

*Aspiring to inspire others towards excellence, developing as individuals together in a distinctively Christian environment.*

**I Corinthians, 12:14 “For the body is not one member, but many”.**



## Science Long Term Plan

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<b>Reception</b>	<p><b>Communication and Language</b></p> <ul style="list-style-type: none"> <li>Learn new vocabulary.</li> <li>Ask questions to find out more and to check what has been said to them.</li> <li>Articulate their ideas and thoughts in well-formed sentences.</li> <li>Describe events in some detail.</li> <li>Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen.</li> <li>Use new vocabulary in different contexts.</li> </ul> <p><b>Personal, Social and Emotional Development</b></p> <ul style="list-style-type: none"> <li>Know and talk about the different factors that support their overall health and wellbeing: <ul style="list-style-type: none"> <li>regular physical activity</li> <li>healthy eating</li> <li>tooth brushing</li> <li>sensible amounts of ‘screen time’</li> <li>having a good sleep routine</li> <li>being a safe pedestrian</li> </ul> </li> </ul> <p><b>Understanding the World</b></p> <ul style="list-style-type: none"> <li>Explore the natural world around them.</li> <li>Describe what they see, hear and feel while they are outside.</li> <li>Recognise some environments that are different to the one in which they live.</li> <li>Understand the effect of changing seasons on the natural world around them.</li> </ul>					
<b>ELG</b>	<p><b>Communication and Language: Listening, Attention and Understanding</b></p> <ul style="list-style-type: none"> <li>Make comments about what they have heard and ask questions to clarify their understanding.</li> </ul> <p><b>Personal, Social and Emotional Development: Managing Self</b></p> <ul style="list-style-type: none"> <li>Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.</li> </ul> <p><b>Understanding the World: The Natural World</b></p> <ul style="list-style-type: none"> <li>Explore the natural world around them, making observations and drawing pictures of animals and plants.</li> </ul>					

	<ul style="list-style-type: none"> <li>• Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class.</li> <li>• Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</li> </ul>					
<b>Year 1</b>	<p><b>Seasonal Changes (ongoing throughout year)</b></p> <ul style="list-style-type: none"> <li>• <b>Observe the changes across the four seasons</b></li> <li>• <b>Observe and describe the weather associated with the seasons and how day length varies</b></li> </ul>	<p><b>Everyday Materials</b></p> <ul style="list-style-type: none"> <li>• Distinguish between an object and the material from which it is made</li> <li>• Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock</li> <li>• Describe the simple physical properties of a variety of everyday materials</li> <li>• Compare and group together a variety of everyday materials on the basis of their simple physical properties.</li> </ul>	<p><b>Animals Including Humans</b></p> <ul style="list-style-type: none"> <li>• Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals</li> <li>• Identify and name a variety of common animals that are carnivores, herbivores and omnivores</li> <li>• Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)</li> <li>• Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</li> </ul>	<p><b>Seasonal Changes</b></p>	<p><b>Plants</b></p> <ul style="list-style-type: none"> <li>• Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.</li> <li>• Identify and describe the basic structure of a variety of common flowering plants, including trees.</li> </ul>	
<b>Year 2</b>	<p><b>Use of Everyday Materials</b></p> <ul style="list-style-type: none"> <li>• Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</li> </ul>		<p><b>Living Things &amp; their Habitats</b></p> <ul style="list-style-type: none"> <li>• Explore and compare the differences between things that are living, dead, and things that have never been alive</li> <li>• Identify that most living things live in habitats to which they are suited and describe how different habitats</li> </ul>		<p><b>Plants</b></p> <ul style="list-style-type: none"> <li>• Observe and describe how seeds and bulb grow</li> </ul>	<p><b>Animals Including Humans</b></p> <ul style="list-style-type: none"> <li>• Notice that animals, including humans,</li> </ul>

	<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>	<p>provide for the basic needs of different kinds of animals and plants, and how they depend on each other</p> <ul style="list-style-type: none"> <li>Identify and name a variety of plants and animals in their habitats, including microhabitats</li> <li>Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food</li> </ul>	<p>into mature plants</p> <ul style="list-style-type: none"> <li>Find out and describe how plants need water, light and a suitable temperature to grown and stay healthy.</li> </ul>	<p>have offspring which grow into adults</p> <ul style="list-style-type: none"> <li>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</li> <li>Describe the importance for humans for exercising, eating the right amounts of different types of food, and hygiene</li> </ul>
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**KS1 WS**  
 Asking simple questions and recognising that they can be answered in different ways  
 Observing closely, using simple equipment  
 Performing simple tests  
 Identifying and classifying  
 Using their observations and ideas to suggest answers to questions  
 Gathering and recording data to help in answering questions

<b>Year 3</b>	<p><b>Light</b></p> <ul style="list-style-type: none"> <li>Recognise that they need light in order to see things and that darkness is the absence of light</li> </ul>	<p><b>Forces &amp; Magnets</b></p> <ul style="list-style-type: none"> <li>Compare how things move on different surfaces</li> <li>Notice that some forces need contact between</li> </ul>	<p><b>Rocks &amp; Soils</b></p> <ul style="list-style-type: none"> <li>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</li> </ul>	<p><b>Plants</b></p> <ul style="list-style-type: none"> <li>Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</li> </ul>	<p><b>Animals Including Humans</b></p> <ul style="list-style-type: none"> <li>Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat</li> </ul>
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	<ul style="list-style-type: none"> <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 the light from a light source is blocked by an opaque object</li> <li>• Find patterns in the way that the size of shadows change.</li> </ul>	<p>two objects, but magnetic forces can act at a distance</p> <ul style="list-style-type: none"> <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 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>• Describe in simple terms how fossils are formed when things that have lived are trapped within rock</li> <li>• Recognise that soils are made from rocks and organic matter</li> </ul>	<ul style="list-style-type: none"> <li>• Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant</li> <li>• Investigate the way in which water is transported within plants</li> <li>• Explore the parts that flowers play in the life cycle of flowering plant, including pollination, seed formation and seed dispersal.</li> </ul>	<ul style="list-style-type: none"> <li>• Identify that human and some other animals have skeletons and muscles for support, protection and movement.</li> </ul>
<b>Year 4</b>	<p style="text-align: center;"><b>Sound</b></p> <ul style="list-style-type: none"> <li>• Identify how sounds are made, associating some 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</li> </ul>	<p style="text-align: center;"><b>Electricity</b></p> <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 with light in a simple series circuit, based on whether or not a lamp lights in a simple series circuit</li> </ul>	<p style="text-align: center;"><b>States of Matter</b></p> <ul style="list-style-type: none"> <li>• Compare and group materials together according to whether they are solid, liquids or gases</li> <li>• Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C)</li> <li>• Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature</li> </ul>	<p style="text-align: center;"><b>Living Things &amp; their Habitats</b></p> <ul style="list-style-type: none"> <li>• Recognise that living things can be grouped in a variety of ways</li> <li>• Explore and use classification keys to help group, identify and name a variety of living things in</li> </ul>	<p style="text-align: center;"><b>Animals Including Humans</b></p> <ul style="list-style-type: none"> <li>• Describe the simple functions of the basic parts of the digestive system in humans</li> <li>• Identify the different types of teeth in humans and</li> </ul>

	<p>vibrations that produced it</p> <ul style="list-style-type: none"> <li>Recognise that sounds get fainter as the distance from the sound source increases</li> </ul>	<ul style="list-style-type: none"> <li>Recognise some common conductors and insulators, and associate metals with being good conductors</li> </ul>		<p>their local and wider environment</p> <ul style="list-style-type: none"> <li>Recognise that environments can change and this can sometimes pose dangers to living things</li> </ul>	<p>their simple functions</p> <ul style="list-style-type: none"> <li>Construct and interpret a variety of food chains, identifying producers, predators and prey</li> </ul>
<b>LKS2 WS</b>	<p>Asking relevant questions and using different types of scientific enquiries to answer them</p> <p>Setting up simple practical enquiries, comparative and fair tests</p> <p>Making systematic and careful observation and, where appropriate, taking accurate measurements using standard units, using a range of equipment including thermometers and data loggers</p> <p>Gathering, recording, classifying and presenting data in a variety of way to help in answering questions</p> <p>Recording finding using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables</p> <p>Reporting on finding from enquiries, including oral and written explanations, displays or presentations of results and conclusions</p> <p>Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions,</p> <p>Identifying differences, similarities or changes related to simple scientific ideas and processes</p> <p>Using straightforward scientific evidence to answer questions or to support their findings</p>				
<b>Year 5</b>	<p><b>Earth &amp; Space</b></p> <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>Use the idea of the Earth's rotation to explain day and night</li> </ul>	<p><b>Forces</b></p> <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,</li> </ul>	<p><b>Properties &amp; Changes of Materials</b></p> <ul style="list-style-type: none"> <li>Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets</li> <li>Know that some materials will dissolve in liquid to form a solution</li> <li>Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</li> <li>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</li> <li>Demonstrate that dissolving, mixing and changes of state are reversible changes</li> </ul>	<p><b>Living Things &amp; their Habitats</b></p> <ul style="list-style-type: none"> <li>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</li> <li>Describe the life process of reproduction in some plants and animals</li> </ul> <p><b>Animals Including Humans</b></p> <ul style="list-style-type: none"> <li>Describe changes as humans develop to old age</li> </ul>	

	and the apparent movement of the sun across the sky	allow a smaller force to have a greater effect	<ul style="list-style-type: none"> <li>Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda</li> </ul>		
<b>Year 6</b>	<p style="text-align: center;"><b>Light</b></p> <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 a light source to our eyes or from a light source to objects and then to our eyes</li> <li>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them</li> </ul>	<p style="text-align: center;"><b>Electricity</b></p> <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>	<p style="text-align: center;"><b>Living Things &amp; their Habitats</b></p> <ul style="list-style-type: none"> <li>Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals</li> <li>Give reasons for classifying plants and animals based on specific characteristics</li> </ul>	<p style="text-align: center;"><b>Evolution &amp; Inheritance</b></p> <ul style="list-style-type: none"> <li>Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</li> <li>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</li> <li>Identify how animals and plants are adapted to suit their environment in different ways and that</li> </ul>	<p style="text-align: center;"><b>Animals Including Humans</b></p> <ul style="list-style-type: none"> <li>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</li> <li>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</li> <li>Describe the ways in which nutrients and water are transported within animals,</li> </ul>

				adaptation may lead to evolution	including humans
<b>UKS2 WS</b>	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs Using test results to make predictions to set up further comparative and fair tests Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations Identifying scientific evidence that has been used to support or refute ideas or arguments				