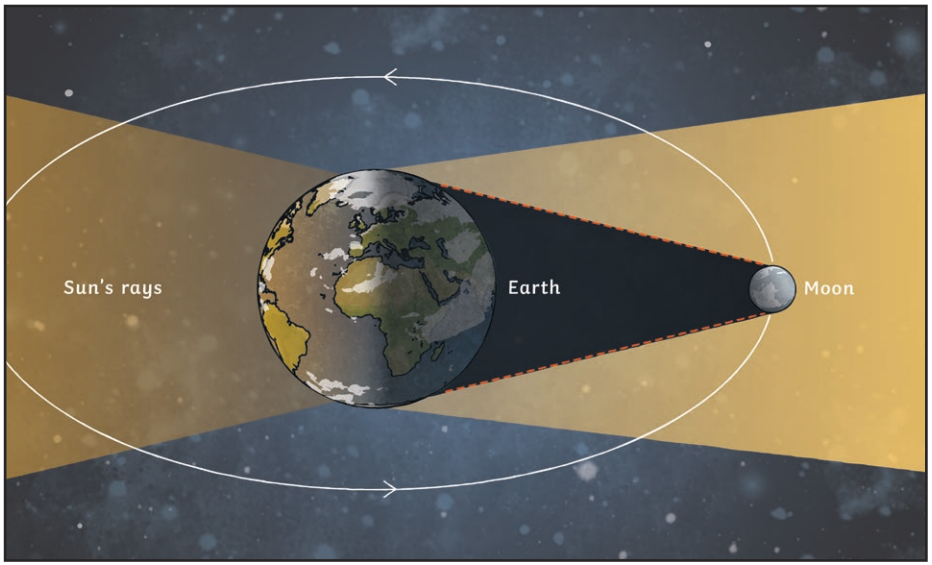
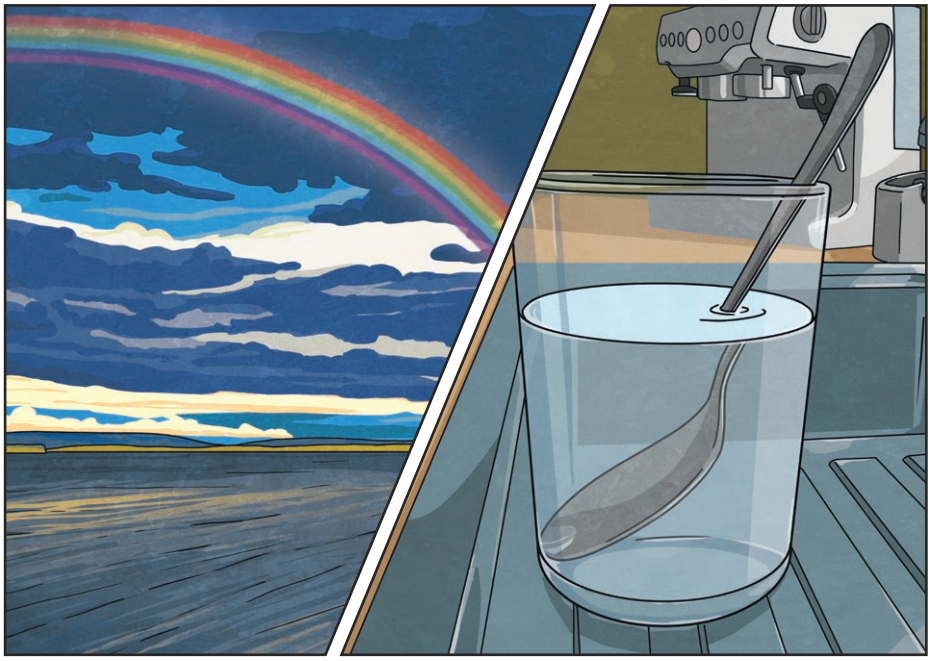
Key Vocabulary Overview

light source	an object or device that emits light
luminous	describes an object that emits light
eye	an organ that receives light and visual images
retina	a layer at the back of the eye that sends signals to the brain
pupil	the black area in the centre of the eye
iris	the coloured part of the eye that expands and contracts to control the size of the pupil
lens	a structure behind the iris that focuses light onto the retina a curved piece of material that refracts light

reflection	occurs when light bounces off an object
ray diagram	a type of diagram showing the path that light travels along
angle	the measure of the turn between one line and another
periscope	a device that uses mirrors to see around corners
shadow	the dark area caused by an object blocking the path of light
opaque	describes a material that light cannot travel through
translucent	describes a material that allows some light to travel though
transparent	describes a material that all light can pass through
refraction	when light changes direction as it passes from one medium to another
medium	a substance that transfers or carries light from one place to another
rainbow	caused by the refraction of light through a medium
prism	used to refract light

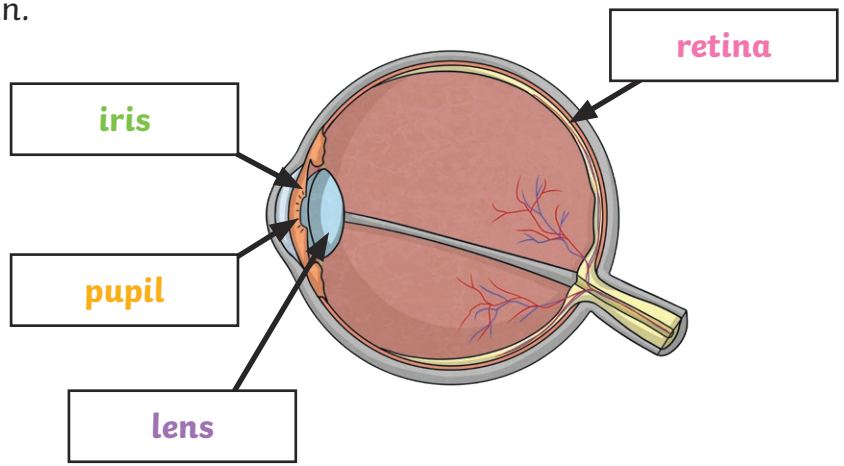
Key Vocabulary Overview	
solar eclipse	an event during which the Sun's light is blocked by the Moon
independent variable	the one thing you change in an investigation
dependent variable	what you measure in an investigation
controlled variable	what you keep the same in an investigation
conclusion	what you have found out from your enquiry
evaluation	how well the enquiry worked and how it could be improved
coloured filter	a translucent material that filters out some of the colours in white light
spectrum of light	the colours visible when light passes through a prism





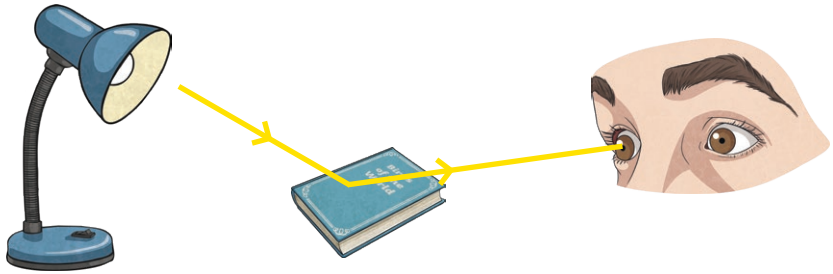
The Eye

The human **eye** is an organ that receives light and focuses it so that it can be interpreted into visual information by the brain.



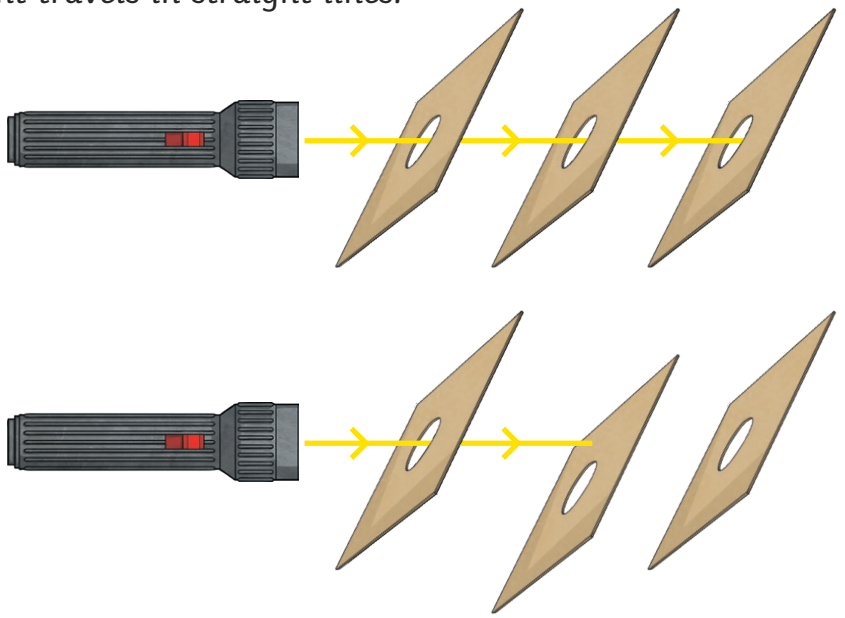
How Do We See?

Light travels in a straight line until it is **reflected** by an object. Some of the reflected light then enters the **eye** so we can see the object. **Ray diagrams** illustrate this, indicating the path of light.



How Does Light Travel?

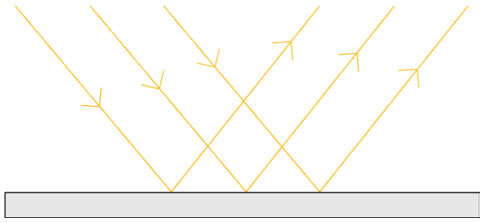
Light travels in straight lines.



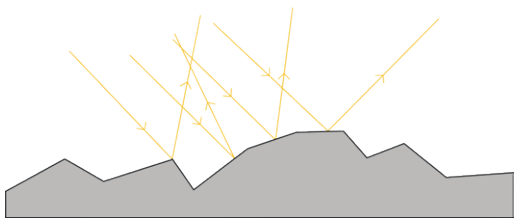
Reflection

When light bounces off an object, it does so at the same **angle** that it hit the object.

smooth surface

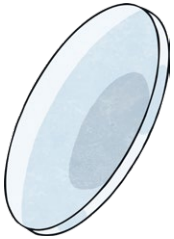


uneven surface

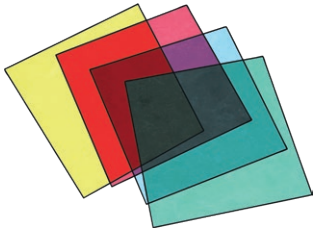


Transparency

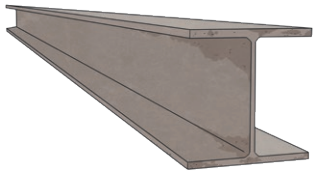
Light can travel through **transparent** materials.



Some light can travel through **translucent** materials.

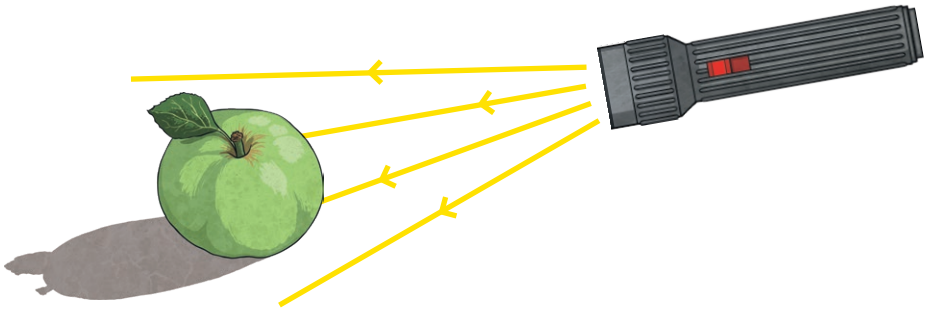


Light cannot travel through **opaque** materials.



Shadows

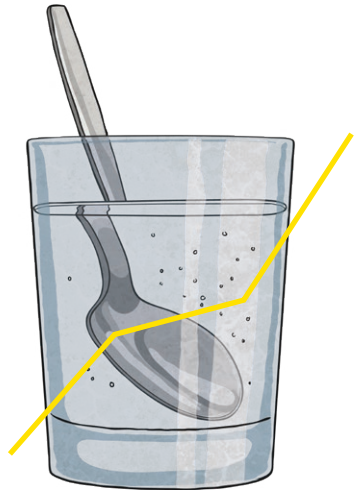
Shadows are areas of darkness that occur when light is blocked by an object.



How can you change the shape and size of a **shadow**?

Refraction

Light can travel through a **transparent** **medium**, such as water. When light reaches another **medium**, it changes speed and direction. This is why some objects look strange when they are behind glass or in water.



Spectrum of Light

White light contains many colours. When it passes through a **prism**, each colour is **refracted**, creating a **rainbow** on the other side.

A **rainbow** is a natural example of **refraction**.