

PENTECOST TERM 2

SCIENCE – Year 3 - Medium Term Planning – PHYSICS: LIGHT AND SHADOWS

<u>LESSON 1</u>	<u>LESSON 2</u>	<u>LESSON 3</u>
<p>LEARNING INTENTION: To know that dark is the absence of light and we need light to be able to see. To know that a light source produces light and a reflector reflects light.</p> <p>Disciplinary Knowledge:</p> <ul style="list-style-type: none"> Ask simple, relevant questions and use scientific enquiries to answer them. <p>Aim: Develop scientific knowledge and conceptual understanding through the specific discipline of physics.</p>	<p>LEARNING INTENTION: To know that some materials are reflective and others non-reflective.</p> <p>Disciplinary Knowledge:</p> <ul style="list-style-type: none"> Set up simple practical enquiries, comparative and fair tests, with support. Gather, record, classify and present data in a variety of ways. <p>Aim: Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them.</p>	<p>LEARNING INTENTION: To know that the light from the Sun is dangerous.</p> <p>Disciplinary Knowledge:</p> <ul style="list-style-type: none"> Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. <p>Aim: Be equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.</p>
<p>Key Vocabulary: light source, reflector, reflect, natural, artificial, produce, bounce</p>	<p>Key Vocabulary: source, reflect, reflector, reflective, non-reflective, material, image, rough, dull, shiny, smooth</p>	<p>Key Vocabulary: light rays, ultra-violet, dangerous, harmful, protection, vision, skin, invisible</p>
<p>Recap & retrieval</p>	<p>Recap & retrieval</p> <ul style="list-style-type: none"> Dark is the absence of light and we need light to be able to see. A light source is something that produces light. 	<p>Recap & retrieval</p> <ul style="list-style-type: none"> Dark is the absence of light and we need light to be able to see. A light source is something that produces light. A reflector is an object that reflects light from a light source.

		<ul style="list-style-type: none"> • Reflective materials are shiny and smooth but non-reflective materials are rough and dull.
<p>Key Knowledge:</p> <p>Child:</p> <ul style="list-style-type: none"> • Dark is the absence of light and we need light to be able to see. • A light source is something that produces light. • A reflector is an object that reflects light from a light source. <p>Teacher:</p> <ul style="list-style-type: none"> • Light is a form of energy that travels in straight lines. • Some light sources are natural, like the Sun or a firefly. • The Sun is the main natural source of light on Earth. • Some light sources are artificial, like a torch or a light bulb. • Artificial light sources are made by people. • They do not produce their own light. • Reflectors can be natural or artificial. 	<p>Key Knowledge:</p> <p>Child:</p> <ul style="list-style-type: none"> • Reflective materials are shiny and smooth but non-reflective materials are rough and dull. • Reflective materials are usually light in colour. • Non-reflective materials are usually dark in colour. <p>Teacher:</p> <ul style="list-style-type: none"> • Some materials are reflective, such as metals or smooth plastics, because they reflect light. • When they reflect light from a light source, reflective materials can appear lit up or show a reflected image. • Some materials are non-reflective, such as rough fabric or stone, because they do not reflect light. • They do not appear lit up or show a reflected image. 	<p>Key Knowledge:</p> <p>Child:</p> <ul style="list-style-type: none"> • Light from the Sun is damaging for vision and the skin. • Light from the sun can be dangerous and that there are ways to protect their eyes. <p>Teacher:</p> <ul style="list-style-type: none"> • The Sun gives out harmful light rays called ultraviolet (UV) light that damage our skin and eyes. UV light is invisible. • It ages our skin, causes sunburn and increases the risk of skin cancer. • There are five ways people can protect themselves from UV light. • Protection from the Sun includes sun cream, sun hats, sunglasses and staying indoors or in the shade.

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<u>LESSON 4</u>	<u>LESSON 5</u>	<u>LESSON 6</u>
<p>LEARNING INTENTION: To know that a shadow is made when an object blocks the passage of light from a light source.</p> <p>Disciplinary Knowledge:</p> <ul style="list-style-type: none"> • Make careful observations and, where appropriate, take measurements using standard units, using a range of equipment. • Record findings using simple scientific language, drawings, labelled diagrams and tables. <p>Aim: Develop scientific knowledge and conceptual understanding through the specific discipline of physics.</p>	<p>LEARNING INTENTION: To know that different objects cast different shadows.</p> <p>Disciplinary Knowledge:</p> <ul style="list-style-type: none"> • Set up simple practical enquiries, comparative and fair tests, with support. • Identify changes that relate to simple scientific ideas, when prompted. • Report on findings from enquiries, including oral and written explanations. <p>Aim: Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them.</p>	<p>LEARNING INTENTION: To know that shadows can change.</p> <p>Disciplinary Knowledge:</p> <ul style="list-style-type: none"> • Report on findings from enquiries, including oral and written explanations. <p>Aim: Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them.</p>
<p>Key Vocabulary: shadow, cast, straight, block, shape, light source, opaque, object</p>	<p>Key Vocabulary: shadow, cast, transparent, translucent, opaque, dark, light, blurry</p>	<p>Key Vocabulary: light source, change, cast, shadow, high, low</p>

<p>Recap & retrieval</p> <ul style="list-style-type: none"> • Dark is the absence of light and we need light to be able to see. • A light source is something that produces light. • A reflector is an object that reflects light from a light source. • Reflective materials are shiny and smooth but non-reflective materials are rough and dull. • Light from the Sun is damaging for vision and the skin. 	<p>Recap & retrieval</p> <ul style="list-style-type: none"> • Dark is the absence of light and we need light to be able to see. • A light source is something that produces light. • A reflector is an object that reflects light from a light source. • Reflective materials are shiny and smooth but non-reflective materials are rough and dull. • Light from the Sun is damaging for vision and the skin. • When an opaque object is placed in front of a light source, it prevents the light from passing through. 	<p>Recap & retrieval</p> <ul style="list-style-type: none"> • Dark is the absence of light and we need light to be able to see. • A light source is something that produces light. • A reflector is an object that reflects light from a light source. • Reflective materials are shiny and smooth but non-reflective materials are rough and dull. • Light from the Sun is damaging for vision and the skin. • When an opaque object is placed in front of a light source, it prevents the light from passing through. • Different objects cast different shadows due to how much light the object lets pass through.
<p>Key Knowledge:</p> <p>Child:</p> <ul style="list-style-type: none"> • When an opaque object is placed in front of a light source, it prevents the light from passing through. • This absence of light creates a dark shape on the surface behind it. <p>Teacher:</p> <ul style="list-style-type: none"> • A shadow is made when an object blocks the passage of light from a light source. • Shadows always appear on the opposite side of the light source. • A shadow is the same shape as the object that casts it because light travels in straight lines. 	<p>Key Knowledge:</p> <p>Child:</p> <ul style="list-style-type: none"> • Different objects cast different shadows due to how much light the object lets pass through. • Transparent objects cast very light shadows. • Opaque objects cast dark shadows. • Translucent objects cast light, blurry shadows. <p>Teacher:</p> <ul style="list-style-type: none"> • Transparent materials let most of the light pass through. • Translucent materials allow some light to pass through. 	<p>Key Knowledge:</p> <p>Child:</p> <ul style="list-style-type: none"> • Shadows change shape and size when a light source moves. <p>Teacher:</p> <ul style="list-style-type: none"> • When a light source is high above an object, the shadow is short. • When a light source is low down, the shadow is long.
<p>Assessment</p> <p>Cumulative quiz. Retrieval practice.</p>		