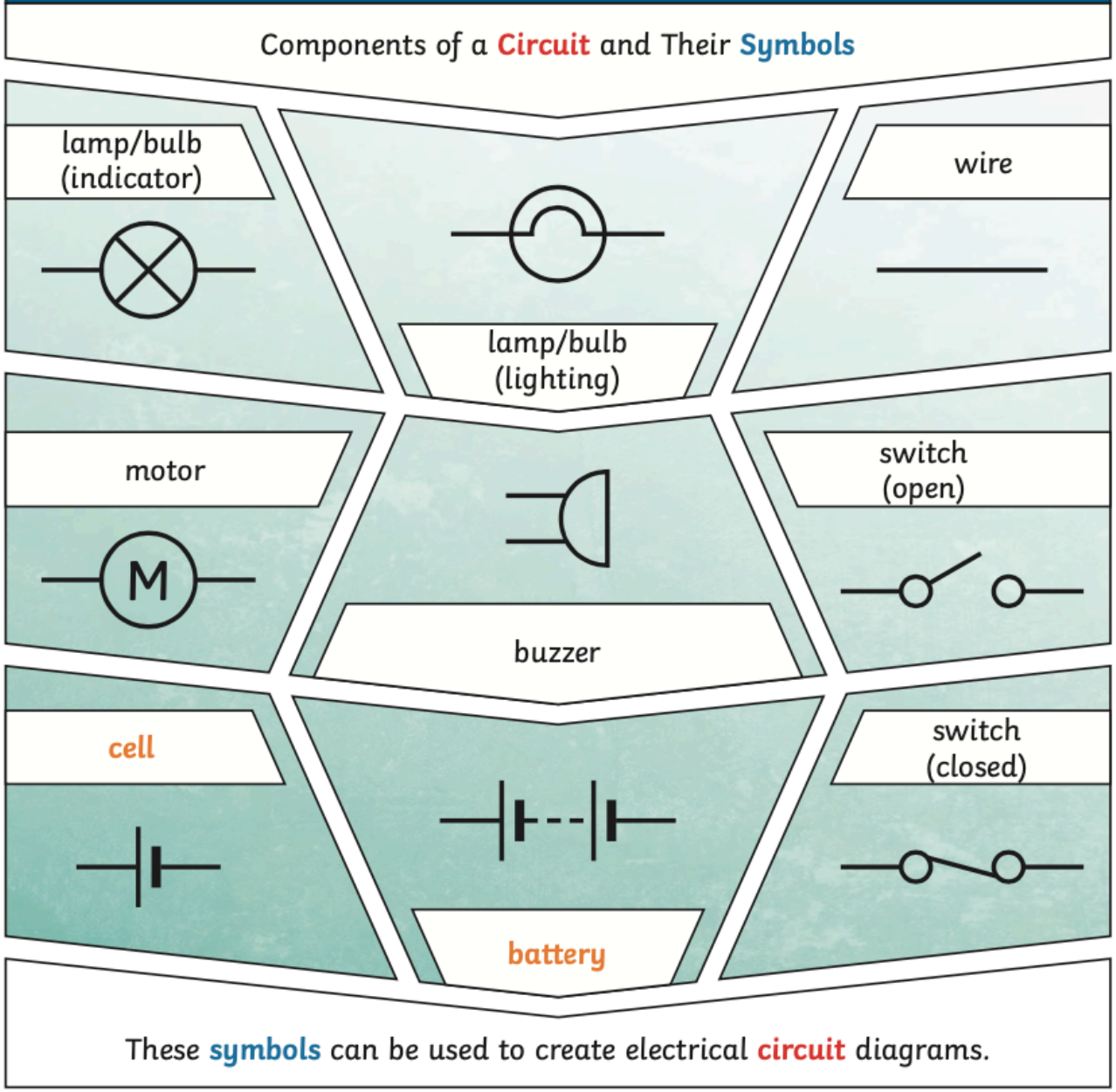
Electricity — Year 6

Key Vocabulary

circuit	A path that an electrical current can flow around.
symbol	A visual picture that stands for something else.
cell/battery	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.
current	The flow of electrons, measured in amps.
amps	How electric current is measured.
voltage	The force that makes the electric current move through the wires. The greater the voltage, the more current will flow.
resistance	The difficulty that the electric current has when flowing around a circuit.
electrons	Very small particles that travel around an electrical circuit.

To look at all the planning resources linked to the Electricity unit, click here.

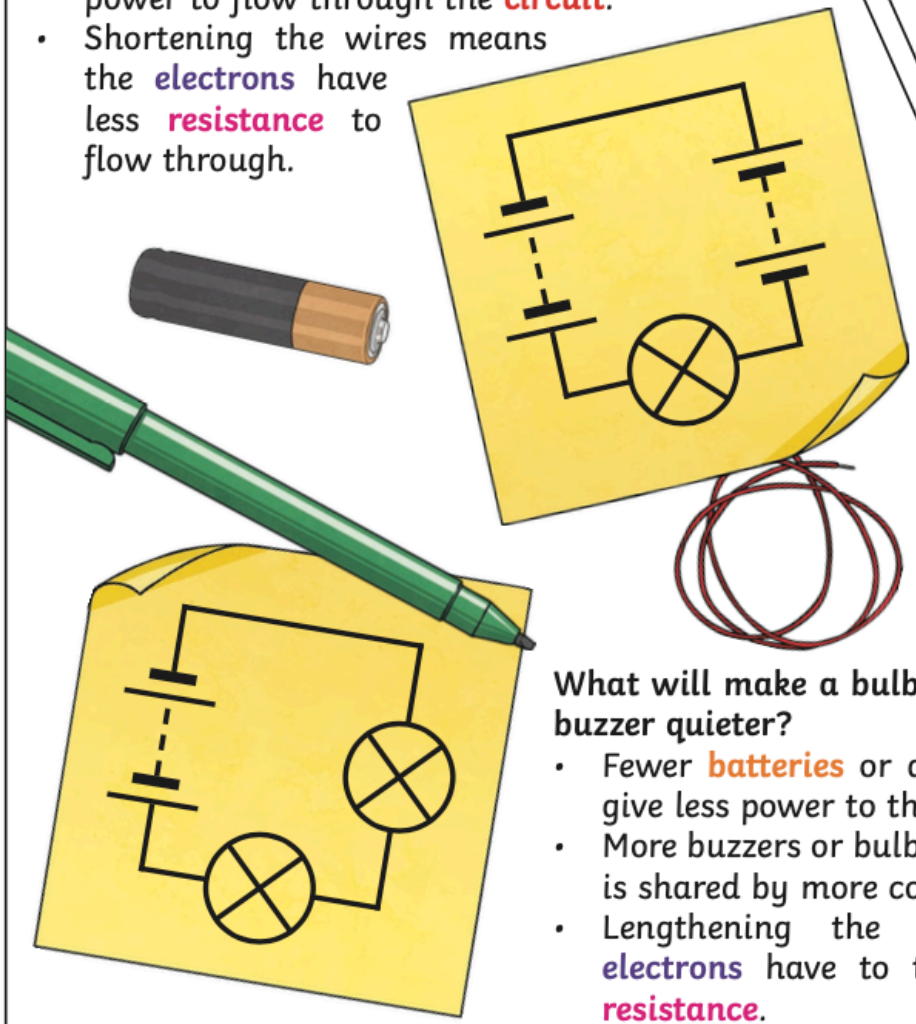
Key Knowledge



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.

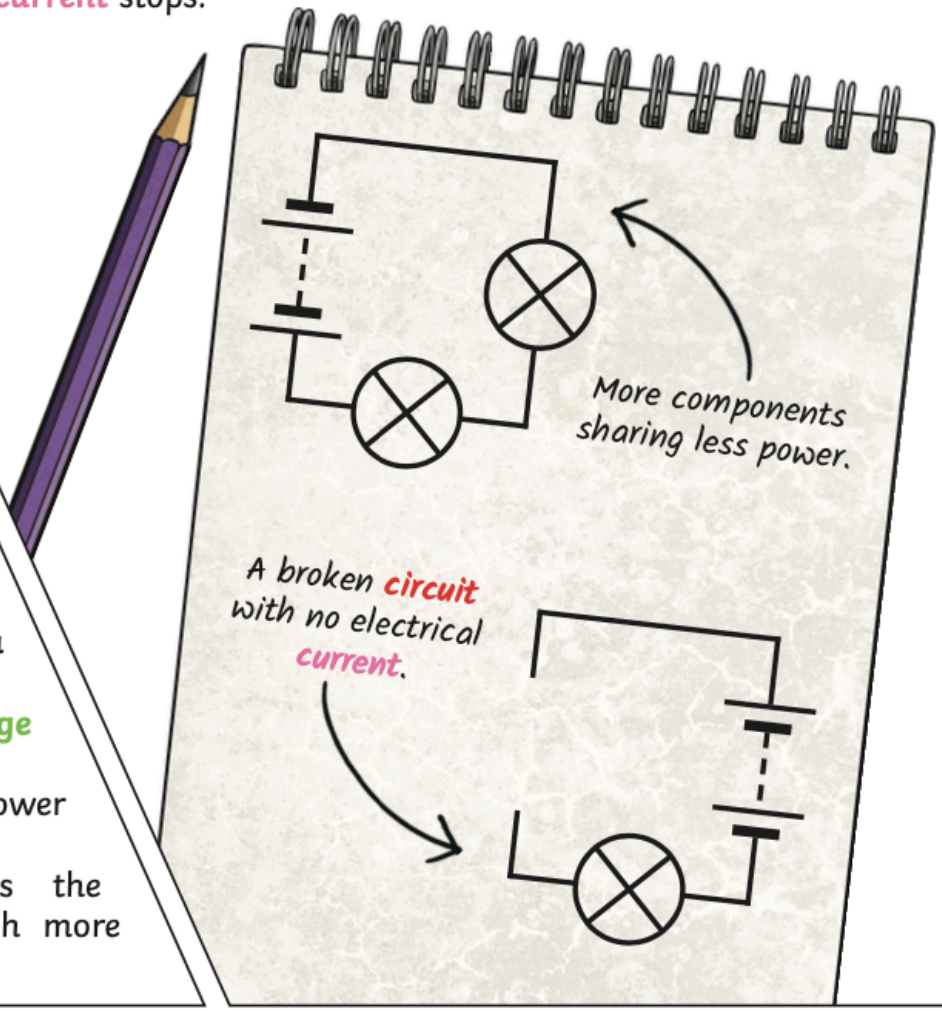


What will make a bulb dimmer or a buzzer quieter?

- 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.



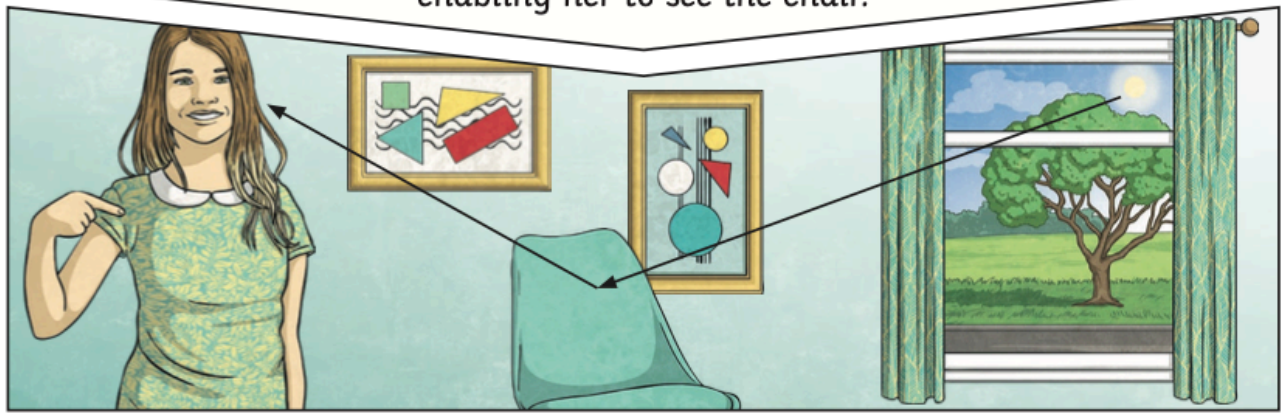
Light — Year 6

Key Vocabulary	
light	A form of energy that travels in a wave from a source.
light source	An object that makes its own **light**.
reflection	**Reflection** is when **light** bounces off a surface, changing the direction of a ray of **light**.
incident ray	A ray of **light** that hits a surface.
reflected ray	A ray of **light** that has bounced back after hitting a surface.
the law of reflection	The law states that the angle of the **incident ray** is equal to the angle of the **reflected ray**.

Key Knowledge

We need **light** to be able to see things. **Light** waves travel out from sources of **light** in straight lines. These lines are often called rays or beams of **light**.

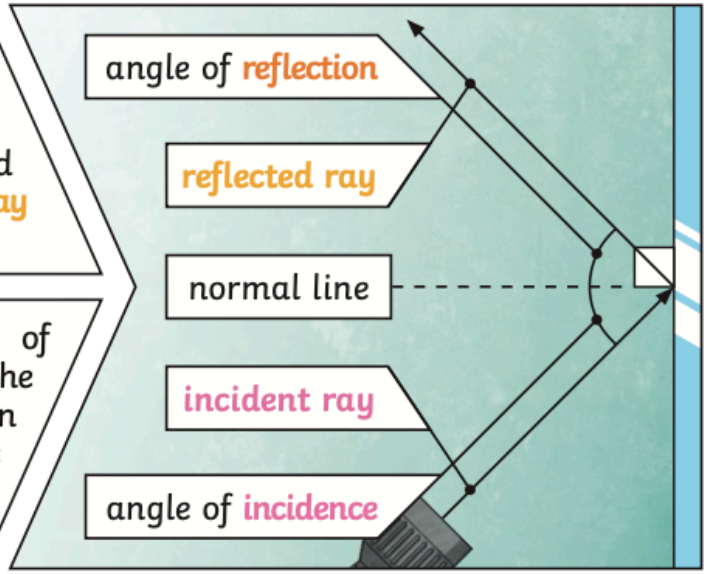
Light from the sun travels in a straight line and hits the chair. The **light** ray is then **reflected** off the chair and travels in a straight line to the girl's eye, enabling her to see the chair.



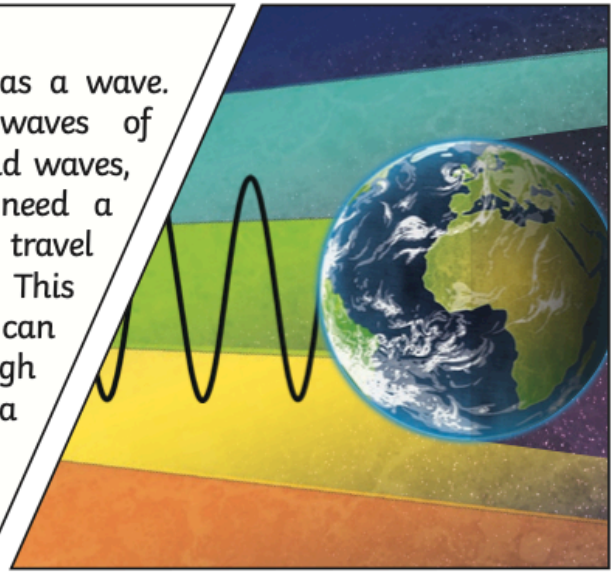
The law of reflection states that the angle of **incidence** is equal to the angle of **reflection**. Whenever **light** is **reflected** from a surface, it obeys this law.

The angle of **reflection** is the angle between the normal line and the **reflected ray** of **light**.

The angle of **incidence** is the angle between the normal line and the **incident ray** of **light**.



Light travels as a wave. But unlike waves of water or sound waves, it does not need a medium to travel through. This means **light** can travel through a vacuum - a completely airless space.



Light — Year 6

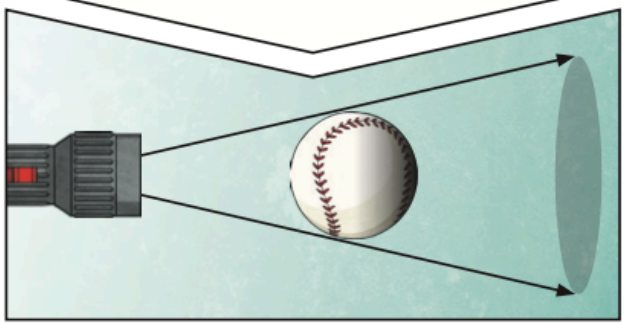
Key Vocabulary	
refraction	This is when **light** bends as it passes from one medium to another. E.g. **Light** bends when it moves from air into water.
visible spectrum	**Light** that is visible to the human eye. It is made up of a colour **spectrum**.
prism	A **prism** is a solid 3D shape with flat sides. The two ends are an equal shape and size. A **transparent prism** separates out visible **light** into all the colours of the **spectrum**.
shadow	An area of darkness where **light** has been blocked.
transparent	Describes objects that let **light** travel through them easily, meaning you can see through the object.
translucent	Describes objects that things let some **light** through, but scatters the **light** so we can't see through them properly.
opaque	Describes objects that do not let any **light** pass through them.

To look at all the planning resources linked to the Light unit, click here.

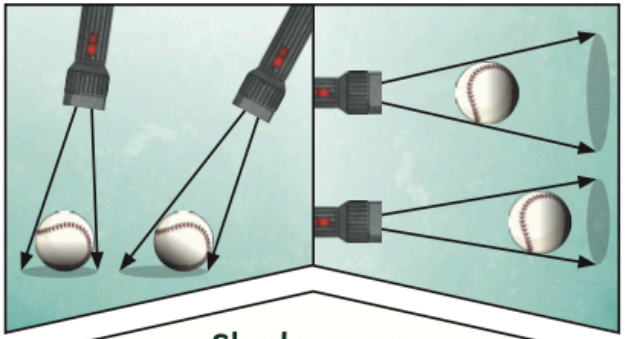
Key Knowledge

The spoon in this water looks as if it is bent. This is because **light** bends when it moves from air to water. When **light** bends in this way, it is called **refraction**.

A **shadow** is always the same shape as the object that casts it. This is because when an **opaque** object is in the path of **light** travelling from a **light source**, it will block the **light** rays that hit it, while the rest of the **light** can continue travelling.



Isaac Newton shone a **light** through a **transparent prism**, separating out **light** into the colours of the rainbow (red, orange, yellow, green, blue, indigo and violet) - the colours of the **spectrum**. All the colours together merge and make visible **light**.



Shadows can also be elongated or shortened depending on the angle of the **light source**. A **shadow** is also larger when the object is closer to the **light source**. This is because it blocks more of the **light**.