



Objectives and Sticky Knowledge



Prior Knowledge Recap:

Light – A form of energy that travels in a wave from a source. **Light Source** – An object that makes its own light.

Dark – Dark is the absence of light.

Reflection – The process where light hits the surface of an object and bounces back into our eyes.

Reflect – To bounce off.

Reflective – A word to describe something which reflects light well.

Ray – Waves of light are called light rays. They can also be called beams.

Land Objectives/ Sticky Knowledge

Know how light travels	Know and demonstrate how we see objects	Know why shadows have the same shape as the object that casts them	Know how simple optical instruments work e.g. periscope, telescope, binoculars, mirror, magnifying glass etc.
-Know that light travels in a straight line. -Know that light can be reflected and refracted.	-Know the different parts of the eye and their functions: that the pupil is where light enters the eye, that the lens bends the light, the iris is the muscle that controls how much light gets into the eye, the optic nerve and the retina. -Know that light reflects off objects into our eye.	-Know that when a light source shines on an object, a shadow will be created behind the object. -Know that shadows are	-Know what each instrument is and what its function is. E.g. periscope to see over trenches in WW1. -Know the key parts of each optical instrument. E.g. lens, mirror. -Know the journey of light to the eye using these instruments, applying previous component knowledge

Sea:

Links with 'Sustainability':

Links with CST and CKA Values Crown:



Year 6 Science Lent 1 Knowledge Organiser Light

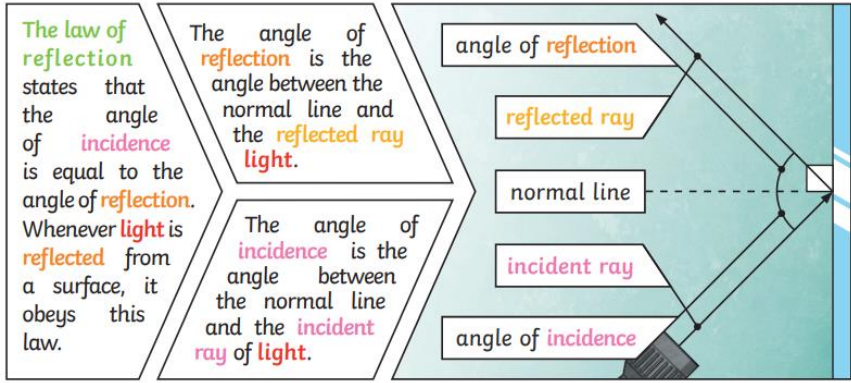
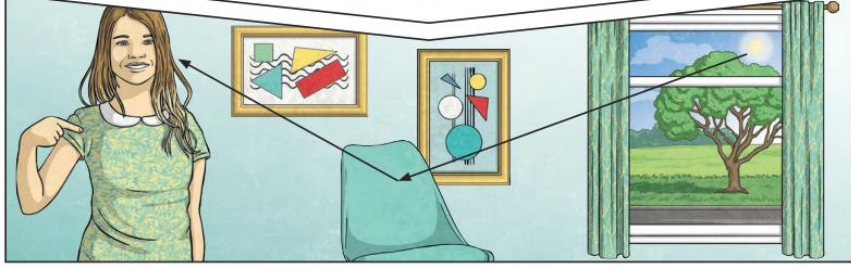
Key Vocabulary

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 .
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 up of a 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.

Key Knowledge

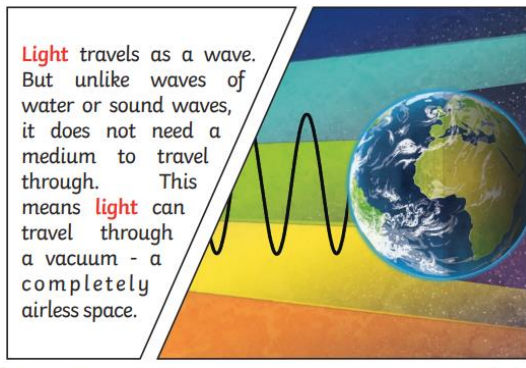
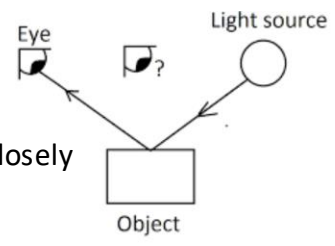
We need **light** to be able to see things. **Light** waves travel out from sources of **light** in straight lines. These lines are often called rays or beams of **light**.

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.

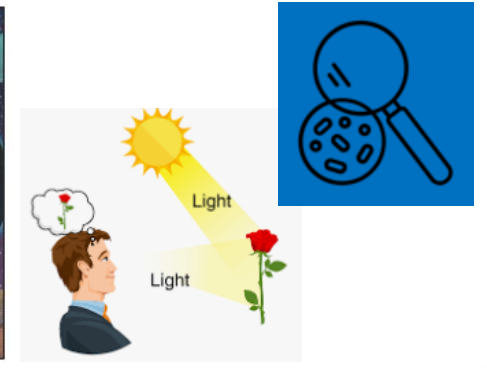


Sky objectives:

1. Ask well-considered questions that closely match personalised enquiries.
2. Skilfully plan and conduct child-led investigations, deciding which variables to control and what observations to make.
3. Use personal knowledge combined with accurate observations and data collection to draw a conclusion.



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.

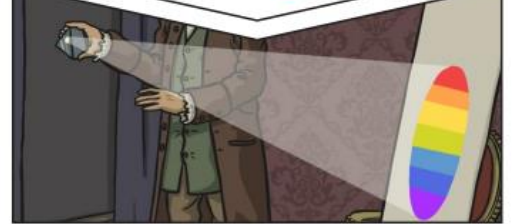


Key Knowledge

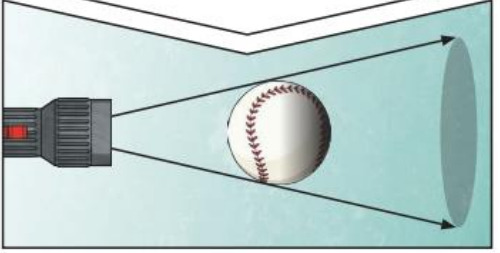
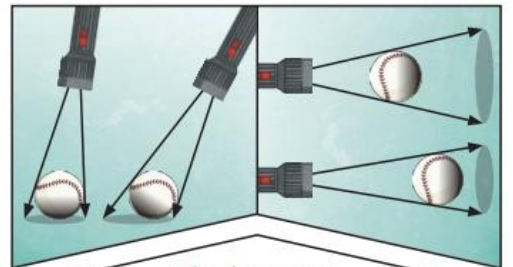


The spoon in this water looks as if it is bent. This is because **light** bends when it moves from air to water. When **light** bends in this way, it is called **refraction**.

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**.