

# Science knowledge organiser: Light and electricity

## Light:

| 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. |

### Light sources

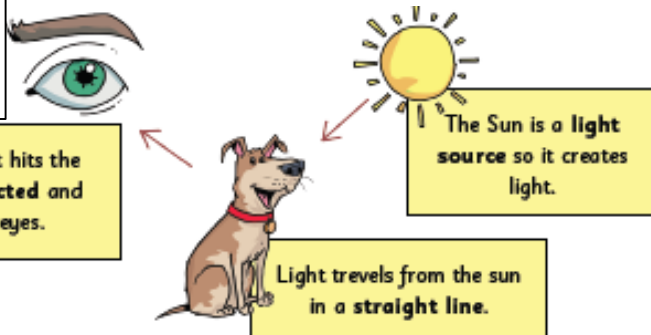
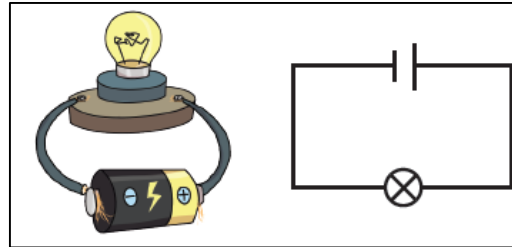
A **light source** makes light. The **Sun** and other **stars**, **fires**, **torches** and **lamps** all make their own light, so they are examples of sources of light.



FACT: A shadow is made when an object blocks the light.

When the light hits the dog, it is **reflected** and enters our eyes.

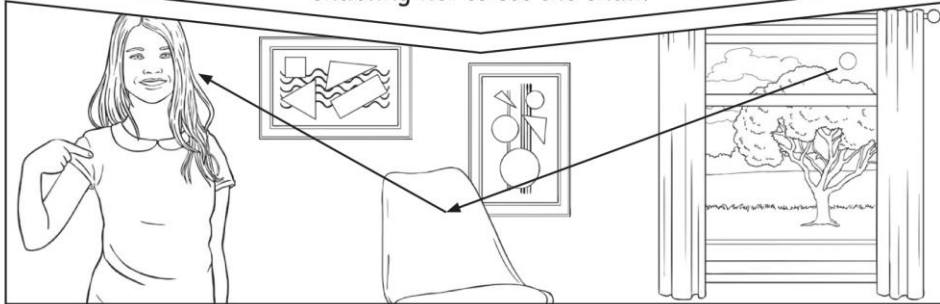
This is an example of a simple circuit which includes a power and light source:



### 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.



## Electricity:

### How is electricity made?

Electricity can be made using a simple **generator**. We could make one in school using a **magnet** and a **coil of wire**. If we turn a magnet around inside a coil of wire, it creates **electricity** in the wire. Doing this only makes a **small amount** of electricity so we need large generators to make enough for everyone. These generators are usually in **power stations**. There are **different types** of power stations.

### Key Vocabulary

**appliance** – a device or piece of equipment that has been made to perform a specific task

**battery** – a small item used to power small appliances

**circuit** – a route through which electricity flows

**components** – the parts of a circuit

**conductor** – allows electricity to flow through it

**electrical** – something that uses electricity to work

**insulator** – doesn't allow electricity to flow through it

**mains power** – electricity provided by power stations

**portable** – can be easily carried around

**pylon** – a tower used for keeping electrical wires above the ground

|                 |      |      |                   |                   |       |        |
|-----------------|------|------|-------------------|-------------------|-------|--------|
|                 |      |      |                   |                   |       |        |
| battery or cell | bulb | wire | open switch (off) | close switch (on) | motor | buzzer |