



Light and Shadow KS2

Duration: 1 hour, max capacity: 35 students

A fun-filled hour of experimental exploration. Students use prisms, mirrors, ray boxes, and coloured filters to investigate the properties of light and understand shadow, splitting white light, mixing coloured lights, and observing how laser light travels.

Key Words:

Light, Shadow, Reflection, Spectrum, Prisms, Colour, Investigation, Lasers, Diffraction.

Learning objectives

Appreciate that only certain objects and processes are a source of light

Acknowledge that light travels in straight lines

Understand that light is reflected from some surfaces and we see objects when this light enters our eyes

Recognise that white light is made up of all the colours in the visible spectrum and can be dispersed using a prism

Realise that the primary colours of light can be combined in different ways to create new colours

Explain the terms opaque, transparent and translucent

Understand that light cannot pass through certain materials and that this can result in the formation of a shadow

Consider how shadow size and direction can be changed

Content

Investigate light sources including glow sticks and bioluminescence.

Use a viewing tube to establish that light travels in straight lines and that a source of light is required to see things.

Observe a demo using smoke lasers.

Use a ray box and mirror to establish the principles of reflection.

Split white light into colours of the rainbow using prisms.

Experiment with the mixing of coloured light to determine primary and secondary colours.

Examine the effects of our 'magic glass' and understand the words opaque, transparent and translucent.

Explore the formation and nature of shadows.

Curriculum Links:

Year 3: Light

Recognise that light is needed in order to see things and that dark is the absence of light

Understand that light is reflected from surfaces

Recognise that shadows are formed when the light from a light source is blocked by an opaque object

Year 6: Light

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

Potential Hazards and accessibility

Handling of ray boxes and glass coloured filters. Small risk of leakage from glowsticks. Lasers are used for demonstration by the presenter only. The room will need to be dimly lit for much of the workshop.

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Workshop

