

Science Knowledge Organiser - Year 6

Unit: How does the amount of components affect a circuit?

Key Vocabulary:

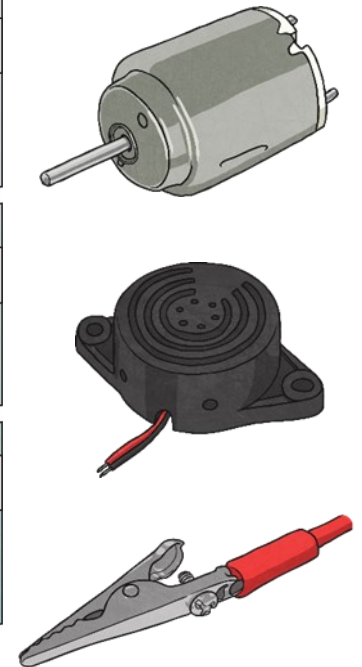
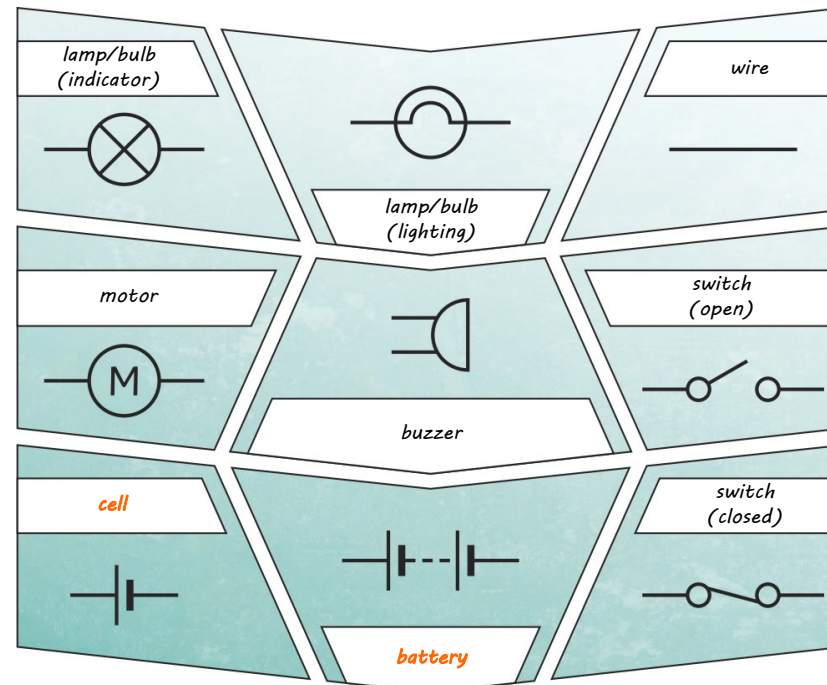
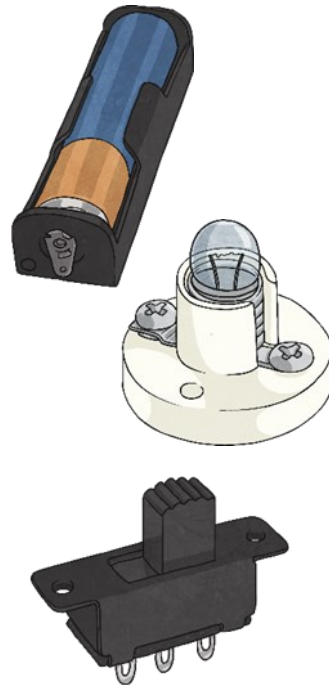
amp	<i>Amp</i> (short for ampere) is a unit which is used for measuring electric current.
battery/cell	A device that stores energy as a chemical until it is needed is known as a cell .
circuit	A circuit is a path that an electrical current can flow around.
component	A part or element of a larger whole is known as a component .
current	The flow of electrons, measured in amps, is known as the current .
electrons	Electrons are very small particles that travel around an electrical circuit.
resistance	Resistance is the difficulty that the electric current has when flowing around a circuit.
symbol	A symbol is a visual representation of something else.
voltage	Voltage is the force that makes the electric current move through the wires.

Science Skills:

- Use recognised symbols when representing a simple circuit in a diagram.
- Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.
- 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.
- Identify scientific evidence that has been used to support or refute ideas or arguments.
- Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.
- Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.
- Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms.

Key Facts:

- Electricity can only flow around a complete **circuit** that has no gaps.
- The greater the **voltage**, the more **current** will flow around a **circuit**.
- A **cell** is a single unit, whereas a **battery** is a collection of **cells**.
- Each **cell** has one positive and one negative electrode.
- An electrolyte is a chemical that reacts with the electrodes on a **cell** to produce an electrical **current**.

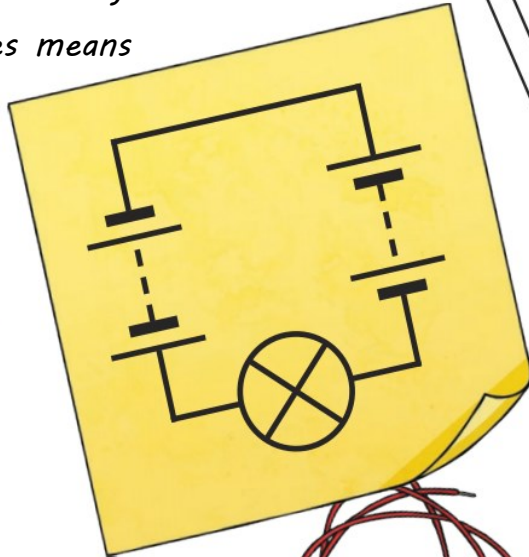


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Unit: How does the amount of components affect a circuit?

What will make a bulb brighter or a buzzer louder?

- More **batteries** or a higher **voltage** create more power to flow through the **circuit**.
- Shortening the wires means the **electrons** have less **resistance** to flow through.



What will make a bulb dimmer or a buzzer quieter?

- Fewer **batteries** or a lower **voltage** give less power to the **circuit**.
- More buzzers or bulbs mean the power is shared by more **components**.
- Lengthening the wires means the **electrons** have to travel through more **resistance**.

Series Circuit

This is a **circuit** that has only one route for the **current** to take. If more bulbs or buzzers are added, the power has to be shared and so they will be dimmer or quieter. If just one part of this series **circuit** breaks, the **circuit** is broken and the flow of **current** stops.

