

*Inspiring and enabling our school community to live life to the full*



**YEAR 6**

**Subject: Science**  
**What light does**

Our Science curriculum aims to enthuse children and help them to be curious and develop a sense of excitement about the world. Through a range of teaching, learning and extra-curricular opportunities, children will develop scientific knowledge and conceptual understanding to recognise the uses and implications of Science, today and for the future. We encourage children to ask their own questions; predict how things will behave and analyse causes, using Science to explain what is happening.

**Characteristics of an Effective Learner**

Courage  
Commitment  
Collaboration  
Creativity  
Curiosity

**Prior Learning:**

- In Reception, children are introduced to sources of light.
- In Year 3, children learn about reflection, how we see things and how shadows are formed. They also classify materials as translucent, transparent and opaque.

**Key Vocabulary taught in this unit:**

Block, travel, light ray, reflection, conclude, control variable, data, dependent variable, diagram, enquiry, evidence, explain, fair test, independent variable, measure, model, observe, opaque, pattern, predict, support, variable, dark, light, opaque, reflect, reflective, shadow, transparent, translucent

**Key Questions:**

***Q: How does light travel?***

Light appears to travel in straight lines. We can see a light source because some of the light from the source enters our eyes.

***Q: What can we change about a shadow?***

Light travelling in straight lines can be used to explain why a shadow is the same shape as the object that casts it and how the shape of shadows can be changed.

***Q3: What might affect the size of a shadow?***

The idea that light travels in straight lines can be used to explain what is observed when testing predictions about shadows.

***Q: What affects the size of a shadow?***

The shape of a shadow and the pattern to how shadows change size when the relative positions of the light, object and screen are changed, can be explained by light travelling in straight lines.

***Q: How is light reflected?***

Light is reflected from shiny surfaces in a predictable way because it travels in straight lines.

***Q: How do we see objects?***

We can see objects because they reflect some of the light that falls onto them into our eyes.

Children do not need to measure or calculate angles when observing the reflection of light. They do not need to be taught about light changing direction (refraction) when it passes through a liquid, lens or prism, or the splitting of white light into the spectrum of colours as this is taught in Key Stage 3.

**Intent: What do we want the children to know, be able to do by the time they complete this unit)?**

- 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.

#### **Working Scientifically**

- Identifying scientific evidence that has been used to support or refute ideas or arguments.
- Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.
- Recording data and results of increasing complexity using scientific diagrams and labels, [classification keys, tables, scatter graphs, bar] and line graphs.
- Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.

#### **Impact / Outcome:**

##### **What will the final product / result be?**

- Children will learn about the methods scientists use to build scientific knowledge.
- They will learn that scientists present and explain their findings to a range of audiences, using models, diagrams and graphs.
- They will develop an understanding of the following types of enquiry: carrying out [comparative and] fair tests.

#### **P4C Inquiry (where appropriate)**