



Year 6 – (Energy) Light and sight



Working Scientifically	Sticky Knowledge	Linked Texts	Key Scientists
- Recall and use specific scientific vocabulary accurately (year group key vocabulary) - Plan different types of scientific enquiries to answer questions, include recognise and control variables where necessary - Recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why - Take measurements, use a range of scientific equipment, with increasing accuracy and precision, take repeat readings when appropriate - Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs - Use test results to make predictions to set up further comparative and fair tests - Report and present findings from enquiries, include conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations - Identify scientific evidence that has been used to support or refute ideas or arguments. - Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas	Animals see light sources when light travels from the source into their eyes. Animals see objects when light is reflected off that object and enters their eyes. Light reflects off all objects (unless they are black). Non shiny surfaces scatter the light so we don't see the beam. Light travels in straight lines. From Yr 3 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	Letters from the Lighthouse (Emma Carroll) The Gruffalo's Child (Julia Donaldson) The King Who Banned the Dark (Emily Haworth-Booth)	Thomas Young (Wave Theory of Light) Ibn al-Haytham (Alhazen) (Light and our Eyes) Percy Shaw (The Cats Eye)
Key Question(s):	Key Question(s):	WS vocabulary	
How does light travel? How are objects seen by the eye? Why do shadows have the same shape as the objects they are cast by? How can different colours of light be created? Can you explain what a periscope is and how it works? What is a rainbow and how is it formed? How perfect are our mirrors? Do some scatter light more than others?	How does the size of an object affect the size of a shadow? How does the distance between the light and the object change the size of a shadow? How does the distance between the object and the size of the screen affect the size of a shadow? How does the amount of aluminium foil scrunched affect how much light is scatters? How does the amount of polishing affect how well a piece of metal scatters light? What happens to light when it is shone through water? How is this affected by putting glitter, salt or talc in the water?	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 angle that a light ray hits a plane mirror affect the angle at which it reflects off the surface? Which material is most reflective? 	Can you identify all the colours of light that make white light when mixed together? What colours do you get if you mix different colours of light together? 	Does the temperature of a light bulb go up the longer it is on? How does my shadow change over the day? 	Is there a pattern to how bright it is in school over the day? And, if there is a pattern, is it the same in every classroom? 	Why do some people need to wear glasses to see clearly? How do our eyes adapt to different conditions? 	Why does my shadow change length over the course of a day? (Also use EXPLORIFY) <u>Assessment Opportunity</u> 