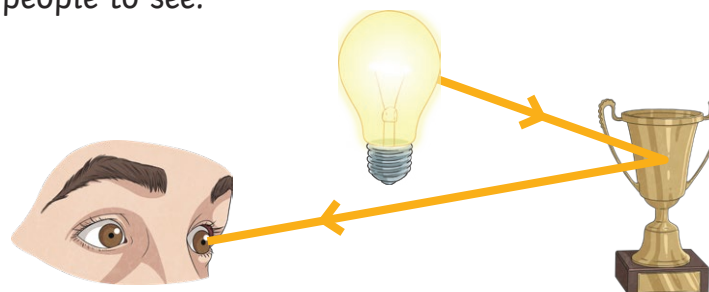


Key Vocabulary

light	Light is a form of energy that makes vision possible.
dark	Darkness is the absence of light .
reflection	Reflection is the bouncing back of light when it hits a surface.
shadow	A shadow is a dark area created when an object blocks light between a light source and a surface.
reflective	' Reflective ' describes a surface that reflects most of the light that hits it.
light source	A light source is an object that emits light , such as the Sun or a lightbulb.
colour spectrum	The colour spectrum is the range of colour visible to the human eye, which can be seen when light is refracted through a prism.
reflect	To reflect is to bounce back light or another form of energy when it hits a surface.
refract	To refract is to change the direction of light as it passes through different materials.
visible spectrum	The visible spectrum is the portion of the light spectrum that is visible to the human eye.

Light and Vision

Light is needed for the eye to see things. It travels in straight lines from a **light source** and is **reflected** by objects in the environment. This **reflected light** then enters the eye, enabling people to see.

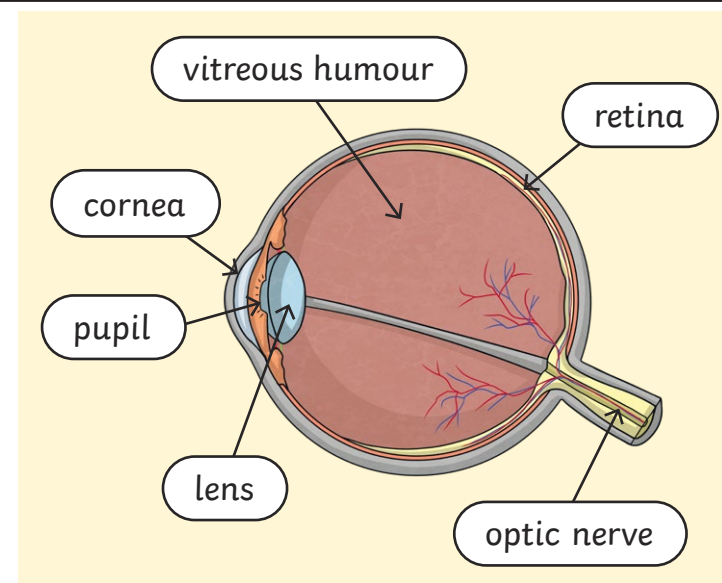


Light Sources

A **light source** can be either naturally occurring or human-made. Natural **light sources** include the Sun, lightning and bioluminescence. Artificial **light sources** include lightbulbs, electronic devices and fireworks.

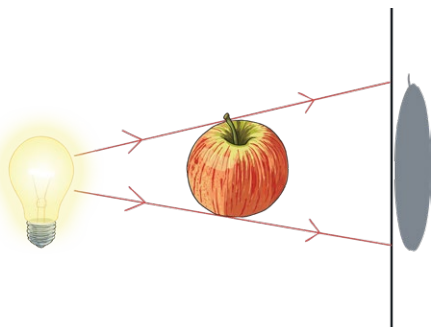
Inside the Eye

Once **light** enters the eye through the pupil, it is focused by the lens onto the retina at the back of the eye. The retina converts the **light** into electrical signals, which are carried by the optic nerve to the brain, where they are interpreted as visual images.



Shadows

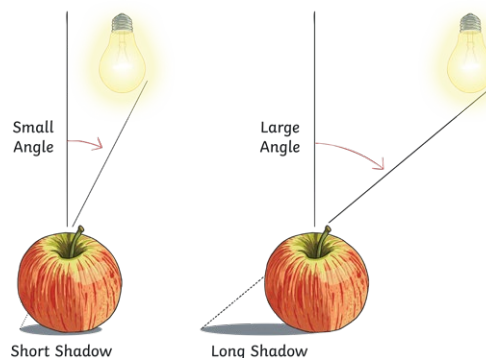
A **shadow** always takes on the shape of the object that casts it. Opaque objects block the path of **light** from a **light source**, creating a **dark** area behind the object.



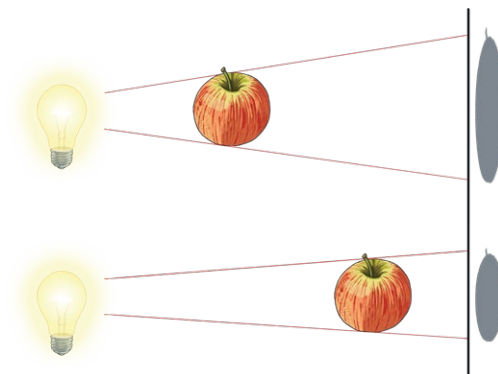
Changing Shadows

The angle and the size of a **shadow** can change, depending on a number of factors.

Changing the angle of the **light source** in relation to the object can cause the **shadow** to appear larger or smaller.



Changing the distance between the **light source** and the object can cause the **shadow** to appear larger or smaller.



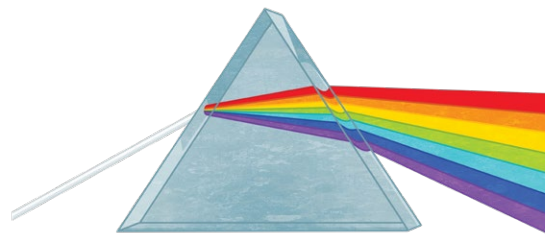
Refraction

Refraction occurs when the direction of **light** changes as it passes through different materials. We can see this when we observe a teaspoon in a cup of water; as **light** transitions from air to water, it bends slightly, causing the spoon to appear distorted or bent.



The Colour Spectrum

Visible **light** is made up of all the colours in the **visible spectrum**. When **light** passes through a prism, it separates into these individual colours: red, orange, yellow, green, blue, indigo and violet.



The Visible Spectrum

Humans can't see every colour of **light**. Ultraviolet and infrared light are invisible to the human eye. The colours of **light** that we can see are known as the **visible spectrum**.

