ELECTRICITY

Key Knowledge

You already know:

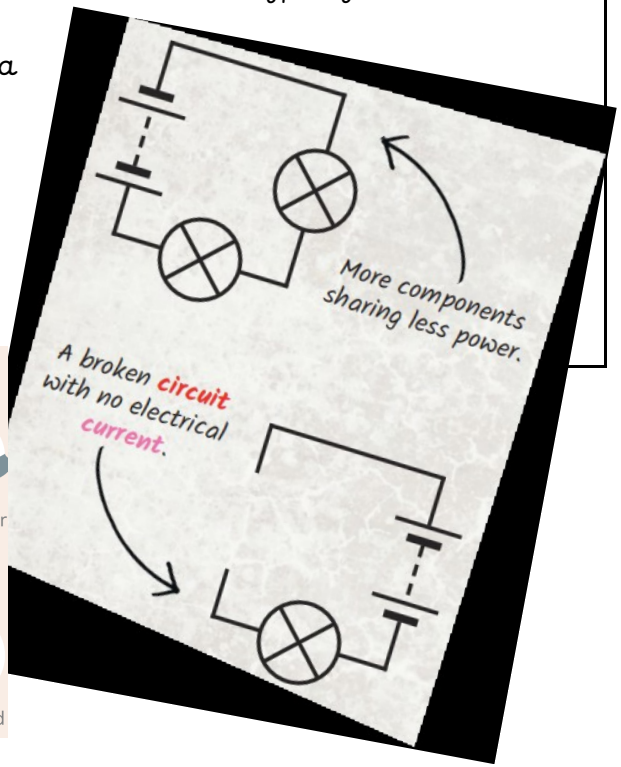
- How to identify common appliances that run on electricity;
- How to construct a simple series electrical circuit;
- Identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers;
- Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery
- Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit
- Recognise some common conductors and insulators, and associate metals with being good conductors

You will learn:

- How to associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit
- How to compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches
- How to use recognised symbols when representing a simple circuit in a diagram

Key questions

- What will make a bulb brighter or a buzzer louder?
- What happens when a circuit is broken?
- What will happen if the voltage is too high?
- How can you protect a component from breaking if the voltage is too high?
- How do measure an electrical current?
- Do all batteries push as hard as each other?
- How does the voltage of a battery affect how much current is pushed?
- How does the number of bulbs affect the brightness of a bulb?
- Are all types of wires as good at conducting electricity?
- Why are wires insulated in plastic? Does the type of material make a difference?
- Does the length of wire make a difference?
- Does the type of circuit affect How the components work/long the battery lasts?
- What renewable ways can we generate electricity?



Key vocabulary	
Amps/amperes	The base unit used to measure electrical currents.
Battery	A device that stores chemical energy and converts it to electrical energy.
Bulb (indicator)	The glass part of an electric lamp, which gives out light when electricity passes through it.
Buzzer	An electrical device that is used to make a buzzing sound for example, to attract someone's attention.
Brightness	The luminous intensity per unit projected area of the surface in a given direction.
Cell	A device, which converts chemical energy into electrical energy
Component	Any part of an electric circuit.
Diagram	A simplified graphical representation of an electrical circuit.
Function	To serve a certain purpose.
Fuse	A device having a metal wire or strip that melts and interrupts an electrical circuit when the current becomes too strong.
Insulator	Materials that do not allow electricity to pass through them.
Lamp	A device for producing light (bulb).
Motor	Converts electrical energy into physical movement
Series circuit	Consists of a single pathway through which electricity can flow.
Switch	A device for making or breaking an electric circuit, or for selecting between multiple circuits.
Symbol	A graphical representation of basic electrical and electronic devices or components.
Voltage	The pressure from an electrical circuit's power source that pushes charged electrons (current) through a conducting loop, enabling them to do work such as illuminating a light.
Volts	The Standard International (SI) unit of electric potential or electromotive force.

Key knowledge

Components of a circuit and their symbols