



Key Vocabulary

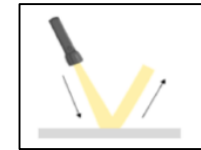
1	Light source	An object that produces its own light (e.g. sun, fire).
2	Reflection	When a light hits a surface and 'bounces' off.
3	Refraction	When light passes through a different object and its direction changes.
4	Opaque	An object which does not allow light to pass through it (e.g. wood).
5	Translucent	An object which allows some light to pass through it. It may be possible to see some unclear images through the object (e.g. tissue paper).
6	Transparent	An object which allows light to pass through it so that objects behind it can be easily seen (e.g. glass).
7	Spectrum	A range of colours caused when white light is refracted. A rainbow shows a spectrum of colours.
8	Rainbow	An arch of colour caused by the refraction of light on water droplets in the air, usually rain (Red, Orange, Yellow, Green, Blue, Indigo, Violet).
9	Prism	A solid 3D shape where two end faces are similar and parallel.
10	Shadow	A dark area or shape caused by the blockage of light.

Key Facts

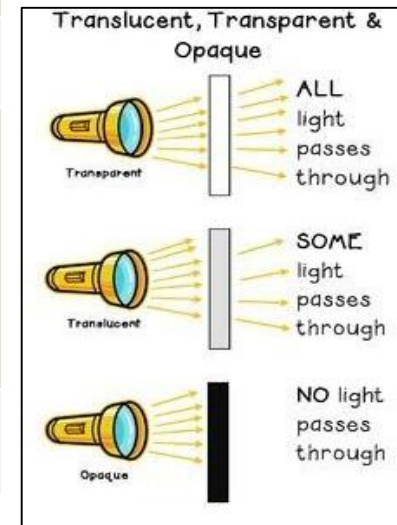
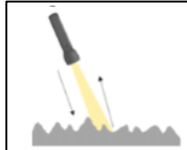
1	Light travels in a straight line
2	Light travels faster than sound.
3	A light year is a unit of measurement for distance. It is the distance light can travel in a year.
4	The size and shape of a shadow changes based on the distance and angle compared to the light source.
5	Darkness is caused by the absence of light.
6	The moon does not emit its own light – it reflects the sun.
7	Ultraviolet (UV) light is a type of radiation which you can't see but can be dangerous. UV rays can come from the sun.
8	The pupils control the amount of light entering the eyes.
9	Mirrors reflect light very well, so they create a clear image. An image in a mirror appears to be reversed. For example, if you look in a mirror and raise your right hand, the mirror image appears to raise its left hand.
10	If an opaque object gets in the way of a light source, it stops some of the light rays travelling through it.

Key Questions for the Topic

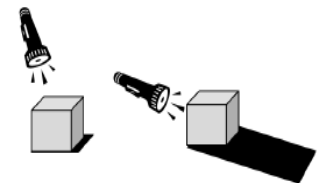
1	Why does the moon appear brighter at night?
2	How is a shadow formed?
3	Does light only travel in a straight line or can it bend? How do you know?
4	What does it mean when a material is opaque?
5	What does transparent mean?
6	How many light sources can you name?
7	What is the difference between natural and artificial light?



Left: Light travelling and reflecting off a smooth surface
Right: Light travelling and reflecting off a rough surface



As the light source moves higher in relation to the object, the shadow gets shorter. As the light source moves lower, the shadow gets longer



**Prior Vocabulary**

1	Light	A type of energy that makes it possible for us to see the world around us.
2	Bright	Filled with, reflecting, or emitting a lot of light
3	Mirror	A smooth surface that reflects an image of whatever is in front of it.
5	Torch	A hand-held light.
6	Dark	Having little or no light.

Prior Knowledge

1	Explore how things work. (Nursery – Light)
2	Talk about the differences in materials and changes they notice. (Nursery – Light)
3	Describe what they see, hear and feel whilst outside. (Reception – Light)
4	Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. (Y1 - Animals, including humans)
5	Describe the simple physical properties of a variety of everyday materials. (Y1 - Materials)

Future Learning

1	Recognise that light appears to travel in straight lines. (Y6 - Light)
2	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. (Y6 - Light)
3	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. (Y6 - Light)
4	Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. (Y6 - Light)
5	The similarities and differences between light waves and waves in matter. (KS3)
6	Light waves travelling through a vacuum; speed of light. (KS3)
7	The transmission of light through materials: absorption, diffuse scattering and specular reflection at a surface. (KS3)
8	Colours and the different frequencies of light, white light and prisms (qualitative only); differential colour effects in absorption and diffuse reflection. (KS3)