we the curious Workshop

Light and Shadow  KS2 duration: 1 hour

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:

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
Investigate how to use shadows to tell the time

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.

Related activities
Exhibits Light Graffiti, Colourful Shadows
Workshops A Trick of the Light
Shows Light Fantastic