

8J Light	Knowledge, Skills and Understanding
Higher	<p>Use ray diagrams to model and explain the effect of hole size on the image formed by a pinhole camera</p> <p>Use a model to explain the effect of various factors on shadow size</p> <p>State the meaning of: convex mirror, concave mirror</p> <p>Use ray diagrams to explain some of the features of images in periscopes</p> <p>Describe the effects of concave lenses on parallel beams of light</p> <p>State the meaning of: total internal reflection, critical angle</p> <p>Describe some uses of total internal reflection such as in optical fibres and in binoculars</p> <p>Describe the causes and effects of longsight and short-sight</p> <p>Explain how different types of lens are used to correct long-sight and short-sight</p> <p>Explain how paints of different colours can be made by colour subtraction</p>
Intermediate	<p>Compare longitudinal and transverse waves</p> <p>Represent the path of light as straight lines with arrows on diagrams and describe how you can demonstrate that light travels in straight lines</p> <p>Use a ray diagram to explain how shadows are formed and to explain image formation in pinhole cameras</p> <p>State the meaning of: diffuse, specular, incident ray, reflected ray</p> <p>Use the ray model of light to explain how a periscope works</p> <p>Use ray diagrams to explain the law of reflection and to describe the differences in light reflected from smooth and rough surfaces</p> <p>Describe the characteristics of the image formed by a plane mirror and use ray diagrams to explain its formation</p> <p>Explain why refraction occurs</p> <p>State the meaning of focal length, focus, and principal axis</p> <p>Relate the power of a lens to its shape</p> <p>Use ray diagrams to explain image formation in pinhole cameras</p> <p>Identify which parts of the eye cause refraction of light and describe how light is focused on the retina</p> <p>Describe similarities and differences between cameras and eyes</p> <p>Describe some examples of the absorption of energy transferred by light leading to chemical or electrical effects (in the retina or in a camera sensor)</p> <p>Describe how secondary colours or white light can be made from primary colours of light</p> <p>Describe the way our eyes detect different colours</p> <p>Explain why coloured objects appear coloured</p> <p>Explain how filters can be used to make coloured light</p> <p>Explain why objects look different in light of different colours.</p>
Foundation	<p>State the meaning of transverse wave and recall that light waves are transverse waves</p> <p>Recall that light travels in straight lines and can pass through empty space</p> <p>State the meaning of: opaque, translucent, transparent, reflect, scatter, transmit, absorb</p> <p>Use the ray model of light to explain how we see things that are not sources of light and to explain how shadows are formed</p> <p>Recall that sound does not travel as quickly as light, and sound needs a medium through which to travel but light does not</p> <p>State the meaning of: reflect, scatter, transmit, absorb, reflection, angle of incidence, angle of reflection, normal, plane mirror</p> <p>Describe some uses of plane mirrors</p> <p>Describe the difference between even reflection and scattering, and recall the law of reflection</p> <p>Use the ray model of light to explain how we see things that are not sources of light</p> <p>Describe some uses of lenses</p> <p>State the meaning of: refraction, angle of refraction, refracted ray, convex lens, converging lens</p> <p>Recall that light, sound travels at different speeds in different materials</p> <p>Draw ray diagrams to describe the refraction of light as it passes into and out of different media</p> <p>Describe the effects of convex lenses on parallel beams of light</p> <p>Recall the primary colours for light</p> <p>Identify the parts of the eye (including rods and cones) and state their functions</p> <p>Identify the parts of a camera and state their functions</p> <p>Describe how to split light into different colours using a prism and correctly use the terms: spectrum, dispersion</p> <p>Recall the colours of the visible spectrum, in order</p> <p>Recall that the appearance of an object depends on the colour of light shining on it</p> <p>Recall that filters can be used to make coloured light</p>