

Knowledge Organiser: Light

Year 3: Spring Term 2



Sticky Knowledge

- Know that light is a form of energy.
- Know that energy comes in different forms and can be neither created nor destroyed, only changed from one form to another.
- Know that we need light to see things and that darkness is the absence of light.
- Know that light travels in straight lines.
- Know that light is reflected when it travels from a light source and then 'bounces' off an object.
- Know that everything we see is either a light source or something that is reflecting light from a light source into our eyes.
- Know that the Sun is a light source, but that the moon is not and is merely reflecting light from the Sun.
- Know that many light sources give off heat and light.
- Know that fluorescent bulbs glow when electricity adds energy to a gas within the bulb.
- Know that sunglasses can protect eyes from sunlight but looking at the Sun directly - even with sunglasses - can damage the eyes.
- Know that opaque objects block light creating shadows and that light passes through transparent objects.
- Know that opacity/transparency and reflectiveness are properties of a material.
- Know that as objects move towards a light source, the size of the shadow increases.
- Know how to show the changing of shadow size by drawing a diagram with straight lines representing light.
- Know that a data logger can keep track of light levels and this can be plotted on a graph to show how this changes over the course of a day.

Extended Specialist Vocabulary

Word	Definition
New Vocabulary	
wave	a curve
mirror	a smooth surface that reflects an image of whatever is in front of it
incident ray	a ray of light that strikes a surface
image	a picture or some other likeness of a person or thing
beam	a narrow ray of light
photon	unit of electromagnetic energy
solid	having a firm shape or form that can be measured in length, width, and height
opaque	the name given to objects which light cannot travel through. They block light and create shadows
transparent	the name given to objects which light can travel through
translucent	the name given to objects which some light can travel through.
object	anything that has shape or form and can be seen or touched
source	the start or cause of something
data logger	Machine that can be used to store figures about something to learn from them

Who: Scientific Influences

Name/Picture	Why significant
Thomas Edison (1847 - 1931) 	Thomas Edison experimented with the electric light bulb. His version was an air-tight glass case containing a looped wire, called a filament, which was connected to a flow of electricity called a current. If the current was strong enough, the filament glowed white-hot. In 1879 he created a long lasting filament and the light bulb was born.

Possible Scientific Enquiry Questions

Identifying, classifying and grouping	Based on the children's own criteria: <ul style="list-style-type: none"> ▪ classify light sources (leading to man-made/natural) ▪ classify materials (leading to reflective/non-reflective, transparent/translucent/opaque).
Comparative testing	Test materials for reflectiveness. <ul style="list-style-type: none"> • Test materials for transparency. • Investigate shadows (size of shadows, shape of shadows)

Diagrams/maps etc

