



# Bumblebees – Science KCV – Light



## Key facts to learn:

- Know that translucent objects allow some light to pass through, but some of the light changes direction as it passes through the object; this means that something seen through a translucent object is not clearly defined
- Know that when light passes from one medium to another (e.g. from air to water), it changes direction; this is called refraction; this happens because light travels at different speeds in different media
- Know that white light comprises all the colours of light
- Know that white light refracted by two surfaces in a prism will spread out so that all of its constituent colours can be seen; this array of colours is called a spectrum; it happens because the different colours that constitute white light travel at different speeds
- Know how to draw a diagram to show why the shape of a shadow will match the shape of an object
- Know that when light reflects off an object, the angle of incidence is equal to the angle of reflection
- Know that a periscope takes advantage of the predictable angles of incidence and reflection to allow an image to be shown to a viewer
- Know about the life of Thomas Young and his contribution to The Wave Theory of Light.

## Key skills to do:

- Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.
- Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.
- Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.
- Report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations.

## Words to know and spell (Tier 2 Vocabulary)

Light	Travels	Straight
Reflect	Source	Object
Shadows	Mirrors	Rainbow
Filters	Optics	Prism
Lens	Spectrum	Translucent
Medium	Block	

## Words to understand and spell (Tier 3 Vocabulary)

<b>Periscope</b>	Equipment used to enable an observer to see things that are out of sight.
<b>Refraction</b>	The change in direction of a wave as it passes from one medium to another.
<b>Absorption</b>	The process of absorbing or being absorbed by another.
<b>Angle of incidence</b>	The angle made by a ray of light falling on a surface and the line perpendicular to that surface.

## Concept check questions. Test yourself:

Why do shadow sizes vary?  
Why are some shadows clearer than others?  
Exactly how does the human eye work?  
Draw a diagram to show how light is refracted.

### Opportunities for Investigation:

**Observing over time:** How does my shadow change over the day?