

Electricity

KNOWLEDGE MAT

YEAR 4
SCIENCE

KEY KNOWLEDGE



cell: Normally, we would call this a battery but scientifically, this is a cell. Two or more cells joined together form a battery.

bulb: Lights up in a complete circuit.



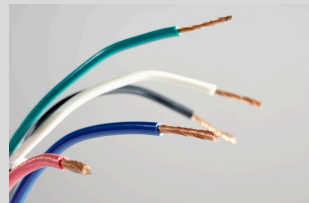
buzzer: Makes a noise in a complete circuit.

motor: Produces movement in a complete circuit.



switch: Used to turn other components in the circuit on or off.

wire: A flexible metallic conductor usually covered in plastic to insulate it.



KEY VOCABULARY

Electricity-The flow of an electric current through a material, e.g. from a power source through wires to an appliance.

electrical circuit- a complete route that an electric current can flow around.

appliances- A piece of equipment or a device designed to perform a particular job, such as a washing machine or mobile phone.

battery- A device that stores electrical energy as a chemical. Two or more cells joined together form a battery.

circuit-A pathway that electricity can flow around. It is based around wires and a power supply. Examples of components (parts) you can add in to a circuit are bulbs, switches, buzzers and motors.

mains electricity- Electricity supplied through wires to a building.

electrical conductor- A conductor of electricity is a material that will allow electricity to flow through it.

electrical insulator- Materials that are electrical insulators do not allow electricity to flow through them.

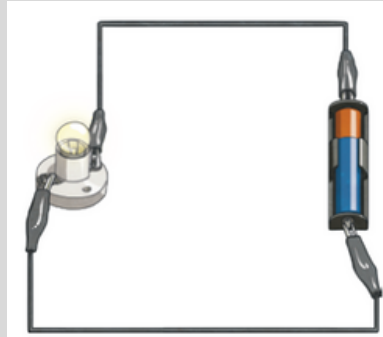
Many everyday appliances rely on electricity for them to work. Some appliances use mains electricity (are plugged into a socket) and others have a battery to make them work. Examples of mains-powered appliances include toasters and televisions. Battery-powered appliances can include mobile phones and torches.



KEY KNOWLEDGE

Complete Circuit

Electricity can flow. The components will work.



Series Circuit

A circuit where the components are connected in a loop. Electricity flows through each component in a single pathway.



Incomplete Circuit

There is a break in the circuit that prevents the electricity from flowing. The components will not work.

KEY KNOWLEDGE

Electrical conductors and insulators

5 Electrical Conductors



silver



gold



copper



steel



sea water

5 Electrical Insulators



rubber



glass



oil

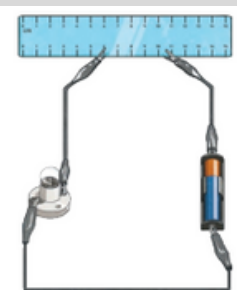


diamond



dry wood

Materials can be tested in a circuit to see if they are electrical conductors or electrical insulators.



Switches

Switches can be used to open or close a circuit. When off, a switch 'breaks' the circuit to stop the flow of electricity. When on, a switch 'completes' the circuit and allows the electricity to flow.

