

<p><b>Programme of Study Statements</b></p> <hr/> <ul style="list-style-type: none"> <li>• Recognise that light appears to travel in straight lines.</li> <li>• 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.</li> <li>• 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.</li> <li>• Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</li> </ul>	<p><b>Key Vocabulary</b></p> <p>Light, plus straight lines, light rays, Light, light source, dark, absence of light, transparent, translucent, opaque, shiny, matt, surface, shadow, reflect, mirror, sunlight, dangerous</p>
<p><b>Skills for thinking like a Scientist:</b></p> <ul style="list-style-type: none"> <li>• Explore different ways to demonstrate that light travels in straight lines e.g. shining a torch down a bent and straight hose pipe, shining a torch through different shaped holes in card.</li> <li>• Explore the uses of the behaviour of light, reflection and shadows, such as in periscope design, rear view mirrors and shadow puppets.</li> </ul>	<p><b>Investigations for Thinking like a Scientist:</b></p> <p><b>Prior Learning:</b></p> <ul style="list-style-type: none"> <li>• Recognise that they need light in order to see things and that dark is the absence of light. (Y3 - Light)</li> <li>• Notice that light is reflected from surfaces. (Y3 - Light)</li> <li>• Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. (Y3 - Light)</li> <li>• Recognise that shadows are formed when the light from a light source is blocked by an opaque object. (Y3 - Light)</li> <li>• Find patterns in the way that the size of shadows change. (Y3 - Light)</li> <li>• 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)</li> <li>•</li> </ul>

<b>I can statements for applying our Science</b> <ul style="list-style-type: none"> <li>• Can explain how evidence from enquiries shows that light travels in straight lines</li> <li>• Can predict and explain, with diagrams or models as appropriate, how the path of light rays can be directed by reflection to be seen, e.g. the reflection in car rear view mirrors or in a periscope</li> <li>• Can predict and explain, with diagrams or models as appropriate, how the shape of shadows can be varied</li> <li>•</li> </ul>		<b>Future Knowledge:</b> <ul style="list-style-type: none"> <li>• The similarities and differences between light waves and waves in matter. (KS3)</li> <li>• Light waves travelling through a vacuum; speed of light. (KS3)</li> <li>• The transmission of light through materials: absorption, diffuse scattering and specular reflection at a surface. (KS3)</li> <li>• Use of ray model to explain imaging in mirrors, the pinhole camera, the refraction of light and action of convex lens in focusing (qualitative); the human eye. (KS3)</li> <li>• Light transferring energy from source to absorber leading to chemical and electrical effects; photo-sensitive material in the retina and in cameras. (KS3)</li> <li>• Colours and the different frequencies of light, white light and prisms (qualitative only); differential colour effects in absorption and diffuse reflection. (KS3)</li> <li>•</li> </ul>
<b>Cultural Capital</b>		
<b>Visits and visitors</b>	<b>Experiences and events</b>	<b>Key texts</b>
<b>Community events and links</b>	<b>Global issues</b>	<b>Famous people</b>
<b>Life Skills</b>	<b>Key places</b>	<b>Links:</b>