

### Knowledge Organiser

Year Group	Subject	Topic
6	Science	Electricity

#### The Big Picture

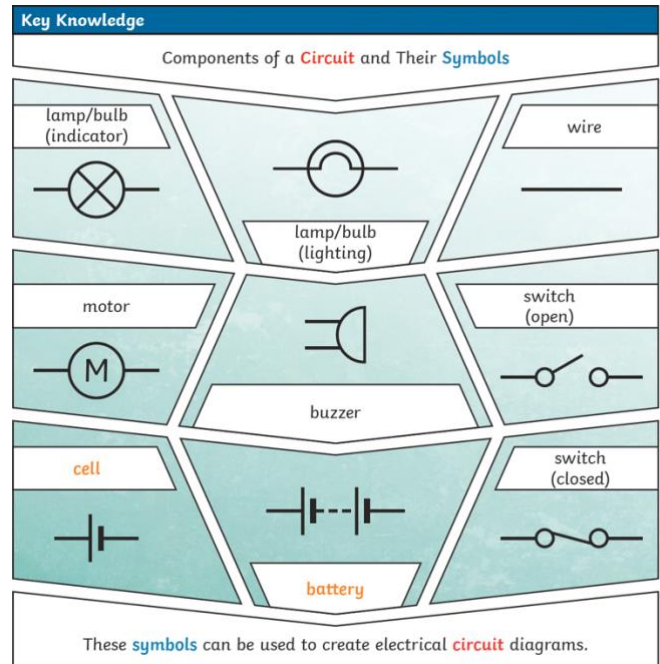
In Year 6, children will be guided through this practical unit by understanding how electrical circuits work. By understanding how much electricity flows through the circuit, children will understand what causes circuit breaks and how they can show them by drawing diagrams. Once they have obtained this knowledge, they will understand circuit variations, such as how to make a bulb brighter or dimmer depending on the number of cells or batteries.

The next step is for them to construct an experiment on constructing circuits depending on the different amounts of voltage used by planning, investigating and evaluating.

#### Enquiry Questions

Step 1: Construct and draw series circuits using symbols	Step 2: Complete and incomplete circuits
Step 3: Variations within circuits	Step 4: Plan - voltage experiment
Step 5: Investigate - voltage experiment	Step 6: Evaluate - voltage experiment

Key Vocabulary	
<b>circuit</b>	A path that an electrical current can flow around.
<b>symbol</b>	A visual picture that stands for something else.
<b>cell/battery</b>	A device that stores energy as a chemical until it is needed. A cell is a single unit. A battery is a collection of cells.
<b>current</b>	The flow of electrons, measured in amps.
<b>amps</b>	How electric current is measured.
<b>voltage</b>	The force that makes the electric current move through the wires. The greater the voltage, the more current will flow.
<b>resistance</b>	The difficulty that the electric current has when flowing around a circuit.
<b>electrons</b>	Very small particles that travel around an electrical circuit.



**Key Knowledge**

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**  
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.

More components sharing less power.

A broken circuit with no electrical current.

