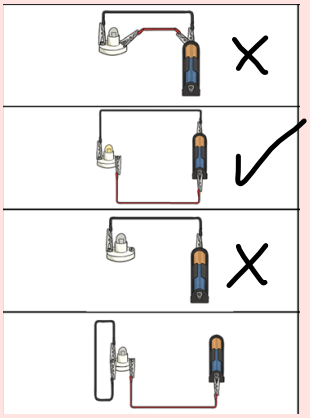
Tuesday 9th March

LO: To explore the purpose of a switch



Starter

Which circuits are complete?
Explain why.

Electric Current

Electric current is a flow of electric charge carried by moving electrons in a wire. The electric current is created by electrons or charges continuously moving through a path called an electric circuit. It flows from a power source like a battery or power station.

A closed circuit has a complete path for current to flow allowing the electric charges or electrons to flow through the wires of the circuit. An open circuit will not allow the electric charges or electrons to flow through the wires of the circuit. A switch can be used to open and close a circuit.

In a series circuit, the same current flows through each of the components. In a series circuit, each bulb will receive the same electrical charge, but if one goes out, all will go out. An example of a series circuit may be a string of Christmas lights. If any one of the bulbs is missing or burned out, no current will flow and none of the lights will go on.

Batteries are also a source of electric current usually used with a series circuit. The electric current from the battery flows in one direction to the component such as a radio, flashlight, or a toy.

Parallel circuits will have different amounts of current flowing through them. The same voltage is applied to parallel circuits, but different amounts of current will flow through the wires. Voltage is a kind of electrical force that makes electricity move through a wire and it is measured it in volts. The higher the voltage, the more current will tend to flow. A 12-volt car battery will normally produce more electric current than a 1.5-volt flashlight battery.

A parallel circuit example is the wiring of a house. There is a single power source supplying all the lights and appliances with the same voltage. However, if one of the lights burns out, the current will still flow through the rest of the house.

There are power plants that produce electricity for homes and businesses. Most power plants use coal to generate electricity, but some use wind, water, or natural gas. The power grid is the system connecting all of the power plants across the country. All the poles and wires along the highway and roads are a part of the power grid. A transformer can help in decreasing or increasing the voltage as the electricity travels to homes and businesses through transmissions lines. A meter is used to measure the amount of electricity used.

The electricity goes through wires to the service panel in a basement or garage, where breakers or fuses protect the wires inside a house from being overloaded. The electricity then travels through wires inside the walls to outlets and switches all over the house.

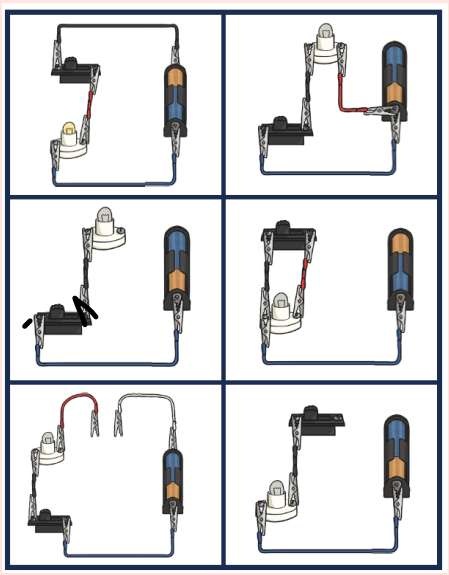
Conductors are made of materials that electricity can flow through easily. A material that is a good conductor gives very little resistance to the flow of electricity. The electricity can flow through a conductor very easily. Examples of conductors include water, trees, aluminum, copper, people, and animals.

Insulators prevent or block the flow of electricity. Insulators do not allow the flow of electricity and blocks the electricity from moving along its path. Examples of insulators are glass, rubber, porcelain, and plastic. Wires that carry electricity are covered with an insulator.

There are many steps involved when electric current flows from its source to its use.

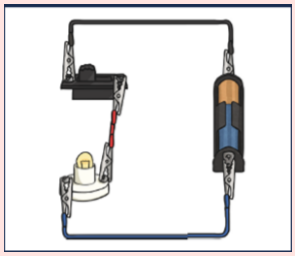
Complete the quiz online

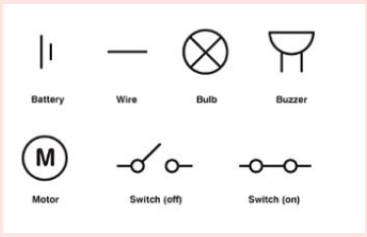
https://www.softschools.com/language_arts/reading_comprehension/science/71/electric_current/

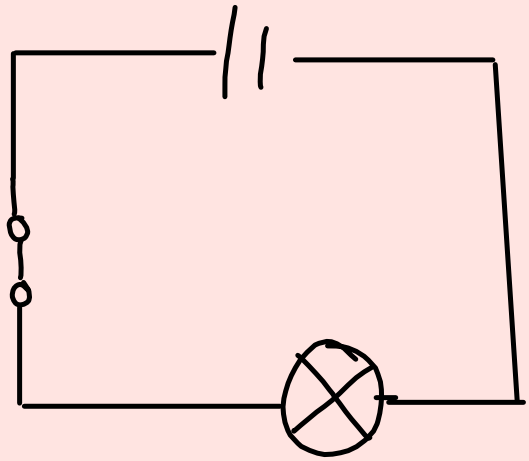


Make predictions about which circuits you think are complete.

Then test your predictions.



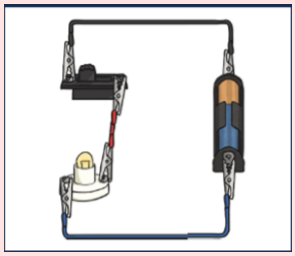


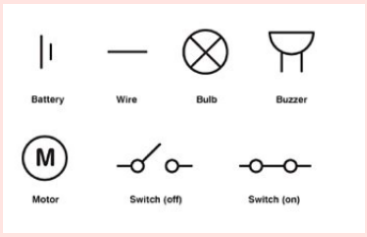


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correct

Use a k

The energy from the battery flows through the switch and when you switch it on it completes the circuit to light the bulb.

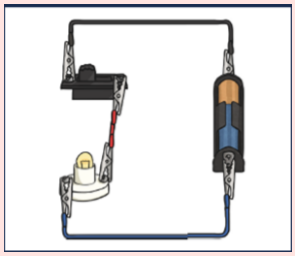


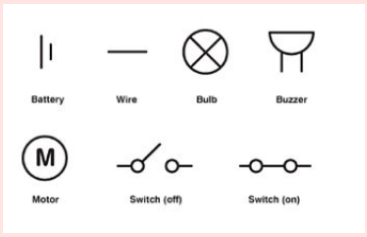


We do

With your partner draw a complete circuit diagram with a switch using the correct symbols on your whiteboard.

Change the positions of the components.





You do

Draw a complete circuit diagram with a switch using the correct symbols in your book.

Change the positions of the components.

Use a key.