



Subject	Science	Theme	Light	Term	Spring 4
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What should I already know?
<ul style="list-style-type: none"> - We need light in order to see things and that dark is the absence of light. - Light is reflected from surfaces. - Light from the sun can be dangerous and that there are ways to protect our eyes. - Shadows are formed when the light from a light source is blocked by a solid object. - There are patterns in the way that the sizes of shadows change.

Working Scientifically
<p>Record data and results using scientific diagrams and labels (e.g. <i>how does light travel?</i>)</p> <p>Report on findings including conclusions, causal relationships and explanations of results (e.g. <i>how does light behave when it hits an object? What shape is a shadow?</i>)</p> <p>Use test results to make predictions to set up further comparative tests (e.g. <i>where could I place a mirror?</i>)</p>

Enquiries and Conclusions
<ul style="list-style-type: none"> - How does light travel? E.g. <i>Modelling a ray of light travelling from a light source to the eye via an object and mirror, using a ribbon</i> - How does light behave when it hits an object? E.g. <i>Moving a reflected spot of light by moving the mirror, what happens when two mirrors are opposite each other across a room?</i> - If light sources give out light, and we need light to see, how can we see things that aren't light sources? - Can I see behind me/round a corner? <i>Where could I place a mirror (rear-view mirrors/burglar detection)?</i> - How can mirrors help me see over a wall? <i>Design and build a periscope</i> - What shape is a shadow? <i>Investigate moving a light source around an object; what happens to the shadows? Why (light travels in straight lines)</i> - Is white light actually white? E.g. <i>Refraction through a prism/water (rainbows); coloured filters absorb the other colours, leaving just one</i>

What should I know by the end of the unit?
<ul style="list-style-type: none"> - 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. <p>Silver Threads: Process – What process can I use to check the impact? Changes – How does light change direction? Does the shape of a shadow change? How does white light change to a different colour(s) Energy – Light is a form of energy</p>

A **shadow** is always the same shape as the object that casts it. This is because when an **opaque** object is in the path of **light** travelling from a **light source**, it will block the **light** rays that hit it, while the rest of the **light** can continue travelling.

Key Vocabulary	
Light source	A natural or artificial source of light.
Light ray	Each line of light travelling in a straight line from its place of origin.
Reflect	To throw back light from a surface.
Shadow	A dark area created where an object blocks light from a light source. The object blocking the light will be opaque or translucent.