Light

Why do shadows form?

Light travels in straight lines.

A shadow forms because the object blocks the light rays and prevents them from passing through the object.

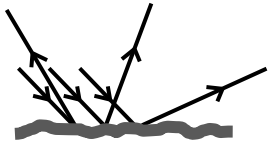
The shadow that forms will be the same shape as the object that casts it. Ray diagrams explain how shadows form.

Reflection

When light bounces off the surface of an object, this is called reflection.

On a flat surface, all light meeting a surface from one direction will be reflected in the same direction. This is known as **specular reflection.**

On a rough surface, light will be reflected in all directions. This is known as **diffuse reflection.**



Other vocabulary

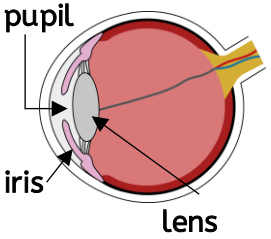
long-sighted (adjective): Being able to see things that are far away clearly, but not things that are near.

short-sighted (adjective): Being able to see things close to you clearly, but not things that are far away.

The eye

Light enters the eye through the **pupil**.

The size of the pupil – and so how much light can enter – is controlled by the **iris**, which is the coloured part of the eye.



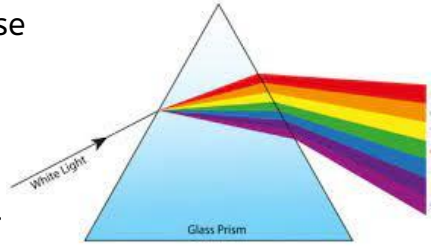
As the iris gets bigger, the pupil gets smaller.

Light is focused onto the back of the eye by the **lens**, which is a transparent disc.

Colour vision

Humans can see in colour because white light is made up of a **spectrum** of colours.

We can see these colours if we pass white light through a prism.



A coloured object appears coloured because it **reflects** that light and **absorbs** the others.

Black objects **absorb** all light and white objects **reflect** all light.