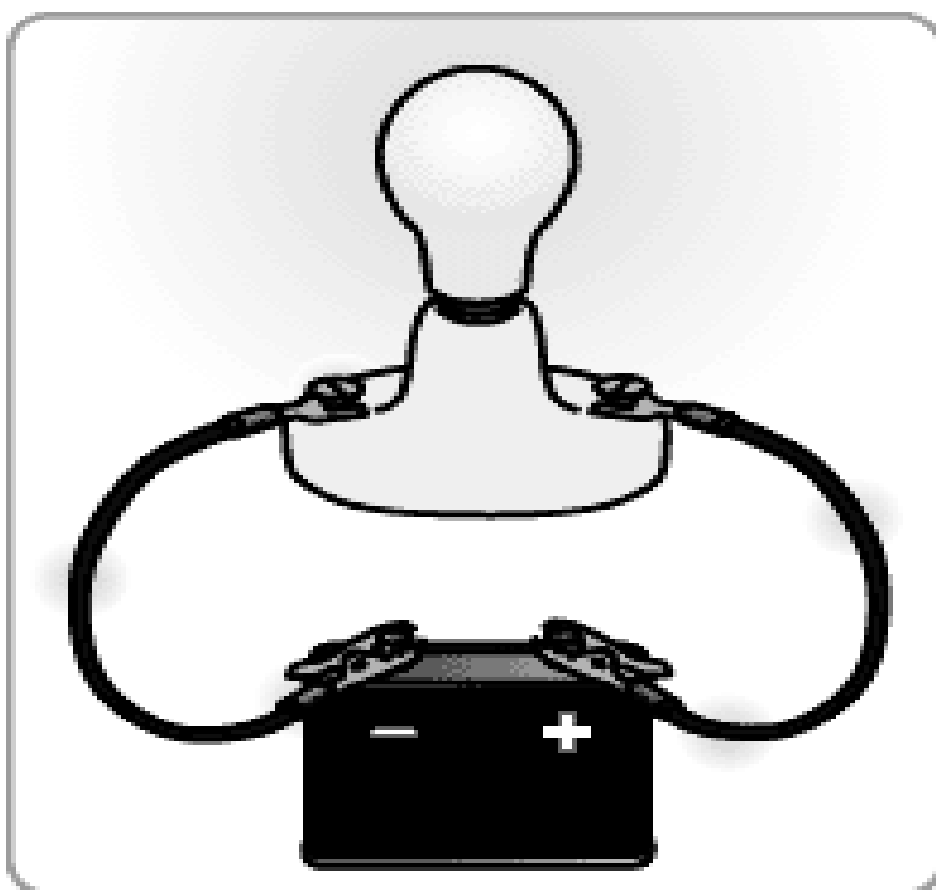


Science and Health

ELECTRIC CIRCUIT



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To the Learner

Hello kids. Electricity flows in a path called circuit. The parts of an electric circuit are conductor, insulator, switch, fuse, source and load. In this lesson you will know more about electric circuit.

An **Electric Circuit** is composed of interconnected electrical components. These components form a complete path of an electric circuit. Simple electric circuit has ***three main parts***: The sources are **power supply**, the **conductor**, and the **load**.

The power supply is the source of electricity. It is provided by a generator or a battery. The conductor is normally an electrical wire that is covered or wrapped by an insulator. The load is an electric device such as a lamp or bulb, a motor or a speaker.



Let's Learn This

- Identify the parts of electrical circuit.



Let's Try This

Multiple choice. Box the letter of the correct answer.

1. An electric current flows
 - a. in an open circuit
 - b. in a closed circuit
 - c. broken circuit
 - d. incomplete circuit
2. Which controls the flow of electric current in a circuit?
 - a. dry cell
 - b. switch
 - c. wire
 - d. appliance
3. Electric current flows easily through some materials made of metals. These materials are called:
 - a. insulators
 - b. transmitters
 - c. conductor
 - d. non-conductors
4. Insulators are used to cover conductors to:
 - a. direct the flow of electric current in a circuit.
 - b. have a rapid flow of electric current.
 - c. prevent electric current from changing from its path.
 - d. prevent heating of wire.
5. The electricity supplied to most homes is called:
 - a. direct current
 - b. alternating current
 - c. high voltage
 - d. low voltage

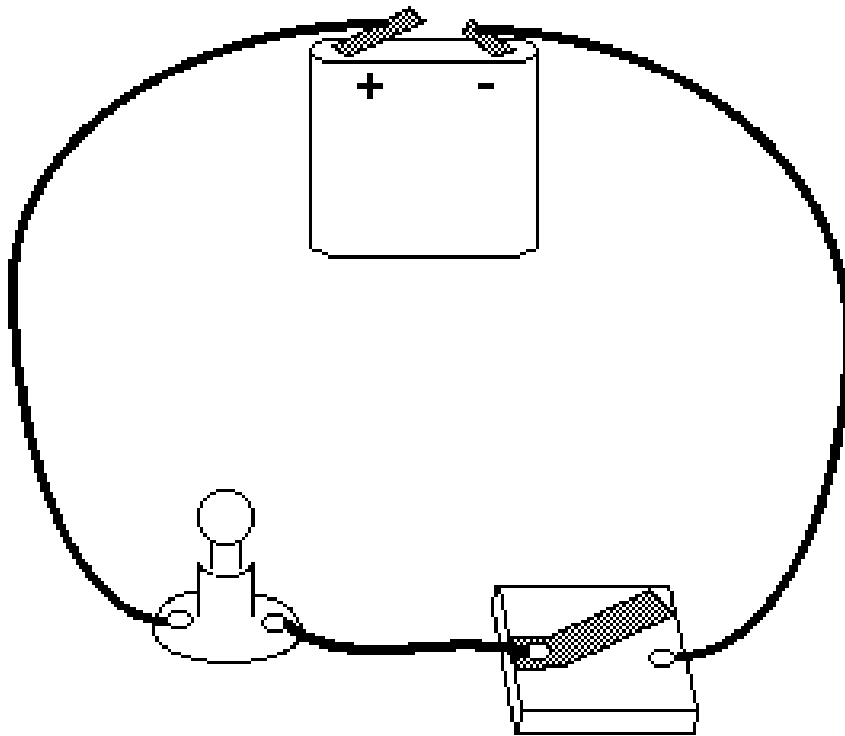
What's your score? _____

GOOD JOB!!! 😊



Let's Study This

- A. Using an illustration. Identify the parts of an electric circuit and describe their functions.



- B. Trace the flow of electricity from the source on dry cell to the wire to the appliance or electric bulb and then to the wire and back to the source.

Electric current does not flow in an open or incomplete circuit. A current does not flow from the dry cell unless there is a path from one terminal to another.

PARTS OF AN ELECTRIC CIRCUIT

1. **SOURCE** – a source of electric energy maybe a dry cell battery, generator, or a solar cell.

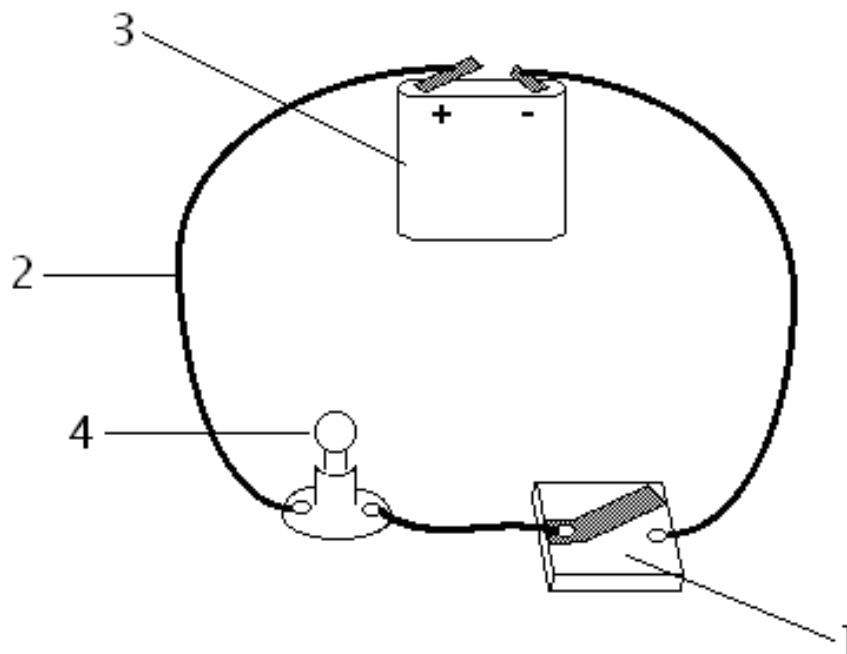
2. **CONDUCTOR** – current electricity flows along a path made of metal. Metals like silver copper and aluminum wire are good conductor of electricity.
3. **INSULATOR** – an insulator is a safety device. Although electricity flows along a metal path, it cannot pass through insulators like rubber.
4. **LOAD** – a load is an output device. It maybe a lamp, a motor or a loud speaker.
5. **SWITCH** and **FUSE** – the switch controls the flow of electricity. The fuse is safety device that also controls the flow of large amount of electricity.



Let's Do This

ACTIVITY 1

- A. Label the part of an electric circuit.

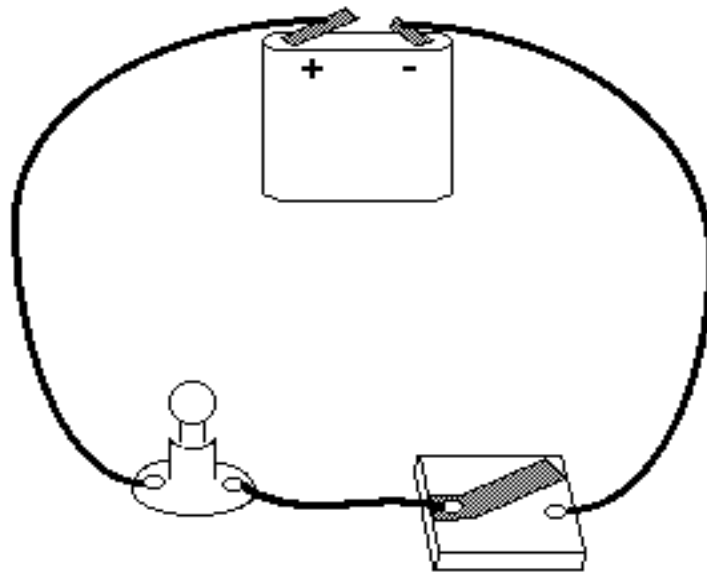


B.

ACTIVITY II

- I Problem: What is an electric circuit?
- II Materials: Light bulb, switch, dry cell, electric wire, electric tape, a piece of flat wooden board.
- III Procedure: Under strict supervision of the teacher.

1. Screw in the light bulb on one end of the board.
2. Use the electrical tape to secure the dry cell on the other end of the board.
3. Use an electrical wire. Secure its to other end of the switch (screw the switch on the board) then use another wire to connect the bulb to the switch, (as shown in the illustration below).



4. Switch on and off and observe.
5. Answer the following questions:

What happens when we push the switch down?

When we release it?

Why doesn't the bulb light when the batteries are taken off?

When does the electric current flow?



Let's Do More

Match column A and B. Write the letter of the correct answer.

A

B

- | | | |
|----------|---|--------------|
| ----- 1. | Materials that allow electricity to flow or pass through it. | a. fuse |
| ----- 2. | Controls the amount of electricity that flow and also called "circuit breaker". | b. conductor |
| ----- 3. | Materials that do not allow electricity to pass through. | c. insulator |
| ----- 4. | Also known as the power supply that can convert some type of energy into electrical energy. | d. circuit |
| ----- 5. | A device that opens or closes the flow of electricity in a circuit. | e. switch |
| | | f. source |



check your answer

☺ What's your score? -----



Let's Remember This

The parts of a circuit are the source, the conductor on connecting wires and the resistance on appliances. In a circuit, electric current flows from the source, then passes through the conductor or wire, to the device or resistance and back to the dry cell. The complete path of electric current is called CIRCUIT. Electric current flows only when the circuit is closed. An electric current is a flow of electrons. It is electricity in motion. Insulators are used to cover conductors to prevent the current from causing electric shock.



Let's Test Ourselves

Encircle the letter of the correct answer.

1. Which of these is the source of electricity?

- | | |
|---------------|--------------|
| a. battery | c. switch |
| b. light bulb | d. appliance |

2. When the switch is "ON" the electric current is

- | | | |
|---------|-----------|-----------|
| a. open | b. closed | c. broken |
|---------|-----------|-----------|

3. How does the electric current move in a circuit?
- a. From source to device and back to source.
 - b. From the source to the source and back to the device.
 - c. Both A and B.
4. Which of the circuit will current flow?
- a. Closed Circuit
 - b. Open Circuit
 - c. Short Circuit
5. Which of these controls the flow of electric current?
- a. battery
 - b. switch
 - c. light bulb

☺ What's your score? _____

Science Fact File

It is possible to move electric charges from one object to another and moving charges produce an electric current.



Answer Key

Let's Try This

1. b
2. b
3. c
4. c
5. a

Let's Do This

1. switch
2. wire – conductor
3. dry cell – source
4. load

Let's Do More

1. b
2. a
3. c
4. f
5. e

Let's Test Ourselves

1. a
2. b
3. a
4. a
5. b