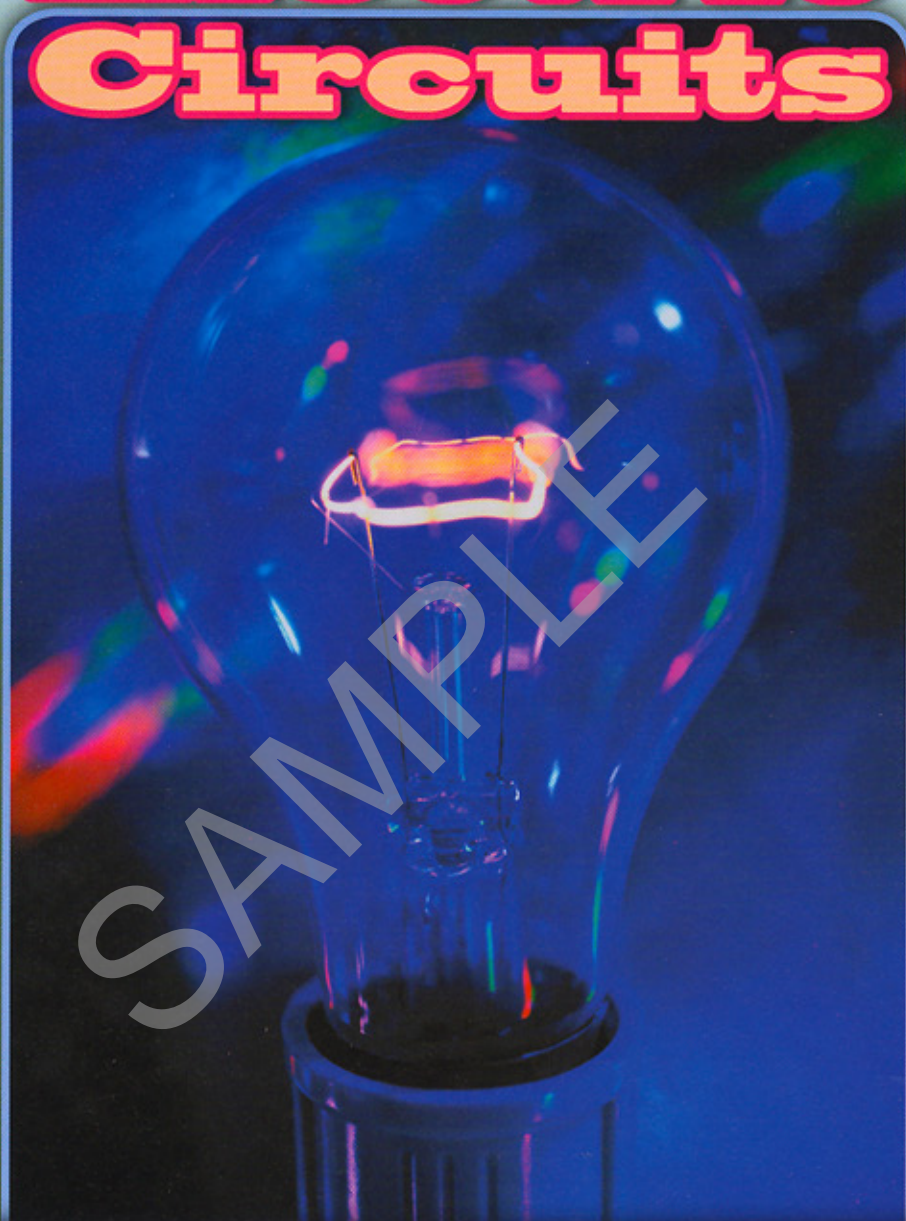


Electric Circuits



Circuit (sûr' kit) the path that is made for an electric current to follow

Electric Current (i lek' trik kûr' ənt) the flow of electric charges through a conductor

Switch (swich) a device that opens and closes circuits

Using SCIENCE Words

1. To open a circuit, use a(n) _____.
A. electric current
B. circuit
C. switch

- 1 You use electricity many times every day. Electricity powers lights, heaters, and refrigerators. It also powers televisions, computers, and many other machines. Some trains are powered by electricity.
- 2 **Electric current** is the flow of electric charges through a conductor. When electric current flows, it needs to move through something. Often, it moves through wires. Wires are electrical conductors. Electric current flows through the wires in houses and schools.
- 3 The path that is made for electric current to follow is called a **circuit**. A circuit must be closed, or complete, for electric current to flow. If a circuit is open, electric current can't flow. Think of a circular track for a toy train. If a piece of the track is broken or missing, the train can't run around it. A circuit is the same. A path with a break in it is an open circuit. If a circuit is open, electric current can't move along it. Electric current can move only when the circuit is closed.
- 4 A circuit needs a source of electricity. An electric power plant is the source of electricity for your home. Electric current moves through wires from the power plant to your home. When the circuits in your home are closed, electric current flows. The electric current powers lights and other devices that use electricity. When the circuits are open, electric current doesn't flow. Electric devices will not run.
- 5 Sometimes you want to open circuits. You open circuits when you turn off electric devices. To open or close a circuit, you use a switch. A **switch** is a device that opens and closes circuits. Most electric devices have switches. You use the switches to turn electric devices on and off.
- 6 Batteries are sources of stored electrical energy. Large batteries are used in cars. They operate a car's lights, windows, and other electric parts of the car. Many small devices that you can carry also use batteries. Cell phones, handheld video games, and flashlights use batteries. Some clocks and toys that move also use batteries.
- 7 Objects that use batteries have circuits. In a flashlight, the electric current moves through wires or pieces of flat metal. The electric current moves from the battery through metal that is attached to the bulb. Then the current moves through a wire from the bulb back to the battery. The electric current makes a complete path through the circuit.
- 8 You use the battery's switch to close the circuit. This lights the flashlight's bulb. You open the circuit when you switch off the flashlight. The bulb is no longer lit.

COMPREHENSION

Write *T* if the statement is true, based on the reading. Write *F* if the statement is false.

2. A circuit must be open for electric current to flow.
3. Batteries do not contain stored electrical energy.

4. Electric current is the flow of electric charges along a path.
5. A switch opens and closes a circuit.
6. The cord of a lamp is not part of a circuit.

LEARN ABOUT WORDS

A. You can often tell the meaning of a word by reading the words around it. Look at each number in parentheses. Find the paragraph in the reading with the same number. Then find the best term that fits the given meaning. Write the term.

7. the flow of electric charges through a conductor (2)
8. moves (2)
9. the path that is made for electric current to follow (3)
10. origins (6)
11. device that opens and closes circuits (8)

B. **candlelight** = the light from a candle

birdhouse = a house for a bird

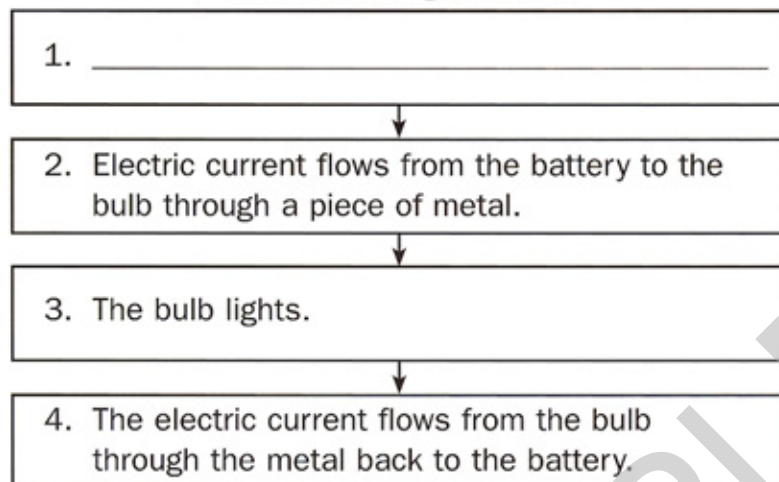
Candlelight is a compound word. It is made by joining two shorter words, *candle* and *light*. *Candlelight* means "the light from a candle." Read the phrases below. Each phrase tells you the meaning of a compound word. Write the word.

12. a shade for a lamp _____
13. not anywhere _____
14. a storm with snow _____
15. the top of a lap _____
16. light during the day _____

THINK ABOUT IT

Look at the flowchart. Then answer the questions.

How a Flashlight Works



17. Which belongs at the beginning of the flowchart?
- A. The flashlight is unplugged from an outlet.
 - B. The switch is turned on.
 - C. The circuit is opened.
18. What happens last in the flowchart?
- A. The bulb lights.
 - B. Electric current flows from the battery to the bulb.
 - C. Electric current flows from the bulb to the battery.

Using SCIENCE Words

1. C

Comprehension

2. F
3. F
4. T
5. T
6. F

Learn About Words

7. electric current
 8. flows
 9. circuit
 10. sources
 11. switch
12. lampshade
 13. nowhere
 14. snowstorm
 15. laptop
 16. daylight

Think About It

17. B
18. C

Writing About Science

Draw a diagram of an open circuit. Label the battery, the bulb, and the switch.