

**Key Vocabulary**

**mains**  
The electricity supplied to households from power stations

**plugged in**  
To connect a device to a power source.

**battery**  
A battery is a collection of cells.

**circuit**  
A closed loop that allows an electric current to flow through it:

**short circuit**  
When the current going through wires does not travel the correct path of the electrical current.

**connect**  
To join two or more components of an electrical circuit so that an electric current can flow between them.

**disconnect**  
To stop or end the supply of electricity to a device or piece of equipment.

**terminal**  
A terminal is the point at which a conductor from a component, device or network comes to an end.

**positive/ negative**  
A type of electrical charge.

**switch**  
Can be added to a circuit to turn a component on or off. It allows the electricity to flow or it stops it.

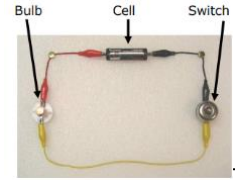
**conductor**  
Material that allows electricity to pass through.

**insulator**  
Material that does not allow electricity to pass through it.

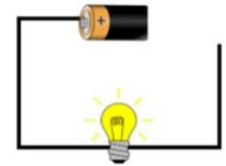
**electron**  
Tiny negative particles that are pushed from a battery to create an electric current.

**filament**  
A thin conducting wire forming part of a bulb.

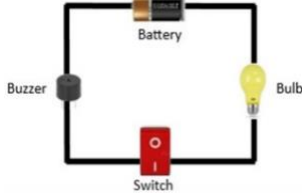
**Electrical circuits**



The switch opens and closes the circuit. The bulb lights because the switch is closed.



This circuit will not work as it is not complete.

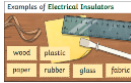


This circuit is complete so the buzzer will sound and the bulb will light.

**Conductors and insulators**



Some materials let electricity pass through them easily. These are known as electrical conductors. Many metals are good electrical conductors, such as iron, copper and steel.



Some materials do not allow electricity to pass through them. They are known as insulators. Plastic, wood, rubber and glass are good electrical insulators

**Important Knowledge**

*Mains-powered*



*Battery-powered*



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.

There are two types of electric current:



**Mains electricity:** power stations send an electric charge through wires to transformers and pylons. Then, underground wires carry the electricity into our homes via wires in the walls and out through plug sockets.



**Battery electricity:** batteries store chemicals which produce an electric current. Eventually, even rechargeable batteries will stop producing an electric current

**Electrical Safety**



Electricity can be dangerous if not used properly. It can cause shocks, burns and even death. There are electrical dangers both in the home and outdoors.



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