

## Light and Dark Workshop

### Curriculum Links

<b>Please note:</b>	Our workshops may not cover all of the links below in great depth as we are restricted by time, however you have the opportunity to cover them in the follow up activities you will be receiving from us.	
<b>Aims and Activities taken from the workshop booklet</b>	<p>Light cannot be tasted, heard, felt or smelt - but it can be seen, and children can have a lot of fun finding out about it. This workshop gives Reception, KS1 and lower KS2 children the opportunity to explore light in an exciting and active way, building upon ideas taken from Light and Dark in the curriculum</p> <p>Each workshop comes in two parts:</p> <p>Using a variety of light sources, a 'black out tent' and various different objects, children develop the understanding that light is needed in order to see, and that darkness is the absence of light. Using mirrors and periscopes they investigate how light travels. We bring a selection of toys that use light and shadow screens which children can use to explore shadows for KS2. In the second part of the workshop each child makes a small kaleidoscope to take home. They also have an opportunity to go in our black-out tent to see how light is used to stimulate their senses.</p>	
	<b>National Curriculum</b>	<b>Non-Statutory Opportunities</b>
<b>Science</b>	<p><b>Working Scientifically (KS2):</b></p> <ul style="list-style-type: none"> <li>• Asking relevant questions and using different types of scientific enquiries to answer them</li> <li>• Setting up simple practical enquiries, comparative and fair tests</li> <li>• Make systematic and careful observations take accurate measurements using standard units</li> <li>• Gatherings, recording, classifying and presenting data in a variety of ways to help in answering questions</li> <li>• Recording simple findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables</li> <li>• Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</li> <li>• Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</li> <li>• Identifying differences, similarities or changes related to simple scientific ideas and processes</li> <li>• Using straightforward scientific evidence to answer questions or to support their findings</li> </ul> <p><b>Light (Y3)</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</li> </ul>	<p>Pupils will work scientifically by:</p> <ul style="list-style-type: none"> <li>- Exploring what happens when light reflects off mirrors to help them to answer questions about how light behaves (including exploring periscopes)</li> <li>- Observing and measuring shadows</li> <li>- Finding out how shadows are formed and what might cause the shadows to change.</li> </ul>

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	<ul style="list-style-type: none"> <li>• Notice that light is reflected from surfaces</li> <li>• Recognise that light from the sun can be dangerous and that there are ways to protect their eyes</li> <li>• Recognise that shadows are formed when the light a light source is blocked by a solid object</li> <li>• Find patterns in the way that the size of shadows change</li> </ul>	
<b>DT</b>	<ul style="list-style-type: none"> <li>• Design</li> <li>• Make</li> <li>• Evaluate</li> <li>• Use Technical Knowledge</li> </ul>	<p>Pupils make their own working kaleidoscope, giving them the opportunity to:</p> <ul style="list-style-type: none"> <li>- design an appealing product fit for a purpose</li> <li>- develop their own ideas</li> <li>- select from and use a range of tools to perform practical tasks accurately</li> <li>-select from and use a range of materials</li> </ul>
<b>Maths</b>	<ul style="list-style-type: none"> <li>• compare, describe and solve practical problems for lengths and heights (Y1)</li> <li>• measure and begin to record lengths and heights and time (Y1)</li> <li>• choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); using rulers (Y2)</li> <li>• Measure, compare, add and subtract lengths (m/cm/mm) (Y3)</li> </ul>	<p>Opportunity here for pupils to measure and record a range of measurements linked to shadows</p>
<b>English</b>	<ul style="list-style-type: none"> <li>• ask relevant questions to extend their understanding and knowledge</li> <li>• articulate and justify answers, arguments and opinions</li> <li>• developing a broader, deeper and richer vocabulary</li> </ul>	
<b>FS</b>	<ul style="list-style-type: none"> <li>• <b>Communication and Language:</b> Listen and respond to what they hear with relevant comments, questions or actions (listening). Express themselves effectively and develop their own narratives and explanations by connecting ideas or events (speaking)</li> <li>• <b>Maths:</b> use everyday language to talk about size, distance and position</li> <li>• <b>Understanding the world:</b> Children know about similarities and differences in relation to objects and materials.</li> <li>• <b>Exploring and using media and materials:</b> Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function</li> </ul>	<ul style="list-style-type: none"> <li>• <b>playing and exploring</b> - children investigate light through play with toys, periscopes, shadow screens and the black-out tent</li> <li>• <b>active learning about kaleidoscopes</b> - children concentrate and keep on trying if they encounter difficulties, and enjoy achievements</li> <li>• <b>creating and thinking critically about light and dark</b> - children have and develop their own ideas, make links between ideas, and develop strategies for doing things</li> </ul>