



Statutory Requirements:

- 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 sizes of shadows change

Working Scientifically:

- Asking relevant questions and using different types of scientific enquiries to answer them
- Setting up simple practical enquiries, comparative and fair tests
- Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
- Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
- Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables

Key Vocabulary:

- Light
- Surface
- Light Source
- Sunrise
- Shadow
- Sunset
- Sunlight
- Photon
- Reflect
- Light Wave
- Refract

Key Knowledge:

- We need light in order to see; darkness is the absence of light.
- Light comes from light sources such as the sun, lightbulbs and fire.
- It is dangerous to look directly at the sun. We can protect our eyes using sunglasses.
- Light reflects off all surfaces (not just mirrors) except for pure black surfaces.
- Shadows are formed when light is blocked by a solid object.
- Shadows change size and shape depending on the distance and angle of the light source and solid object from the surface the shadow is formed on.

Key Scientists



Classic

**James Clerk Maxwell
(1831- 1879)**

Scottish physicist, whose work led to many modern-day inventions. Albert Einstein said that 'his work changed the world forever'.



Contemporary

Charles K. Kao (1933- 2018)

The 'godfather of broadband'; pioneered research into passing light through glass fibres, leading to fibre optic cables being used for telecommunications.