

Light

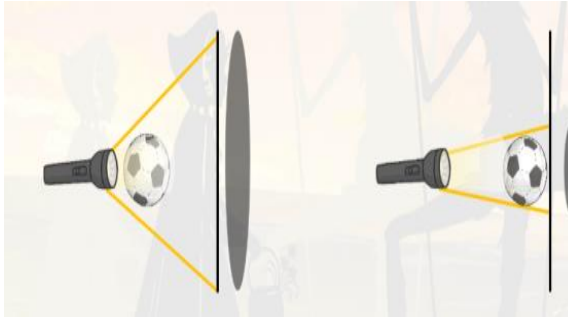
Year 5/6

What is a Shadow?

A shadow is created when an opaque material or object is placed in front of a light source and prevents the light from passing through. It creates a dark area or shape on a surface as a result.



Light can only travel in straight lines. A shadow is formed when an opaque object blocks the light rays. Shadows can change depending on the position of the light source.

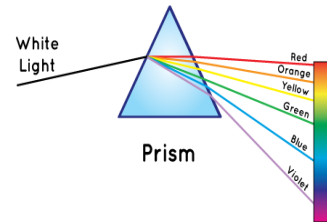


The closer to the light source an object is, the bigger the shadow will be. This is because the object blocks more of the light. The further away from the light source an object is, the smaller the shadow will be. This is because the object blocks less of the light.

A spoon in water looks as if it is bent. This is because light bends when it moves from air to water. When light bends in this way, it is called refraction.



Isaac Newton shone a light through a transparent prism, separating out light into the colours of the rainbow (red, orange, yellow, green, blue, indigo and violet) - the colours of the spectrum. All the colours together merge and make visible light.



How Does Light Help Us See?

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.



1. Light from the light bulb travels in a straight line and hits the chair.



2. The ray of light is reflected off the chair and travels in a straight line to the girl's eyes, enabling her to see the chair.

We need **light** to be able to see things. A main source of light for life on Earth is the sun. The sun creates a huge amount of energy which travels down to us in straight lines of light, enabling us to see. These lines are called rays or beams of **light**. It also provides energy and warmth that allows plants to grow and keeps animals alive. Light travels through the air about a million times faster than sound, which explains why you see lightning before you hear thunder.



Key Vocabulary

Reflection - when light bounces off a surface, changing the direction of a ray of light.

Light source - an object that makes its own light such as torch, fire, candle, lamp.

Shadow - an area of darkness where light has been blocked.

Transparent - describes objects that let light travel through them easily, meaning you can see through the object.

Translucent - describes objects that things let some light through, but scatters the light so we can't see through them properly.

Opaque - describes objects that do not let any light pass through them.