

Y3 Knowledge Organiser Science - Topic: Light and Dark (Autumn term)

Objectives/outcomes:

- I can identify light sources
- I understand that dark is the absence of light
- I understand that we need light to see
- I know that light travels in straight lines
- I can identify reflective surfaces
- I understand how surfaces reflect light
- I recognise that a mirror appears to reverse an image
- I can identify some parts of the eye
- I understand that the Sun can damage my eyes
- I know how to protect my eyes from the Sun
- I understand that a shadow is formed when a solid object blocks light
- I know how shadows change size
- I can identify opaque, translucent and transparent objects

Working Scientifically objectives:

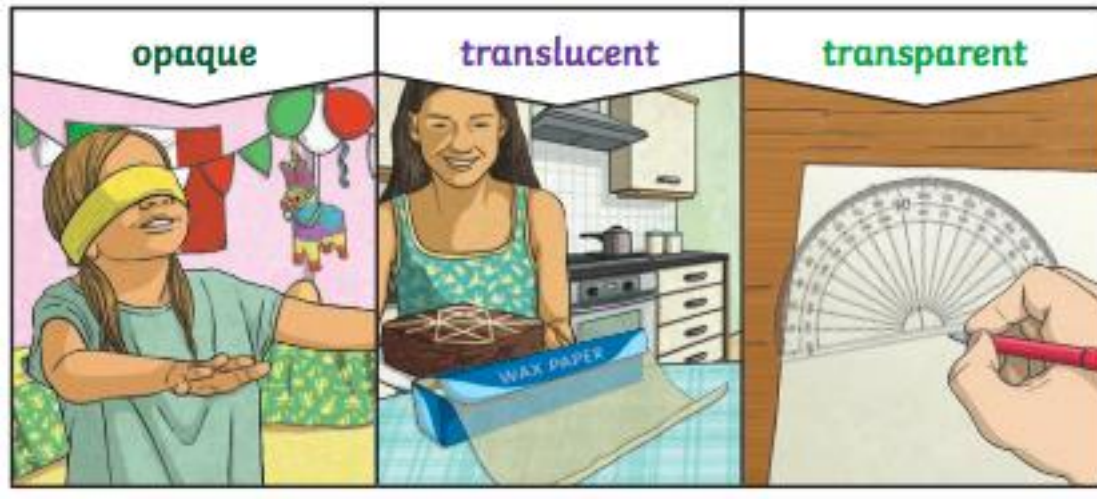
- Asking relevant questions
- Setting up enquiries and choosing equipment
- Setting up fair tests (with help)
- Carefully observing and measuring
- Recognising when to use other sources of information to find answers
- Choosing how to record information - tables, tally charts, Venn and Carroll diagrams and bar charts
- Looking for patterns - identifying and classifying
- Explaining results - drawing conclusions and using results

Key vocabulary

- **Light source** - A form of energy that travels in a wave from a source
- **Light source** - An object that makes its own light
- **Dark** - Dark is the absence of light
- **Opaque** - Describes objects that do not let any light pass through them
- **Pupil** - The black part of the eye which lets light in
- **Reflection** - The process where light hits the surface of an object and bounces back into our eyes
- **Reflect** - To bounce off
- **Reflective** - A word to describe something which reflects light well
- **Retina** - A layer at the very back of the eye. The retina take the light the eye receives. It then changes it into nerves signals to send to the brain.
- **Ray** - waves of light are called light rays. They can also be called beams.
- **Shadow** - An area of darkness where light has been blocked
- **Translucent** - Describes objects that let some light through, but

		<p>scatter the light so we can't see through them properly</p> <ul style="list-style-type: none"> • Transparent - Describes objects that let light travel through them easily. Meaning you can see through the object
<p><u>Investigations:</u></p> <ul style="list-style-type: none"> • Finding out that lines travel in straight lines • Investigating which materials and objects are opaque, transparent or translucent • Investigating as to whether materials are reflective or not for a reflective book bag • Sun safety • How shadows are made and how they change when a light source is moved further or closer to it • How mirrors reverse images - writing messages, following mazes and creating own games 	<p><u>Resources</u></p> <ul style="list-style-type: none"> • Boxes (for testing whether light travels in straight lines) • Torches • Various fabrics such as rough, smooth, shiny, dull, opaque, transparent and translucent • Mirrors • Rulers 	<p><u>Curriculum Links:</u></p> <ul style="list-style-type: none"> • Maths - recording and reading data from graphs and tables, measuring and choosing the correct unit of measurement eg mm, cm, m, estimating, predicting

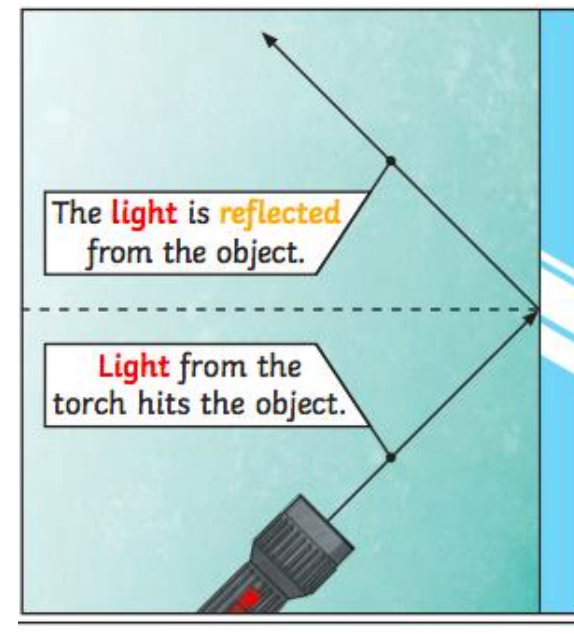
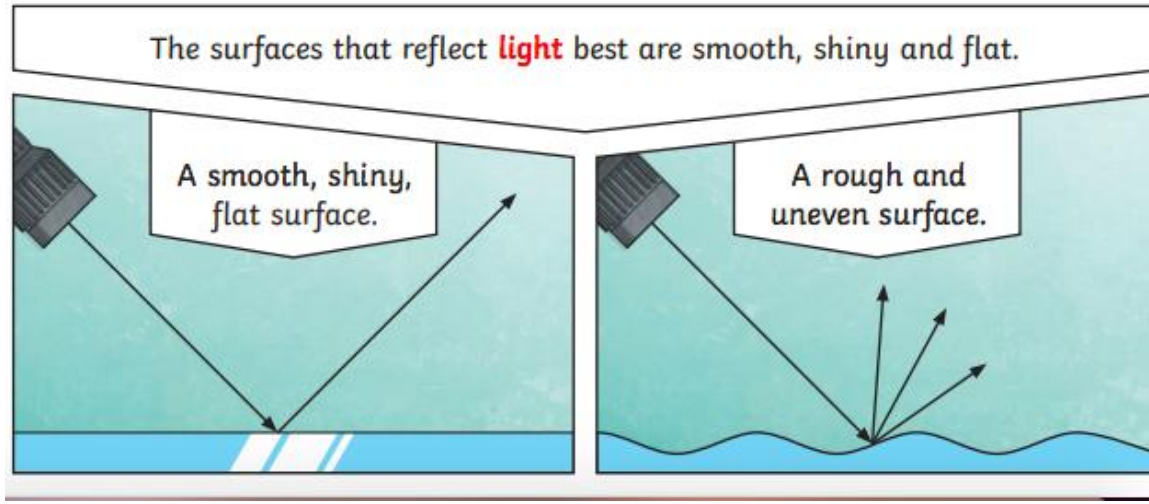
Key examples



Reflective surfaces



Key knowledge about light



Sources of light



Note: The moon is NOT a source of light as light reflects onto it from the sun.