

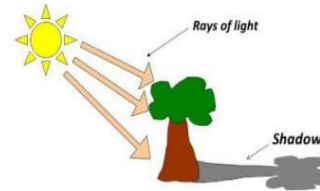
How does the idea that light travels in straight lines help us to explain our observations?

Key questions:

- What is light and how does it behave?
- How are shadows formed and changed?
- How do our eyes work?
- How are rainbows made?

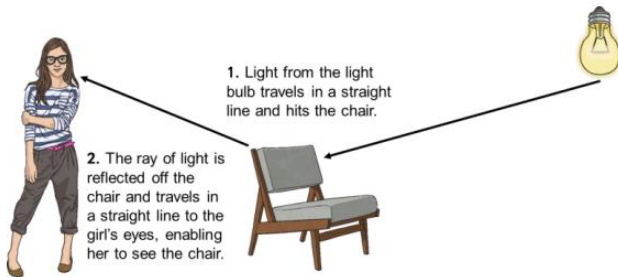
Shadows

Because **light** travels in **straight lines**, when there is an **opaque** object blocking it, a **shadow** is formed.



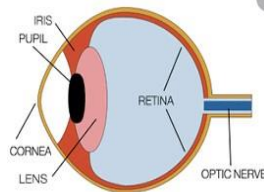
How do we see?

Light travels in straight lines. When light hits an object, it is reflected (bounces off) and enters our eyes. This is how we see the object. Rays of light travel from a light source and hit objects around us. The rays of light reflect, or bounce off an object, and then travel into our eyes. This reflection of light allows us to see the object.

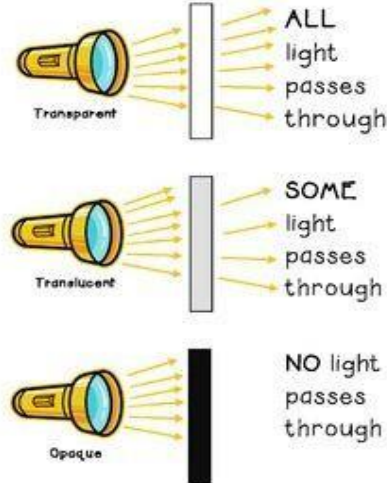


Parts of the eye:

Light enters the eye through the pupil. The iris helps the pupil change size depending on how bright the light is. The retina turns the light into signals the brain understands. The optic nerve carries this information to the brain.

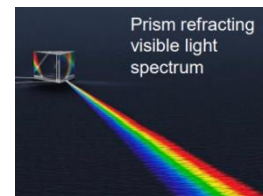


Translucent, Transparent & Opaque



Spectrum of light

Light is made of many different colours (white light), known as the **spectrum**. When light hits an object, some of the colours are absorbed by the object and some are **reflected**. This enables us to see objects in different colours.



Key Vocabulary:

dark	The absence of light.
light	A source of energy that makes things visible.
light source	An object that makes its own light.
opaque	Describes objects that do not let any light pass through them.
prism	A prism is a solid 3D shape with flat sides. The two ends are an equal shape and size. A transparent prism separates out visible light into all the colours of the spectrum.
reflection	Reflection is when light bounces off a surface rather than being absorbed, changing the direction of a ray of light.
refraction	This is when light bends as it passes from one medium to another. E.g. light bends when it moves from air into water.
shadow	An area of darkness where light has been blocked.
spectrum	a band of colours, as seen in rainbows, produced by separation of the components of light by their different degrees of refraction.
straight lines	Light travels in waves from a light source in straight lines.
translucent	Describes objects that let some light through, but scatters the light so we can't see through them properly.
transparent	Describes objects that let light travel through them easily, meaning you can see through the object.