



Subject: Science
 Year group: 6
 Term: Summer
 Unit name: Light

Prior Knowledge - *Certain things produce light, usually by burning (e.g. the Sun) or electricity (e.g. street lights). Shiny materials do not make light but do reflect it. Shadows are caused when certain materials block light. Light travels in straight lines. When light is blocked by an opaque object, a dark shadow is formed. The further away the light source is, the smaller the shadow is. The closer the source of the light, the bigger the shadow.*

Scientific enquiry

Classifying	Not relevant
Observing over time	Not relevant
Pattern seeking	Not relevant
Comparative/fair testing	Investigate the shape of shadows and link this to light travelling in straight lines.
Researching	Not relevant

Spiritual Development

Whilst the children explore the practical elements of light and how it travels, they will develop an understanding of how light can guide us and show us the way in life if we are lost. *Psalms 119:105: Your word is a lamp for my feet, a light on my path.*

- National curriculum:**
- 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 vocabulary

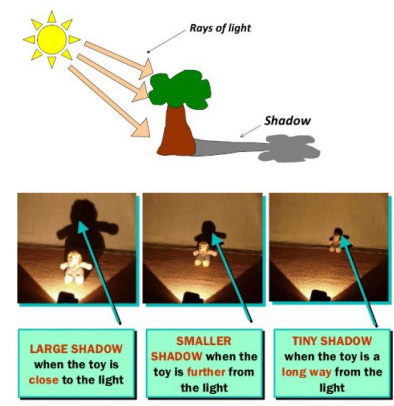
Dark	The absence of light
Dim	Light that is not bright
Emits	To emit a sound or light means to produce it
Law of reflection	The principle that when a ray of light, radar pulse, or the like, is reflected from a smooth surface the angle of reflection is equal to the angle of incidence.
Light	A brightness that lets you see things.
mirror	A flat piece of glass which reflects light, so that when you look at it you can see yourself reflected in it.
Opaque	If an object or substance is opaque, you cannot see through it.
Ray of incidence	A ray of light that hits a surface.
Ray of reflection	A beam of light that reflected from a surface.
Reflects	Sent back from the surface and not pass through it.
Shadows	A dark shape on a surface that is made when something stands between a light and the surface
Source	Where something comes from
Surface	The flat top part of something or the outside of it
Torches	A small electric light which is powered by batteries and which you can carry.
Translucent	If a material is translucent, some light can pass through it
Transparent	If an object or substance is transparent, you can see through it

Key Learning Assessment Statements- what will the children know by the end of the unit? Light appears to travel in straight lines, and we see objects when light from them goes into our eyes. The light may come directly from light sources, but for other objects some light must be reflected from the object into our eyes for the object to be seen. Objects that block light (are not fully transparent) will cause shadows. Because light travels in straight lines the shape of the shadow will be the same as the outline shape of the object.

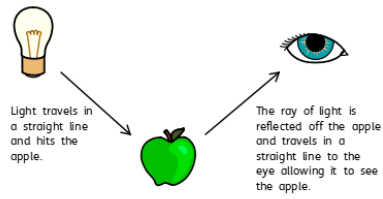
To know that light travels in a straight line. Light travels in a straight line. When you place a torch on a table in a dark room, the beam travels in a straight line. Reflection is when light bounces off a surface - this changes the direction in which the light travels.

To understand that shadows are created when an opaque object blocks the light.

Because light travels in straight lines, when there is an opaque object blocking the light, a shadow is formed. These shadows have the same shape as the objects that cast them. The size of a shadow changes as the light source moves.



To understand that animals see light sources when light travels from the source into their eyes.



To know that animals see objects when light is reflected off that object and enters their eyes.

To understand that light reflects off all objects (unless they are black).

To understand how non shiny surfaces scatter the light, so we do not see the beam.

Assessment for Learning
 Recapping prior knowledge- beginning of unit- what do children already know?
 Beginning of each lesson- focus on recall of previous learning (quick quizzes)

- Activity ideas**
- Explore different ways to demonstrate that light travels in straight lines e.g. shining a torch down a bent and straight hose pipe, shining a torch through different shaped holes in card.
 - Explore the uses of the behaviour of light, reflection and shadows, such as in periscope design, rear view mirrors and shadow puppets.