



Key Vocabulary

Word	Definition	 / 
Appliance	A machine or device that runs on electricity.	
Battery	A container of one or more cells as a source of power.	
Bulb	Part of electric lamps which make light when electricity passes through.	
Buzzer	Electrical device that is used to make a buzzing sound when powered.	
Cell	Single energy source that converts chemical/solar energy into electricity.	
Circuit	A complete path that an electrical current can flow around. These are made of a cell or battery connected to another component using wires.	
Circuit Diagram	A visual representation of an electrical circuit using symbols to represent the electrical components.	
Component	A part that goes with others to form a circuit, e.g. bulb, motor buzzer	
Conductors	Objects that allow electricity to flow through it easily, e.g. metal objects.	
Current	The amount of electricity flowing through a circuit. Measured in Amps.	
Electricity	A form of energy used for lighting, heating, machines and making sound.	
Energy	The power to 'do work' that comes from sources like electricity.	
Insulators	Objects that do not allow electricity to flow through it easily, e.g. rubber	
Mains Electricity	Where the supply of electricity enters a building and is ready to use. This electricity usually comes from a power station.	
Motor	A device that uses electricity or fuel to make something move.	
Static	An electrical charge that doesn't move. Usually friction generates this.	
Switch	Electrical component that makes or breaks electrical currents in a circuit to turn it on or off. Remember , only complete circuits let electricity flow.	
Voltage	Volts are a measure of the energy in a flow of electricity.	
Wires	Long thin pieces of metal used to connect components and carry an electrical current around a circuit.	

Remember: •Electrical circuits can only every work when the circuit has no gaps or breaks in it.
•Some materials are better than others to allow electricity to pass through them.

Working Scientifically

- Asking relevant questions and using different types of scientific enquiries to answer them.
- Making systematic and careful observations.
- Gathering, recording, classifying and presenting data in various ways to answer questions.
- Recording findings and predictions.
- Using results to draw simple conclusions, make new predictions and raise further questions.
- Setting up simple practical enquiries, comparative and fair tests.

Previous Knowledge

In Year 1, you learnt to:

- Distinguish an object from its material.
- Identify various everyday materials and describe their physical properties.

In Year 2, you learnt to:

- Compare the suitability of everyday materials for particular uses.
- Find out how the shapes of some solid objects can be changed.

Which appliances run on electricity?

Common appliances that use electricity are: toasters, lamps, kettles, laptops, games consoles, phones, torches, TVs, washing machines and irons.

Some appliances use batteries and some use mains electricity.

Batteries can vary greatly in size, shape and power.



What are electrical conductors and insulators?

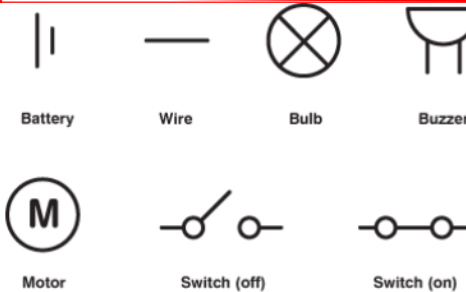
An electrical conductor lets electricity pass through it. They are often metal (e.g. iron, copper and gold) but also include carbon and water. As our bodies are 18% carbon, electricity is very dangerous to us and because water is a very good conductor of electricity we mustn't use electrical appliances near it!

An insulator doesn't let electricity pass through it, e.g. wood, leather and plastic. Plastic is used to cover electrical wires because it is a good insulator.

Electrical Conductors



Electrical Insulators



Key Questions

- What objects are powered by batteries?
- What objects are powered by mains electricity?
- How can I make a working electrical circuit?
- How can I draw a diagram of my electrical circuit?
- How do switches in a circuit work?
- What is an insulator?
- What materials are effective insulators?
- How are plugs wired on the inside?
- Can electricity flow in both directions or just one way?
- What happens if a circuit is not fully connected? Why?
- What happens if I add more bulbs or other appliances to a circuit without adding more cells/batteries?

