

# Alverton School Science Knowledge Organiser UKS2 LIGHT

## What we already know:

In LKS2, we learnt that a light source makes light. We can see things because light is reflected. Some materials reflect light better than others. We learnt that light travels in straight lines. Shadows are made when an object blocks light.

## Key Vocabulary

Filter	A device that prevents light of certain wavelengths from passing through it
Incident ray	A ray of light that hits a surface
Light	A form of energy that travels in a wave from a source
Light source	Anything that produces light
Periscope	A vertical tube of mirrors that gives a view of things otherwise out of sight
Prism	A 3D shape with flat sides. A transparent prism separates out visible light into all colours of the spectrum.
Rainbow	A display of the colours of the spectrum produced by dispersion of light
Reflected ray	A ray of light that has bounced back after hitting a surface
Reflection	When light bounces off a surface, changing the direction of a ray of light
Refraction	When light bends as it passes from one medium to another

## Core Knowledge

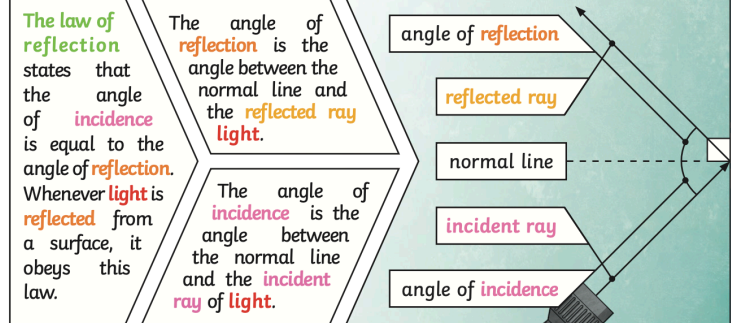
Light travels in a straight line. Light waves travel out from a light source in straight lines - often called beams or rays of light.

The law of reflection states that when light is reflected from a surface, the angle of incidence is equal to the angle of reflection.

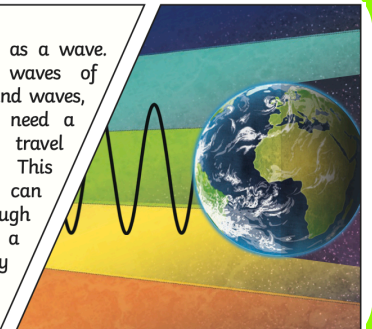
Refraction occurs when light bends as it passes through different medium - for example from air to water.

A prism splits light into the colours of the spectrum - red, orange, yellow, green, blue, indigo and violet.

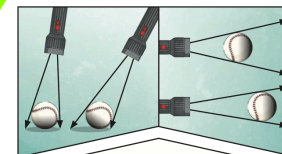
Shadows are always the same shape as the objects that cast them, since opaque objects block light.



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



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.



Shadows can also be elongated or shortened depending on the angle of the light source. A shadow is also larger when the object is closer to the light source. This is because it blocks more of the light.

A shadow is always the same shape as the object that casts it. This is because when an opaque object is in the path of light travelling from a light source, it will block the light rays that hit it, while the rest of the light can continue travelling.

