Science: Light

Y3 Spring term

National Curriculum subject content:
✓ asking relevant questions and using different types of scientific enquiries to answer them
✓ setting up simple practical enquiries, comparative and fair tests
✓ making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment,
✓ including thermometers and data loggers
✓ gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
✓ recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
✓ reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
✓ using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
✓ identifying differences, similarities or changes related to simple scientific ideas and processes
✓ using straightforward scientific evidence to answer questions or to support their findings

National Curriculum theme:
✓ Pupils should be taught to:
✓ 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

Key Vocabulary:	
block	Stops light travelling through.
dark	The absence of light.
light	A form of energy that travels in a wave from a source.
light source	An object that makes its own light.
mirror	A surface that reflects a clear image.
opaque	Objects that do not let any light pass through them.
pupil	The black part of the eye which lets light in.
ray	Waves of light, also called light beams.
reflect	To bounce off.
reflection	Light hits the surface of an object and bounces back into our eyes.
reflective	Something which reflects light well.
retina	A layer at the very back of the eye. The retina takes the light that the eye receives. It changes it into nerve signals to send to the brain.
shadow	An area of darkness where light has been blocked.
transparent	Objects that let light travel through them easily, meaning you can see through them.
translucent	Objects that let some light through but scatter the light so we can't see through them properly.

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Sequence of Learning:					
Objectives (key knowledge):					
Lesson 1 To know that we need light in order to see things and that dark is the absence of light.	Lesson 2 To know that light is reflected from surfaces.	Lesson 3 To know that light is reflected from surfaces.	Lesson 4 To know that light from the sun can be dangerous and that there are ways to protect our eyes.	Lesson 5 To know that shadows are formed when the light from a light source is blocked by a solid object.	Lesson 6 To investigate patterns in the way that the size of shadows change.
Sticky knowledge					
✓ We need light to be able to see things. ✓ Light travels in a straight line. ✓ When light hits an object it is reflected. The reflected light hits our eyes; we can see the object. ✓ Some surfaces and materials reflect light well; other materials do not reflect light well. ✓ There are different types of light source. ✓ A shadow is created when light is blocked by an opaque object. ✓ A shadow is larger when an object is closer to the light source.					