



Year 3 – (Energy) Light & sight



Working Scientifically	Sticky Knowledge	Linked Texts	Key Scientists
- Recall and use specific scientific vocabulary accurately (year group key vocabulary) - Ask relevant questions and use different types of scientific enquiries to answer them, include making their own questions - Set up simple practical enquiries, comparative and fair tests, aiming to do so independently with their own decisions. - Gather, record, classify and present data in a variety of ways to help in answering questions - Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables - Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions - Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions - Identify differences, similarities or changes related to simple scientific ideas and processes - Use straightforward scientific evidence to answer questions or to support their findings.	- There must be light for us to see. Without light it is dark. - We need light to see things even shiny things. - Transparent materials let light through them and opaque materials don't let light through. - Beams of light bounce off some materials (reflection). - Shiny materials reflect light beams better than non-shiny materials. - Light comes from a source	The Owl Who Was Afraid of the Dark (Jill Tomlinson) The Dark (Lemony Snicket) The Firework-Maker's Daughter (Philip Pullman)	James Clerk Maxwell (Visible and Invisible Waves of Light) Percy Shaw (cat's eyes)
Key Question(s):	Key Question(s):	WS vocabulary	
- Can you describe why light is important to see things? - Can you describe what dark is? - Why is the light from the sun dangerous? Explain how we can protect ourselves. - Can you explain what a shadow is and how it is formed? - How does a shadow change when the light source is moved closer to an object? - How can we change the darkness, size and shape of a shadow? - How does the shape of a mirror affect how the light reflects?	- How does distance from a light source affect how bright it looks? - How does being in darkness affect your sense of hearing? - What colour would be the best to make a safety jacket from? - How does the colour of a material affect how reflective it is? - What would be the best material to make a blind for a baby's room? - How does thickness of a material affect how much light can pass through it?	Investigation, enquiry, prediction, variable, dependent variable, independent variable, constant, patterns, equipment, apparatus, method, results, conclusion, graph, patterns, distance, data, theory, fair test, reasoning	

Teaching suggestions in Enquiry types

<u>Comparative tests</u>	<u>Identify & Classify</u>	<u>Observation over time</u>	<u>Pattern Seeking</u>	<u>Research</u>	<u>BIG Question – Problem solving</u>
How does the distance between the shadow puppet and the screen affect the size of the shadow? Which pair of sunglasses will be best at protecting our eyes? 	How would you organise these light sources into natural and artificial sources? 	When is our classroom darkest? Is the Sun the same brightness all day? 	Are you more likely to have bad eye sight and to wear glasses if you are older? 	How does the Sun make light? 	What is a shadow? (Also use EXPLORIFY) <u>Assessment Opportunity</u> 