

Year 3 Light (Physics)



Prior and future learning

Prior Knowledge	What's next?
<ul style="list-style-type: none"> • Explore how things work. • Talk about the differences in materials and changes they notice. • Describe what they see, hear and feel whilst outside. (Reception) <p>Link to Y1 – Animals including humans</p>	<ul style="list-style-type: none"> • I can recognise that light appears to travel in straight lines. • I can 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. • I can 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. • I use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.

Track your learning

How I will show what I have learned	☹️	😐	😊
I can recognise that they need light in order to see things, and that dark is the absence of light			
I notice that light is reflected from surfaces.			
I recognise that light from the sun can be dangerous and that there are ways to protect their eyes.			
I recognise that shadows are formed when the light from a light source is blocked by an opaque object.			
I can find patterns in the way that the size of shadows change.			

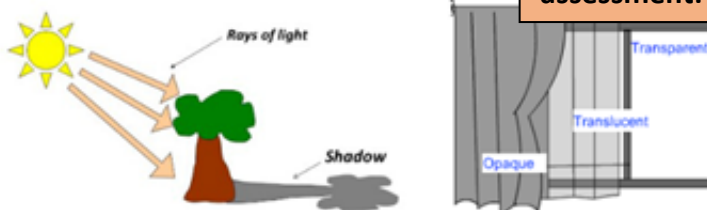
Key knowledge I need to understand

- We see objects because our eyes can sense light. Dark is the absence of light. We cannot see anything in complete darkness.
- Some objects, for example, the sun, light bulbs and candles are sources of light.
- Objects are easier to see if there is more light.
- Some surfaces reflect light. Objects are easier to see when there is less light if they are reflective.
- The light from the sun can damage our eyes and therefore we should not look directly at the sun and can protect our eyes by wearing sunglasses or sunhats in bright light.
- Shadows are formed on a surface when an opaque or translucent object is between a light source and the surface and blocks some of the light. The size of the shadow depends on the position of the source, object and surface.

Possible texts to read:

The King who banned the dark – *Emily Haworth-Booth*
The Hodgeheg – *Dick King-Smith*

Scientist: James Clerk Maxwell
(Visible and Invisible Waves of Light)



Working scientifically assessment: Make shadows

Link to maths curriculum:

Measurement:

- Measuring the size of shadows (*Measure, compare, add and subtract: lengths (m/cm/mm)*)

Statistics:

- Presenting data gathered using a light meter about the amount of light reflected from different materials and using this to make predictions for new values. (*Interpret and present data using bar charts*).

Vocabulary	
angle	the direction from which you look at something
bright	a colour that is strong and noticeable, and not dark
chemical reactions	a process that involves changes in the structure of something
dark	the absence of light
dim	light that is not bright
electricity	a form of energy that can be carried by wires and is used for heating and lighting, and to provide power for machines
emits	to emit a sound or light means to produce it
light	a brightness that lets you see things.
mirror	a flat piece of glass which reflects light , so that when you look at it you can see yourself reflected in it
opaque	if an object or substance is opaque , you cannot see through it
product	something that is produced
reflects	sent back from the surface and not pass through it
shadows	a dark shape on a surface that is made when something stands between a light and the surface
source	where something comes from
sunglasses	glasses with dark lenses which you wear to protect your eyes from bright sunlight
surface	the flat top part of it or the outside of it
torches	a small electric light which is powered by batteries and which you can carry
translucent	if a material is translucent , some light can pass through it
transparent	If an object or substance is transparent , you can see through it