Year 3 Science Curriculum – Spring 2

Theme: Light

Curriculum objectives

1. To recognise that they need light in order to see things and that dark is the absence of light.
2. To notice that light is reflected from surfaces.
3. To recognise that shadows are formed when the light from a light source is blocked by an opaque object.
4. To recognise that light from the sun can be dangerous and that there are ways to protect their eyes.
   To recognise that shadows are formed when the light from a light source is blocked by an opaque object.
5. To find patterns in the way that the size of shadows change.

Vocabulary

Absence/absent (as in absence of light)	Not there
Artificial	Not found in nature; made by humans
Block	Stop; not allow to pass through
Similar	Not identical but very alike
Surface	The outside or top of something

Additional tier 3 vocabulary
SNAP23_Y3_M2_lightshadow_ms.docx (live.com)

Links across the curriculum

PSHE: Road safety
Maths: Space and measure
Maths: Grouping and data collection

Prior knowledge: *What specifically have pupils learned that is relevant to this unit that they are building upon?*

Children have previously learnt:
- that light is seen by the eyes (Year 1 Biology – Senses)
- that materials can be transparent (see-through) or opaque (Year 1 Chemistry – Properties of materials)

Future knowledge: *What specifically will pupils learn in the future that is relevant to this unit?*

This prepares children for later learning:
- using observations of shadows to track the apparent movement of the Sun across the sky (Year 5 Physics – Earth and space)
- how light travels, including the properties of shadows, and how we see objects (Year 6 Physics – Light).

As children will learn about light travelling in straight lines and make measurements of shadows changing in Upper Key Stage 2, the focus in this module is on making observations of shadows and investigating what happens when light shines on materials with different properties. They do not need to be introduced to drawing light rays using scientific conventions

Lesson Sequence	Key Knowledge	Key Skills
What do we need to see?	- Light comes from light sources. - Dark is the absence of light. - Nothing can be seen if there is no light. - Objects are easier to see when there is more light.	Working scientifically: - using straightforward scientific evidence to answer questions [or to support their findings] Scientific enquiry type: - identifying and classifying
Which object is the most reflective?	- Shiny objects are those with surfaces that are good at reflecting light. - When there is less light, more reflective materials are easier to see than less reflective ones.	Working scientifically: - making systematic and careful observations and, where appropriate, taking accurate measurements using standard units - using a range of equipment, including [thermometers and] data loggers Scientific enquiry type: - comparative testing
How are shadows made?	- Shadows are formed when light is blocked. - Opaque materials are those that block all the light so objects made from opaque materials cast the darkest shadows.	Working scientifically: - reporting on findings from enquiries, including oral and written explanations, [displays or presentations of results and conclusions] Scientific enquiry type: - comparative testing
Is my shadow like me?	- Shadows are the same shape as the objects that cast them.	Working scientifically: - identifying differences, similarities or changes related to simple scientific ideas [and processes]

	- There are similarities and differences between the object and the shadow. Light from the sun can be dangerous so we need to protect our eyes. - Opaque materials block sunlight and so can protect our skin.	
How can we change the size of a shadow?	- The size of a shadow can be changed by moving the light source, changing either its height (for an object standing on and casting its shadow onto a surface) or distance from the object (for a shadow cast on a screen).	Working scientifically: • using results to draw simple conclusions, [make predictions for new values, suggest improvements and raise further questions] Scientific enquiry type: • comparative testing
Start next MTP		

Themes and links

Themes (types of enquiry)	Where these are covered:	Links across the science curriculum
Observation over time	•	
Research	•	
Pattern seeking	•	
Comparative and fair testing	• Lesson 2 • Lesson 3 • Lesson 4 • Lesson 5	
Identifying, classifying and grouping	• Lesson 1	–

EYFS	
1	Seasons
2	Growing
3	
4	Electricity
5	Materials
6	Classification of living things