

# Science Knowledge Progression – Physics

Strand	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Forces		<p>Know, explore and talk about different forces they can feel</p> <p>Know how to explore how things work</p> <p>Know that magnets can attract objects and explore the uses of them</p>			<p>Know how things move on different surfaces</p> <p>Know that some forces need contact between two objects, but magnetic forces can act at a distance</p> <p>Know that magnets attract or repel each other and attract some materials and not others</p> <p>Know how to 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</p> <p>Know that magnets have two poles</p> <p>Know how to predict whether two magnets will attract or repel each other, depending on which poles are facing</p>		<p>Know that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</p> <p>Know the effects of air resistance, water resistance and friction, that act between moving surfaces</p> <p>Know that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect</p>	

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Light		<p>Know how to create shadows</p> <p>Know that light can travel through transparent objects</p>			<p>Know that light is needed in order to see things and that dark is the absence of light</p> <p>Know that light is reflected from surfaces</p> <p>Know that light from the sun can be dangerous and that there are ways to protect their eyes</p> <p>Know that shadows are formed when the light from a light source is blocked by an opaque object</p> <p>Know that the size of shadows change and find patterns</p>			<p>Know that light appears to travel in straight lines and use this to explain:</p> <ul style="list-style-type: none"> <li>that objects are seen because they give out or reflect light into the eye</li> <li>why shadows have the same shape as the object that casts them</li> </ul> <p>Know that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes</p>

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Electricity						<p>Know common appliances that run on electricity</p> <p>Know how to construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</p> <p>Know how to predict and test 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</p> <p>Know that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</p> <p>Know some common conductors and insulators, and associate metals with being good conductors</p>		<p>Know that the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</p> <p>Know how to 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</p> <p>Know which recognised symbols to use when representing a simple circuit in a diagram</p>

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Sound		Know that sounds are caused by vibrations				<p>Know how sounds are made, associating some of them with something vibrating</p> <p>Know that vibrations from sounds travel through a medium to the ear</p> <p>Know the patterns between the pitch of a sound and features of the object that produced</p> <p>Know the patterns between the volume of a sound and the strength of the vibrations that produced it</p> <p>Know that sounds get fainter as the distance from the sound source increases</p>		

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Seasonal Changes/Earth and Space		<p>Know and understand the effect of changing seasons on the natural world around them</p> <p>Know how to observe the natural world and observe how animals act differently as the seasons change</p>	<p>Know how to observe changes across the four seasons</p> <p>Know how to observe and describe weather associated with the seasons</p> <p>Know how to observe and describe how day length varies</p>				<p>Know the movement of the Earth, and other planets, relative to the Sun in the solar system</p> <p>Know the movement of the Moon relative to the Earth</p> <p>Know the Sun, Earth and Moon as approximately spherical bodies</p> <p>Know about the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky</p>	