Physics Unit: Light What does progression of knowledge look like?	
Year	**Progression of knowledge.**
3	• 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
6	• 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
Key Stage 3 (7-9)	• Describe what a vacuum is and state how light waves travel • Calculate the speed of light and compare it to the speed of sound • Describe the similarities and differences between light waves and waves in matter • Explain what happens to light when it hits different surfaces. • Describe how to construct and label a ray diagram in reflection. • Compare specular reflection and diffuse scattering. • Describe how an image is formed in a mirror • Use a ray model to explain imaging in mirrors, the pinhole camera, the refraction of light and action of convex lens in focusing (qualitative); • Name the parts of a camera and describe their function. • Name the parts of the eye and describe their function. • Compare the pinhole camera and the eye in terms of image formation • Explain what happens to the energy transferred by light to a camera or the eye. • State what the different frequencies of light within white light represent. • Describe how a prism can be used to disperse white light. • Explain how a coloured filter works. • Explain the appearance of coloured objects with different coloured incident light.