

Our School Values- Science	
Love	We show love by fostering a joy of discovery.
Courage	We show courage by being brave, challenging thinking, asking questions and investigating new ideas. We show courage knowing that we won't always find the answer.
Unity	We show unity by working collaboratively to discover more.
Inspiration	We show inspiration by not giving up and thinking creatively to seek answers.



Year 6 Science Light



NC Objectives

- 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

Knowledge I already know

I know that to see we must have light. Light reflects off an object and enters our eyes.
 I know that shadows form when an opaque object blocks the light.
 I know that shadows change length depending on the position of the light source. Sources directly above give a short shadow. Sources further away give a longer shadow.
 I know that shadows change length as the Earth rotates.
 I know that I should never look directly at the sun or at bright light sources such as torches as this can damage my eyes.

Knowledge I will learn

I know that a light source emits light.
 I know that light only travels in straight lines.
 I know that when white light is shone through a prism, the colours of the visible spectrum separate and produce a rainbow (colours of the visible spectrum).
 I know that Isaac Newton discovered that light was made of colours.
 I know that we see an object by light reflecting off a surface and entering our eyes.
 I know that shiny or smooth surfaces reflect light in the same direction.
 I know that rough surfaces reflect light in a scattered direction.

Key Vocabulary

Word	Definition
Impurity	A substance that is present in small amounts in another substance
Emit	To send something out
Absorb	Take in a liquid, gas or other substance from the surface or space around
Constituent	One of the parts of something that combine to form the whole
Filter	Remove unwanted materials
Artificial	Made or produced to copy something natural; not real
Refraction	Light changing direction when it goes through water at an angle
Incidence	The way in which light meets a surface
Spectrum	A band of coloured lights into which light may be separated
Prism	A clear object which separates light that passes through it
Lux	A measure of the amount of light produced
Pigment	Substance that exists and gives skin, leaves etc. a particular colour

How does light travel?	What colour is light made of?	How does light help us to see objects?	What surface makes the best reflectors?	Why do we see objects as a particular colour?	What happens to the appearance of objects put in water?
Electric tea light investigation. Draw diagram for how we see light.	Research the answers to scientific questions about rainbows.	Investigation— measuring angles of incidences and reflections.	Investigation	Research scientific explanations for colours that we see in nature.	Investigation
Challenge: would a brighter torch give you a darker shadow?	Challenge: can rainbows be a full circle or vertical?	Challenge: are the colours you see in a mirror exactly the same in real life?	Challenge: why are light levels measured in games of cricket?	Challenge: why is it important to have international names for colours?	Challenge: how does refraction help us to see?
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