

# St John & St James' C of E Primary School

## Science Knowledge Progression Map



NB – Statements in *italics* appear in more than one theme.

	Physics					
	Seasonal changes	Forces and magnets	Light	Earth and Space	Electricity	Sound
E Y F S	<ul style="list-style-type: none"> <li>• <i>Understand that there are 4 seasons within 1 year. Begin to recognise changes in seasons. (Tree) – Reception</i></li> <li>• Observe changes across the four seasons</li> <li>• Explore the natural world around them and observe through nature walks describing the features of their environment.</li> <li>• Identifying differences between environments. (The Snow Day)</li> <li>• Observe changes in plants and animals and explain why they occur. (Leaf Man &amp; Tree)</li> </ul>	<ul style="list-style-type: none"> <li>• Explore the natural world around them and make observations of how vehicles move – <b>Reception</b></li> </ul>		<ul style="list-style-type: none"> <li>• Explore the natural world around them and make observations of polar habitats.</li> <li>• Recognise some differences between space and earth. (Astrogirl) – <b>Reception</b></li> <li>• <i>Understand that there are 4 seasons within 1 year. Begin to recognise changes in seasons. (Tree) – Reception</i></li> </ul>		<ul style="list-style-type: none"> <li>• Explore the natural world around them and make observations through creating sounds and sound walks.</li> <li>• Recognising and labelling sounds in our environment.</li> </ul>
Y e a r 1	<ul style="list-style-type: none"> <li>• Observe changes across the four seasons</li> <li>• Observe and describe weather associated with the seasons and how day length varies.</li> </ul>		<ul style="list-style-type: none"> <li>• <i>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Observe changes across the four seasons.</i></li> <li>• <i>Observe and describe weather associated with the seasons and how day length varies.</i></li> </ul>		<ul style="list-style-type: none"> <li>• <i>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</i></li> </ul>

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Y e a r 2		<ul style="list-style-type: none"> <li>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</li> </ul>				
Y e a r 3	<ul style="list-style-type: none"> <li>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.</li> </ul>	<ul style="list-style-type: none"> <li>Compare how things move on different surfaces.</li> <li>Notice that some forces need contact between two objects, but magnetic forces can act at a distance.</li> <li>Observe how magnets attract or repel each other and attract some materials and not others.</li> <li>Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet and identify some magnetic materials.</li> <li>Describe magnets as having two poles.</li> <li>Predict whether two magnets will attract or repel each other, depending on which poles are facing.</li> </ul>	<ul style="list-style-type: none"> <li>Recognise that they need light in order to see things and that dark is the absence of light.</li> <li>Notice that light is reflected from surfaces.</li> <li>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.</li> <li>Recognise that shadows are formed when an opaque object blocks the light from a light source.</li> <li>Find patterns in the way that the size of shadows changes.</li> </ul>			

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Y e a r 4					<ul style="list-style-type: none"> <li>• Identify common appliances that run on electricity.</li> <li>• Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.</li> <li>• Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery.</li> <li>• Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.</li> <li>• Recognise some common conductors and insulators, and associate metals with being good conductors.</li> </ul>	<ul style="list-style-type: none"> <li>• Identify how sounds are made, associating some of them with something vibrating.</li> <li>• Recognise that vibrations from sounds travel through a medium to the ear.</li> <li>• Find patterns between the pitch of a sound and features of the object that produced it.</li> <li>• Find patterns between the volume of a sound and the strength of the vibrations that produced it.</li> <li>• Recognise that sounds get fainter as the distance from the sound source increases.</li> </ul>
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Year 5	<ul style="list-style-type: none"> <li>• <i>Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.</li> <li>• Identify the effects of air resistance, water resistance and friction that act between moving surfaces.</li> <li>• Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</li> </ul>		<ul style="list-style-type: none"> <li>• Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.</li> <li>• Describe the movement of the Moon relative to the Earth.</li> <li>• Describe the Sun, Earth and Moon as approximately spherical bodies.</li> <li>• <i>Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.</i></li> </ul>		
Year 6	<ul style="list-style-type: none"> <li>• <i>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</i></li> </ul>		<ul style="list-style-type: none"> <li>• Recognise that light appears to travel in straight lines.</li> <li>• Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye.</li> <li>• Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes.</li> <li>• <i>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</i></li> </ul>		<ul style="list-style-type: none"> <li>• Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.</li> <li>• Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches.</li> <li>• Use recognised symbols when representing a simple circuit in a diagram.</li> </ul>	

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