



Year 6 Science Knowledge Organiser: Light



Subject Specific Skills

- Recognise that light appears to travel in straight lines.
- Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye.
- Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes.
- Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.

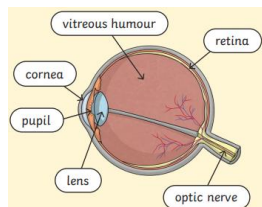
Prior Learning

- Recognise that they need light in order to see things and that dark is the absence of light.
- Notice that light is reflected from surfaces.
- Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.
- Recognise that shadows are formed when the light from a light source is blocked by an opaque object.
- Find patterns in the way that the size of shadows change.

Key Knowledge:

Light and Vision

Light is needed for the eye to see things. It travels in straight lines from a light source and is reflected by objects in the environment. This reflected light then enters the eye, enabling people to see.



Inside the eye

Once light enters the eye through the pupil, it is focused by the lens onto the retina at the back of the eye. The retina converts the light into electrical signals, which are carried by the optic nerve to the brain, where they are interpreted as visual images.

Key Vocabulary

Colour Spectrum – the range of colour visible to the human eye, which can be seen when light is refracted through a prism.

Dark – Darkness is the absence of light.

Light – a form of energy that makes vision possible.

Light Source – an object that emits light, such as the Sun or a lightbulb.

Reflect – to bounce back light or another form of energy when it hits a surface.

Reflection – the bouncing back of light when it hits a surface.

Reflective – describes a surface that reflects most of the light that hits it.

Refract – to change the direction of light as it passes through different materials.

Shadow – a dark area created when an object blocks light between a light source and a surface.

Visible Spectrum – the portion of the light spectrum that is visible to the human eye.

Key Individual: **Sir Isaac** **Newton**



Considered by some as one of the most important scientists in history. One of his achievements was developing the theory of colour.

Key Knowledge:

Refraction:

Refraction occurs when the direction of light changes as it passes through different materials. We can see this when we observe a teaspoon in a cup of water; as light transitions from air to water, it bends slightly, causing the spoon to appear distorted or bent.

The Visible Spectrum:

Humans can't see every colour of light. Ultraviolet and infrared light are invisible to the human eye. The colours of light that we can see are known as the visible spectrum.

The Colour Spectrum:

Visible light is made up of all the colours in the visible spectrum. When light passes through a prism, it separates into these individual colours (red, orange, yellow, green, blue, indigo and violet.)