

## Year 6 Science Curriculum

Working scientifically links   Rubric/PCMD opp.   Key Vocabulary

### Light

**What's the big picture?** Re cap - children to generate own questions for investigation

**Prior learning:**

Recognise that they need light in order to see things and that dark is the absence of light. (Y3 - Light)

Notice that light is reflected from surfaces. (Y3 - Light)

Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. (Y3 - Light)

Recognise that shadows are formed when the light from a light source is blocked by an opaque object. (Y3 - Light)

Find patterns in the way that the size of shadows change. (Y3 - Light)

Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. (Y5 - Properties and changes of materials)

National Curriculum Principles	Objectives	Knowledge and key Vocabulary	Reading opportunities	Technology
<p>Pupils should be taught to recognise that light appears to travel in straight lines</p> <p>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</p> <p>Explain that we see things because light travels from light sources to our eyes or from light sources to</p>	<p>I know how simple optical instruments work eg periscope, telescope, binoculars, mirror, magnifying glass etc..</p>	<p>Children to investigate, explore and make simple optical instruments - eg mirrors, binoculars, periscope, magnifying glass</p>	<p>Letters from the Lighthouse (Emma Carroll)</p> <p>The Gruffalo's Child (Julia Donaldson)</p> <p>The King Who Banned the Dark (Emily Haworth-Booth)</p>	
	<p>I know how light travels</p> <p>I know and can demonstrate</p>	<p>Children to know that light travels in straight lines.</p> <p>To know that light travels from a source, reflects off</p>		

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objects and then to our eyes	how we see objects	an object into our <b>eye</b> so that we can see the object - <b>model how light travels using string</b> .  All materials we see reflect light or we would not be able to see them.		
Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them	I know why shadows have the same shape as the object that casts them.	<b>Shadows</b> are created when objects <b>block</b> the light. The shadow will be the same shape as the object because light travels in straight lines. Shadows are always on the opposite side of the object to the light source. <b>Children to investigate if they can change the shape or size of an object's shadow without changing the object.</b>		

### Famous scientists

Thomas Edison - invented electric light bulb

Percy Shaw - inventor of the cats eye

### Common misconceptions

Some children may think:

- we see objects because light travels from our eyes to the object

### Enquiry ideas

<u>Comparative tests</u>	<u>Identify and classify</u>	<u>Observations over time</u>	<u>Pattern seeking</u>	<u>Research</u>
Which material is the most reflective?		How do shadows change over the day?	Is there a pattern to how bright it is in school over the day? Is it the same in every classroom?	Why do some people need to wear glasses?
			How can you change the size of an object shadow?	How do our eyes adapt to different conditions?