



Knowledge you already have

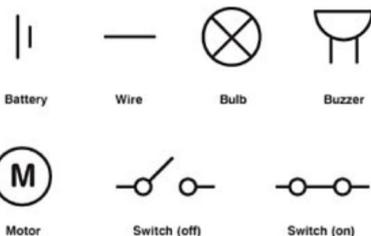
In Year 4:

- I identified common appliances that run on electricity.
- I constructed a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.
- I identified 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.
- I recognised that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.
- I recognised some common conductors and insulators, and associate metals with being good conductors.

New Knowledge

During this unit:

- I will associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.
- I will 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.
- I will use recognised symbols when representing a simple circuit in a diagram.



Future Knowledge

In KS3, I will study:

- Electric current, measured in amperes, in circuits; series and parallel circuits; currents add where branches meet and current as flow of charge.
- Potential difference, measured in volts, battery and bulb ratings; resistance, measured in ohms, as the ratio of potential difference (p.d.) to current.
- Differences in resistance between conducting and insulating components (quantitative).
- Static electricity.

Scientific Enquiry

In this unit, I will answer scientific questions by using:
Comparative and fair tests

- I will design and carry out fair tests exploring changes in circuits to measure e.g. the brightness of bulbs, the speed of motors, the volume of buzzers.

Adding more cells to a complete circuit will make a bulb brighter, a motor spin faster or a buzzer make a louder sound. If you use a battery with a higher voltage, the same thing happens. Adding more bulbs to a circuit will make each bulb less bright. Using more motors or buzzers, each motor will spin more slowly and each buzzer will be quieter.

Turning a switch off (open) breaks a circuit so the circuit is not complete and electricity cannot flow. Any bulbs, motors or buzzers will then turn off as well. You can use recognised circuit symbols to draw simple circuit diagrams.

Battery/ Cell



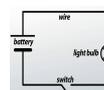
Source of energy. (In Year 4, cell was used for one and battery for a group of cells. In Year 6 either term can be used).

Volts/ Voltage



Used to describe different batteries.

Circuit



A combination of individual electronic components connected together by conductive wires through which electricity can flow.

Circuit symbol



Circuit symbols are used in circuit diagrams showing how a circuit is connected together.

Switch



A device for making, breaking, or changing the connections in an electrical circuit