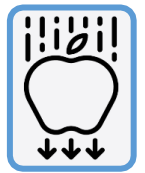




Science – Light (Year 6)

Outcome: to use a periscope to explain how light travels.

Physics



Prior Knowledge and Skills

- 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)

Ideas and inspiration:

Euclid (Mathematician who predicted that light travels in straight lines and we only see things that light falls on)

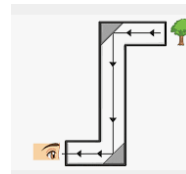


Ibn al-Haytham (Alhazen) (Physicist & Mathematician who developed a theory that light travels in a straight line, and proved it by carrying out the first scientific experiment)



light puppet show

periscope



Vocabulary:

Reflection:
periscope.

Seeing light:
visible spectrum, prism.

How light travels: light waves, wavelength, straight line, refraction.

Previously introduced vocabulary:
names and properties of materials, absorb.

Developing Knowledge and Skills

Scientific Knowledge:		Working Towards	Within	Expected	Above
	Recognise that light appears to travel in straight lines.				
	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.				
	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.				
	Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.				
Working Scientifically (Skills): Plan:		Working Towards	Within	Expected	Above
 	Plan different types of scientific enquiries to answer questions, make predictions, recognise and control variables where necessary.				
	Make their own decisions about what observations to make, what measurements to use and how long to make them for, and whether to repeat them.				

	 Choose the most appropriate equipment to make measurements and explain how to use it accurately.				
Working Scientifically (Skills): Do:					
 	 Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.				
Working Scientifically (Skills): Review:		Working Towards	Within	Expected	Above
  	 Use test results to make predictions to set up further comparative and fair tests.				
	 Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.				
	 Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas				
Working Scientifically (Enquiries): Comparative and fair testing		Working Towards	Within	Expected	Above
	 Investigate the shape of shadows.				
	 Investigate light travelling in straight lines.				
Highlights: _____ _____					