

Science Knowledge Organiser – Light

Key Enquiry Question: How is light affected travelling through different materials?

National Curriculum

- 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



Key Vocabulary	Meaning
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.
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.
Spectrum	Light that is visible to the human eye. It is made up of a colour 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.

Sticky 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 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.
- The angle of reflection is the angle between the normal line and the reflected ray light.
- The angle of incidence is the angle between the normal line and the incident ray of light.
- The law of reflection states that the angle of incidence is equal to the angle of reflection. Whenever light is reflected from a surface, it obeys this law.
- 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.