

## Year 3 Science Curriculum

Working scientifically links   Rubric/PCMD opp.   Key Vocabulary

### Light

**What's the big picture?** Light is important because it allows us to see the world - children to generate own questions for investigation

**Prior learning:**

Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. (Y1 - Animals, including humans)

Describe the simple physical properties of a variety of everyday materials. (Y1 - Materials)

National Curriculum Principles	Objectives	Knowledge and key Vocabulary	Reading opportunities	Technology
Pupils should be taught to recognise that they need light in order to see things and that dark is the absence of light	I know what dark is (absence of light)  I know that light is needed in order to see	Children to know that <b>dark</b> is the <b>absence</b> of <b>light</b> and know that they cannot see in the dark - a small amount of light must be present to be able to see. <b>Use an object hidden in a cardboard box with an eyehole - can they see the object in the dark? Explore how objects are more or less visible in different levels of light.</b> Children to know that light comes from a light source. <b>Sort light sources into natural and man made.</b>	The Owl Who Was Afraid of the Dark (Jill Tomlinson)  The Dark (Lemony Snicket)  The Firework-Maker's Daughter (Philip Pullman)	
notice that light is reflected from surfaces	I know that light is reflected from a surface	What is <b>reflection</b> ? <b>Sort objects</b> according to whether they are <b>sources of light</b> or reflect light?  All objects reflect light to different degrees. <b>Measure sources of light/reflection using a data logger</b>		
recognise that light from the sun can be dangerous and that there are ways to	I know the danger of direct sunlight and describe	Children to learn that light from the sun can be dangerous. <b>Investigate effectiveness of sun creams or sunglasses using UV beads. Measure light shining through different materials using data loggers.</b>		

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protect their eyes	how to keep protected.	Know we should not look directly at the sun and can protect our eyes using sunglasses and sun hats.		
Recognise that shadows are formed when the light from a light source is blocked by an opaque object	I know and can demonstrate how a shadow is formed	Children to know what a shadow is and that it is formed because the light source is blocked by an <b>opaque</b> object - <b>transparent, translucent</b> <b>Compare shadows from opaque, translucent and transparent object</b>		
Find patterns in the way that the size of shadows change	I can explore shadow size and explain the changes	<b>Explore how sizes of shadows can change - children to make shadow puppets</b>		

### Famous scientists

Justus Von Liebig - inventor of the first modern mirror

### Common misconceptions

Some children may think:

- we can still see even where there is an absence of any light
- our eyes 'get used to' the dark
- the moon and reflective surfaces are light sources
- a transparent object is a light source
- shadows contain details of the object, such as facial features on their own shadow
- shadows result from objects giving off darkness.

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### Enquiry ideas

<u>Comparative tests</u>	<u>Identify and classify</u>	<u>Observations over time</u>	<u>Pattern seeking</u>	<u>Research</u>
How does the distance between the shadow puppet and the screen affect the size of the shadow?	sort these light sources into natural and artificial	When is our classroom darkest?	Are you more likely to need glasses if you are older?	How does the Sun make light?
Which pair of sunglasses will be best at protecting our eyes?		How does the brightness of the sun change during the day?		