

# What Are Electrical Circuits?

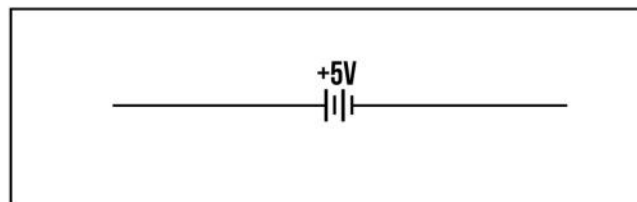
A circuit is a path through which electricity flows. It needs a source of electric current, such as a battery, and a medium through which the electricity can pass through the circuit, such as a wire, which is known as a conductor.

If the current flows uninterrupted, electronic appliances, such as a bulb, light up when connected to the circuit. Electricity travels through the circuit in the form of rapidly moving tiny charged particles known as electrons. If the circuit is broken or is open in any part, the electrons do not travel from the negative charge to the positive charge and, hence, the battery does not generate the electric current.

The following are the different parts of an electric circuit:

## ● Battery

The battery is the power source of the circuit.

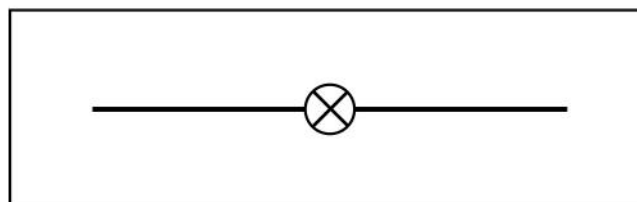


## ● Conductors

Conductors are usually copper wires that connect the positive source of the battery to the load and, then, connect the load back into the negative point of the battery. Thus, they form a loop for uninterrupted flow of electrons. The current flows from the negative to the positive terminal of the battery.

## ● Load

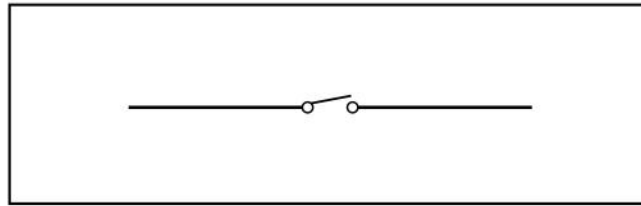
The load is a small light bulb that lights up when the circuit is connected. It is also known as a resistor.



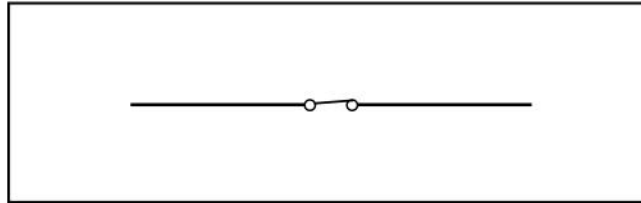
## ● Switch

The switch is a gap in the conductor where you can close or open the circuit. The current does not flow through an open switch as it causes a disruption in the loop. When you close the switch, the circuit becomes closed and uninterrupted and, hence, the current flows through the circuit.

## Open Switch

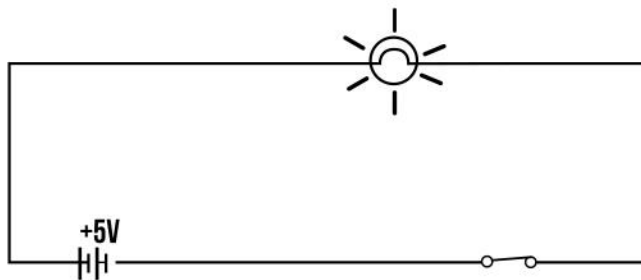


## Closed Switch



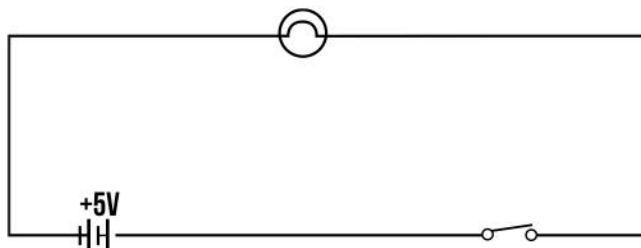
## Closed circuit

In a closed circuit, there is no break or interruption in the conducting wire. Hence, the electric current flows through the circuit continuously. So, when we press the switch on, the circuits get closed and the bulb lights up.



## Open circuit

In an open circuit, there is a break along the line of the conducting wire and, hence, the current stops flowing through the circuit.



## Insulators

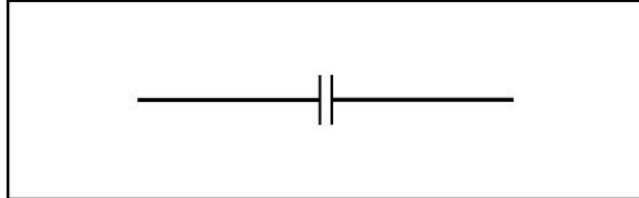
Metals are good conductors of electricity and, hence, conductors are made of metal. However, these metal wires are covered by plastic or rubber (bad conductors of electricity). These insulators stop the flow of electric current outside the circuit and, hence, protect us from getting electrocuted.

## Current

The current refers to a flow of electric charge. The flow of electrons is the flow of current in a circuit.

## Capacitor

The capacitor is an electronic device that stores energy just like a battery. However, it can store and release energy much faster than a battery. It is used in many electronic devices.



## Resistor

A resistor is an electric component that is used to resist electricity. It limits the flow of electric current in an electronic device and helps prevent any parts from getting burnt in higher currents.



**Answer the following questions based on the text given above.**

1 Define a circuit.

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2 What is the power source of a circuit?

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3 In which direction does the current flow in a circuit?

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4 What is a load? What is it also known as?

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5 What is a switch?

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6 What is the difference between a closed circuit and an open circuit?

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7 What are insulators used for? Give two examples of insulators.

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8 What is a capacitor?

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