

Key Learning

Many everyday appliances rely on electricity for them to work, some use mains electricity (are plugged in to a socket), some use battery.

A circuit needs to be complete so that electricity can flow and the components will work.

A circuit needs a source of electricity such as a battery to work.

Switches can be used to open or close a circuit.

A series circuit is where the components are part of a complete loop.

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

Metals make good electrical conductors.

Key Vocabulary

Electricity	The flow of an electric current through a material.
Appliances	A piece of equipment or device designed to perform a particular job such as a washing machine or mobile phone.
Mains Electricity	Electricity supplied through wires to a building.
Battery	A device that stores electrical energy as a chemical. Two or more cells joined together form a battery.
Circuit	A pathway that allows electricity to flow around. It is based around wires and a power supply.
Electrical Conductors	A material that allows electricity to flow through it.
Electrical Insulators	A material that does not allow electricity to flow through it.

Components

A component is a part of an electrical circuit. Symbols are often used to represent the components so they are easy to draw and recognise.

battery/cell



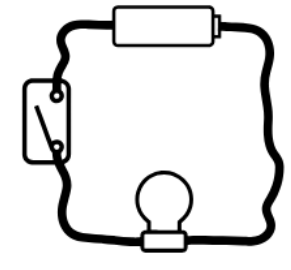
wire



bulb



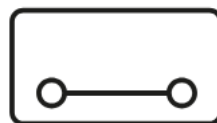
A circuit diagram is a simple line drawing that represents how the components in an appliance join together.



open switch



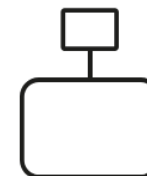
closed switch



buzzer

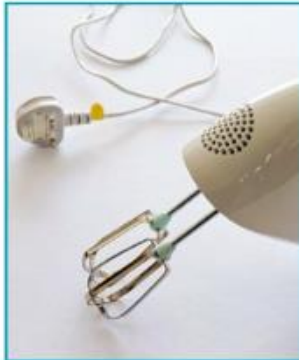


motor



Electrical appliances

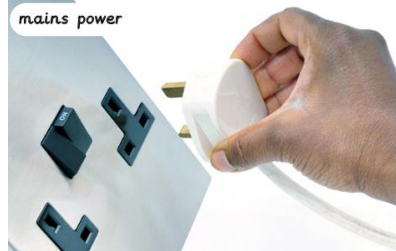
There are many examples of electrical appliances around us.



An electrical circuit is the pathway electrical charge flows around in an appliance.

- For a circuit to work, it must have:
- A power source.
- A complete pathway.
- A device or component, such as a bulb

power source - Something that transfers electrical energy to make an appliance work.

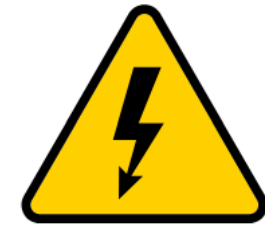


- Provides high power for larger appliances
- Access to an electrical socket is needed to use the appliance
- The appliance will be fixed in place



- Allows an appliance to be portable (move anywhere)
- Can use an appliance where there are no electrical sockets
- Batteries run out and need replacing
- Batteries are harmful and must not go to landfill

Electrical safety



- Do not use wet hands when using electrical appliances or switches
- Do not put anything other than a plug in an electrical socket
- Let an adult know if electrical appliances or wires appear damaged
- Do not leave electrical wires across the floor or hot surfaces

Key Questions

Setting up practical investigations

Using equipment safely

Using results to draw simple conclusions