

**Umbrella question**

**How do we see our wonderful world?**

**Key Vocab**

Light	A form of energy that makes vision possible.
Dark	The absence of light.
Shadow	A dark area created when an object blocks light between a light source and a surface.
Reflection	The bouncing back of light when it hits a surface.
Colour Spectrum	The range of colour visible to the human eye, which can be seen when light is refracted through a prism.
Refract	To change the direction of light as it passes through different materials.

**Hinge questions**

Where does light come from?

How do eyes work?

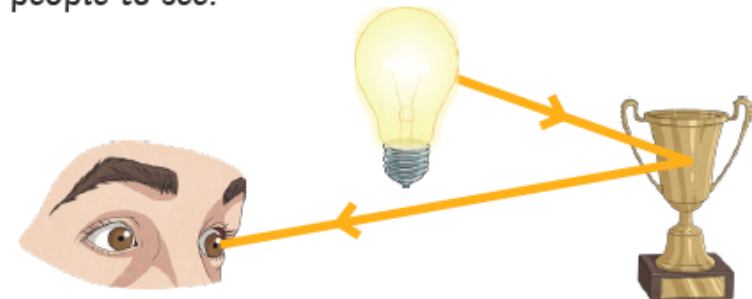
How do mirrors work?

Why do shadows change size?

Why are objects different colours?

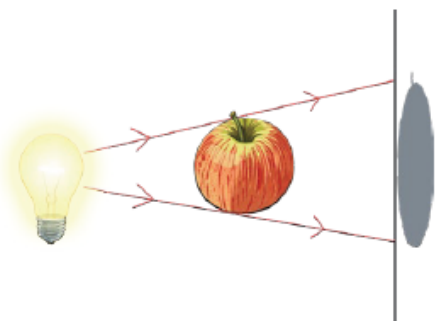
**Light and Vision**

**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.



## Shadows

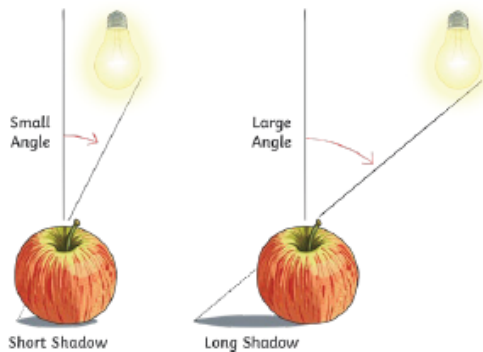
A **shadow** always takes on the shape of the object that casts it. Opaque objects block the path of **light** from a **light source**, creating a **dark** area behind the object.



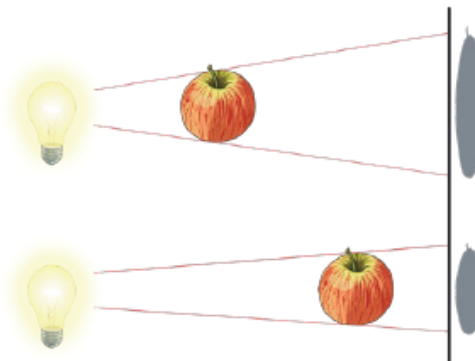
## Changing Shadows

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.

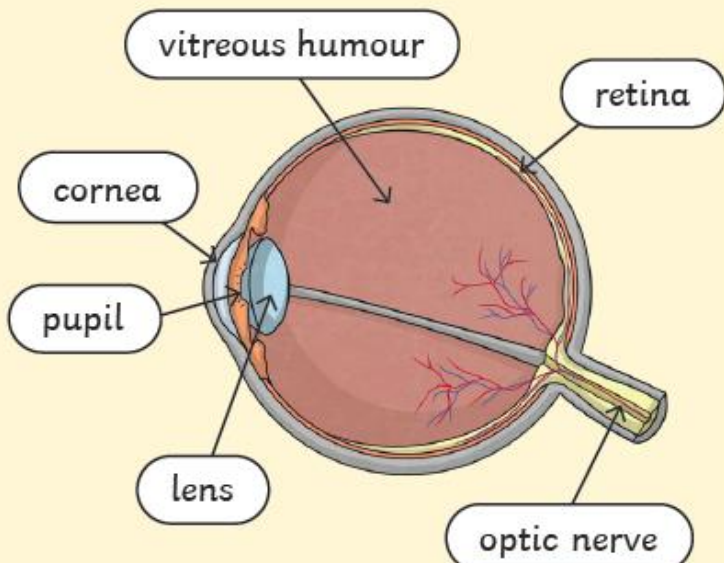


Changing the distance between the **light source** and the object can cause the **shadow** to appear larger or smaller.



## 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.



## 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.

