Light

Alston Moor Federation

Key Vocabulary

Word	Definition	●/●
Artificial	Made by human beings rather than happening naturally.	
Darkness	The absence or lack of light.	
Energy	The power to 'do work'.	
Fluorescent	A brightly coloured reflective surface, e.g. a cyclist's yellow jacket.	
Illuminate	Verb meaning to light something up, e.g. a torch can illuminate a room.	
Light	A type of energy that allows us to see. It travels in straight lines.	
Light Beam	A projection of light energy coming from a light source.	
Light Source	An object that emits its own light, e.g. the Sun, lightbulbs, candles.	
Mirror	A surface which reflects a clear image. Usually made of glass and metal.	
Opaque	Objects or materials that **don't** let any light pass through them.	
Periscope	Long tube-like objects with mirrors to see objects around corners.	
Protect	To keep something from being harmed by covering or shielding it.	
Pupil	Part of the eye that controls how much light enters the eye.	
Reflection	When light bounces off an object's surface before travelling to our eyes.	
Retina	Part of the eye which picks up light and passes information to the brain.	
Shadow	A dark shape made on a surface when an object blocks light from a light source.	
Torch	A portable battery-powered electric lamp.	
Translucent	Objects or materials that let **some** light pass through them.	
Transparent	Objects or materials that let light pass **easily** through them.	
UV Rays	Short light waves made by the sun which can harm our skin and eyes.	

Remember:

•Mirrors reflect light very well, so they create a clear image. An image in a mirror appears to be reversed. E.g. if you look in a mirror and raise your right hand, the mirror image appears to raise its left hand.

•When the light source is directly above the object, the shadow will be directly underneath.

•When a light source is to one side of an object, the shadow will appear on the opposite side.

Working Scientifically

•Asking relevant questions and using different types of scientific enquiries to answer them.

•Making systematic and careful observations.

•Gathering, recording, classifying and presenting data in various ways to answer questions.

•Recording findings and predictions.

•Using results to draw simple conclusions, make new predictions and raise further questions.

•Setting up simple practical enquiries, comparative and fair tests.
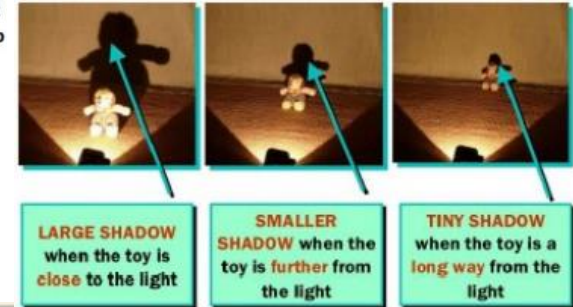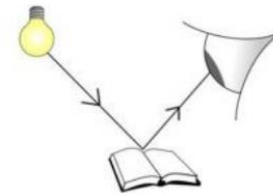
Previous Knowledge

In Year 1, you learnt to:
•Distinguish an object from its material.
•Identify various everyday materials and describe their physical properties.
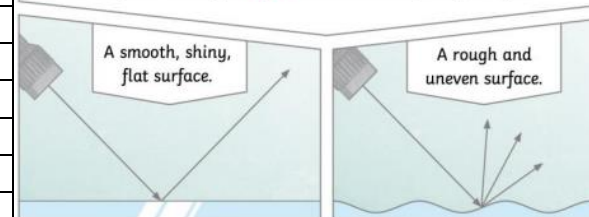
In Year 2, you learnt to:
•Compare the suitability of everyday materials for particular uses.
•Find out how the shapes of some solid objects can be changed.

For objects that are not a light source, light must be reflected from the object into our eye for us to see the object:

LARGE SHADOW when the toy is close to the light

SMALLER SHADOW when the toy is further from the light

TINY SHADOW when the toy is a long way from the light

The surfaces that reflect light best are smooth, shiny and flat.

A smooth, shiny, flat surface.

A rough and uneven surface.

•Sunlight can damage our eyes and skin.
•**NEVER** look directly at the Sun.
•We can protect our eyes by wearing sunglasses or sunhats in bright sunlight.

A shadow is caused when light is blocked by an opaque object. A shadow is larger when an object is closer to the light source. This is because it blocks more of the light.

Key Questions

•What are some natural and man-made light sources?
•How is natural and artificial light used by humans?
•How can we see anything?
•How are shadows formed?
•Why do shadows change in their size?
•What is darkness?
•How does light travel and reflect?
•Does light always travel in a straight line?
•Which surfaces reflect light best?
•What do 'opaque', 'translucent' and 'transparent' mean?
•What are examples of objects which have these qualities?
•What happens to an object's image when reflected by a mirror?
•How do periscopes work and how can we use them?
•How can we protect our eyes?

Lens   Retina
Pupil
Cornea
Iris
Optic Nerve