



Progression in knowledge

National Curriculum statements in red are from other linked topics.

Light

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| Early learning goal | <p>Communication and Language - Listening, Attention and Understanding</p> <ul style="list-style-type: none"> ● Make comments about what they have heard and ask questions to clarify their understanding. <p>Personal, Social and Emotional Development - Managing Self</p> <ul style="list-style-type: none"> ● Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices. <p>Understanding the World - The Natural World</p> <ul style="list-style-type: none"> ● Explore the natural world around them, making observations and drawing pictures of animals and plants. ● Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. ● Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter |
| Year 1 | <ul style="list-style-type: none"> ● Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. (Y1 Animals, including humans) ● Describe the simple physical properties of a variety of everyday materials. (Y1 Materials) |
| Year 2 | |
| Year 3 | <ul style="list-style-type: none"> ● Recognise that they need light in order to see things, and that dark is the absence of light. ● Notice that light is reflected from surfaces. ● Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. ● Recognise that shadows are formed when the light from a light source is blocked by an opaque object. ● Find patterns in the way that the size of shadows change. |
| Year 4 | |

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| Year 5 | <ul style="list-style-type: none"> ● 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) |
| Year 6 | <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. |
| KS3 | <ul style="list-style-type: none"> ● The similarities and differences between light waves and waves in matter. ● Light waves travelling through a vacuum; speed of light. ● The transmission of light through materials: absorption, diffuse scattering and specular reflection at a surface. ● 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. ● Light transferring energy from source to absorber leading to chemical and electrical effects; photo-sensitive material in the retina and in cameras. ● Colours and the different frequencies of light, white light and prisms (qualitative only); differential colour effects in absorption and diffuse reflection. |