



Knowledge Organiser

SCIENCE: Light

Year 3/4 Autumn TERM 2

- 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 an opaque object
- Find patterns in the way that the size of shadows change.

Enquiry Questions

Question 1	
What do we need light for?	We need light in order to see and darkness is the absence of light.
Question 2	
What does 'source of light' mean?	A light source is anything that makes light. There are natural and artificial light sources. Examples of natural light sources include the Sun, stars and candles. Examples of artificial light sources include light bulbs, lamp posts and televisions.
How does light reflect from different surfaces?	Reflecting means bouncing off. Light reflects off of a surface at the same angle as it hits it. Surfaces that are smooth and shiny reflect light well, for example, mirrors and polished metals. They are not sources of light, but reflect light that shines on them.
Question 3	
Is the sun a hero or villain?	Often a hero but sometimes a villain. The light from the Sun is dangerous and can damage our eyes. We can protect our eyes from the Sun by not looking directly at it, wearing sunglasses with UV protection and sun hats.
Question 4	
What are shadows? Why are they formed?	A shadow is a dark shape where light doesn't shine. Shadows are made when an opaque object blocks the light. The size and shape of a shadow depends on the position of the light source and how far the object is from it.
Question 5	
Investigation: How do shadows behave?	Moving an object further away from a light source creates a smaller shadow. Moving it closer to the light source creates a bigger shadow.

Important Facts

- Light is a transfer of energy which travels in straight lines.
- Light comes from different sources, like lamps, bulbs and the Sun.
- Darkness is the absence of light.
- When light hits an object, it is reflected (bounces back) and enters our eyes.
- A shadow is a dark shape where light doesn't shine. It is made when an opaque object blocks light.

Key Vocabulary

Light dark absence reflection surface diffuse natural man-made light source shadow
 blocked bright dim mirror opaque translucent transparent transfer of energy bouncing
 Earth

Useful websites

<https://www.bbc.co.uk/bitesize/topics/zbssgk7>

<https://www.theschoolrun.com/what-is-light>

<https://kids.britannica.com/kids/article/light/353386>

Useful resources:

BBC Bitesize Key Stage 2 - Light

Usborne Junior Illustrated Science dictionary

Useful pictures:

