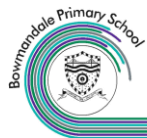


Science Progression in Light

Essential characteristics of scientists

- The ability to think independently and raise questions about working scientifically and the knowledge and skills that it brings
- Confidence and competence in the full range of practical skills, taking the initiative in, for example, planning and carrying out scientific investigations
- Excellent scientific knowledge and understanding which is demonstrated in written and verbal explanations, solving challenging problems and reporting scientific findings
- High levels of originality, imagination or innovation in the application of skills
- The ability to undertake practical work in a variety of contexts, including fieldwork
- A passion for science and its application in past, present and future technologies

Year Group	Key Skills	Key Vocabulary
EYFS	• 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 3/4	• 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 a solid object • Find patterns in the way that the size of shadows change	• opaque • transparent • translucent • warning • source • electric • reflection
Year 5/6	• Understand that light appears to travel in straight line • Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eyes • Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them, and to predict the size of shadows when the position of the light source changes • 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	• shadow • refraction
KS 3	• 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	



Straight... True... Successful

Science Progression in Light

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| | <ul style="list-style-type: none">• Use of ray model to explain imaging in mirrors, the pinhole camera, the refraction of light and action of convex lens in focusing the human eye• Light transferring energy from source to absorber, leading to chemical and electrical effects; photosensitive 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 |
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