

Year 6 Knowledge Organiser Science: Light



ALL SAINTS
MULTI ACADEMY TRUST
BIRMINGHAM
GOD'S LOVE IN ACTION

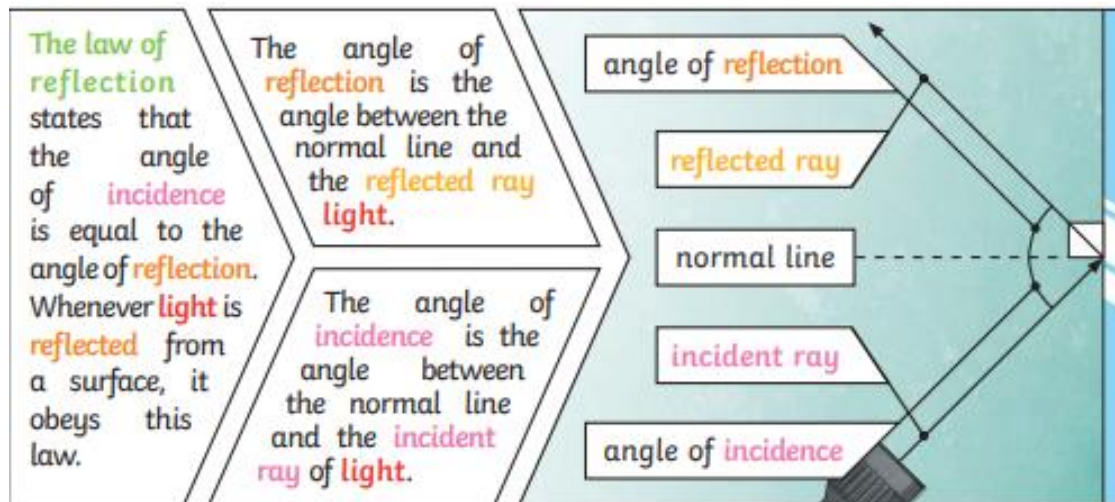
Key Vocabulary

Light	A form of energy that travels in a wave from a source.
Light source	An object that makes its own light.
Reflection	Reflection is when light bounces off a surface, changing the direction of a ray of light.
Incident ray	A ray of light that hits a 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.

Key Knowledge

We need light to be able to see things. Light waves travel out from sources of light in straight lines. These lines are often called rays or beams of light.

Light from the sun travels in a straight line and hits the chair. The light ray is then reflected off the chair and travels in a straight line to the girl's eye, enabling her to see the chair.



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 – completely airless space.



Key Knowledge

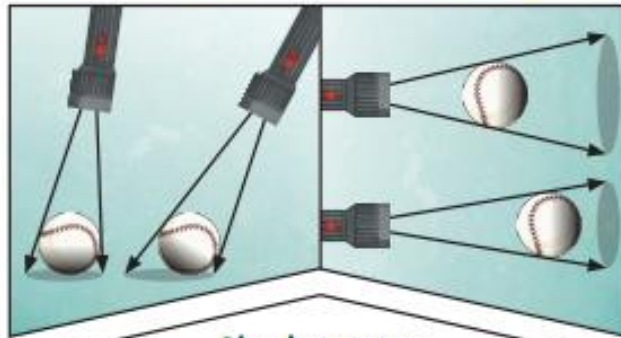


The spoon in this water looks as if it is bent. This is because **light** bends when it moves from air to water. When **light** bends in this way, it is called **refraction**.

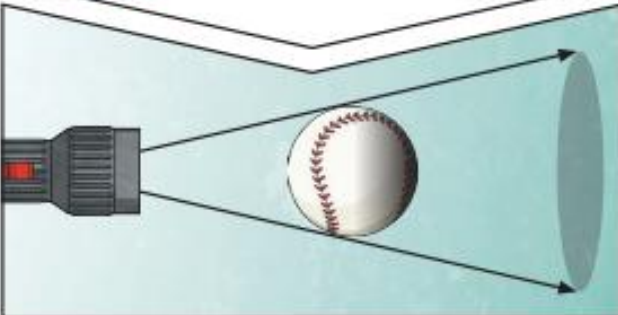
Isaac Newton shone a **light** through a transparent **prism**, separating out **light** into the colours of the rainbow (red, orange, yellow, green, blue, indigo and violet) - the colours of the **spectrum**. All the colours together merge and make visible **light**.



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.



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**.



Key Vocabulary

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.

Visible Spectrum

Light that is visible to the human eye. It is made of colour spectrum.

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.

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.