

Autumn 1— What is special about light?

Key information

Light travels as a wave, but unlike sound waves or waves of water, it does not need a medium to travel through. This means that light can travel through a vacuum— a completely airless space.

Sir Isaac Newton (1642-1726) was a British scientist and mathematician. He is well known for his work on gravity and light, prisms and the colour spectrum.

Light is electromagnetic waves that can be detected by the human eye.

Visible light can be seen by humans; however, there are other types of light that humans cannot see (such as: radio waves, x-ray, infrared light and UV light).

Colour is due to objects absorb and reflect light differently. A lemon reflects yellow light, all the other colours are absorbed and not seen by our eyes.

The Newton Prism Experiment—where Sir Isaac Newton was the first to prove that white light is made up of all the colours that we can see. He did this by shining a ray of light into a prism and created the colour spectrum.

Key vocabulary

Reflection	The process where light hits the surface of an object and bounces back in to our eyes.
Reflect	To bounce off.
Reflective	A word to describe something which light reflects well.
Incident ray	A ray of light that hits the surface.
Reflected ray	A ray of light that has bounced back after hitting a surface.
The law of reflection	The law states that the angle of the incident ray is equal to the angle of the reflected ray.
Refraction	When light bends as it passes from one medium to another (for example, light bends when it moves from air to water).
Visible spectrum	Light that is visible to the human eye is made up of the colour spectrum.
Colour spectrum	The colours of the rainbow—red, orange, yellow, green, blue, indigo and violet.
Prism	A solid 3D shape with flat sides. Two ends are an equal shape and size. A transparent prism separates light in to all the colours of the spectrum.
Shadow	An area of darkness, where light has been blocked.
Opaque	Describes objects that do not let any light pass through them.
Translucent	Describes objects that let some light through but scatter the light so we can't see them properly.
Transparent	Describes objects that let light through them easily.
Absorb	To 'take in' or 'soak up'.

Key Diagrams

