

Marriott Primary School

Science Curriculum Progression Grid

	Working Scientifically	Biology	Chemistry	Physics	Key Knowledge and Vocabulary
FS		<p>Observe effects of physical exercise on their bodies</p> <p>Eat healthy food and understand need for variety in food</p> <p>Show understanding of good practices eg eating / exercise / sleeping / and hygiene</p> <p>Know importance for good health of exercise, a healthy diet and talk about ways to keep healthy and safe</p> <p>Talk about plants / animals / objects they observe</p> <p>Develop understanding of growth and changes over time</p> <p>Show care and concern for living things</p> <p>Ask questions about the world and or objects</p> <p>Look closely at similarities and differences, patterns and change</p> <p>Know about similarities and differences in relation to objects, materials and living things.</p>	<p>Ask questions about the world and or objects</p> <p>Look closely at similarities and differences, patterns and change</p> <p>Know about similarities and differences in relation to objects, materials and living things.</p> <p>Be interested in and describe texture of things</p>	<p>Ask questions about the world and or objects</p> <p>Talk about how things work</p> <p>Look closely at similarities and differences, patterns and change</p> <p>Know about similarities and differences in relation to objects, materials and living things.</p>	<p>Introduce 4 pieces of vocabulary</p>

<p>Year 1</p>	<p>Pupils will be taught to use the following practical scientific methods, processes and skills:</p> <p>Asking simple questions and recognising that they can be answered in different ways</p> <p>Observing closely, using simple equipment and measurement</p> <p>Performing simple tests</p> <p>Identifying and classifying</p> <p>Using their observations and ideas to suggest answers to questions</p> <p>Gathering, recording and communicating data and findings to help in answering questions.</p> <p>Use scientific language and read and spell age-appropriate scientific vocabulary</p> <p>Begin to notice patterns and relationships.</p>	<p>Senses and Bodies Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</p> <p>Animals Habitats and Classification Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals</p> <p>Identify and name a variety of common animals that are carnivores, herbivores and omnivores</p> <p>Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)</p> <p>Plants Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.</p> <p>Identify and describe the basic structure of a variety of common flowering plants, including trees.</p>	<p>Everyday materials- Properties Distinguish between an object and the material from which it is made</p> <p>Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</p> <p>Describe the simple physical properties of a variety of everyday materials</p> <p>Compare and group together a variety of everyday materials on the basis of their simple physical properties.</p>	<p>Weather and Seasons Observe changes across the four seasons</p> <p>Observe and describe weather associated with the seasons and how day length varies.</p>	<p>To know 4-6 pieces of knowledge/ concepts and 2 words at the end of each unit.</p>
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<p>Year 2</p>	<p>Pupils will be taught to use the following practical scientific methods, processes and skills:</p> <p>Asking simple questions and recognising that they can be answered in different ways</p> <p>Observing closely, using simple equipment and measurement</p> <p>Performing simple tests</p> <p>Identifying and classifying</p> <p>Using their observations and ideas to suggest answers to questions</p> <p>Gathering, recording and communicating data and findings to help in answering questions.</p> <p>Use scientific language and read and spell age-appropriate scientific vocabulary</p> <p>Begin to notice patterns and relationships.</p>	<p>Animals including their basic needs</p> <p>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</p> <p>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</p> <p>Identify that most living things live in habitats to which they are suited</p> <p>Describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other</p> <p>Identify and name a variety of plants and animals in their habitats, including micro-habitats</p> <p>Plants</p> <p>Observe and describe how seeds and bulbs grow into mature plants</p> <p>Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</p> <p>Living things- Habitats</p>	<p>Materials</p> <p>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</p> <p>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p>		<p>To know 4-6 pieces of knowledge/ concepts 4 words at the end of each unit.</p>
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		<p>Identify that most living things live in habitats to which they are suited</p> <p>Describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other</p> <p>Identify and name a variety of plants and animals in their habitats, including micro-habitats</p> <p>Food chains Describe how animals obtain their food from plants and other animals</p> <p>Understand a simple food chain, and identify and name different sources of food.</p> <p>Lifecycles Notice that animals, including humans, have offspring which grow into adults</p> <p>Explore and compare the differences between things that are living, dead, and things that have never been alive</p>			
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<p>Year 3</p>	<p>Pupils will be taught to use the following practical scientific methods, processes and skills:</p> <p>Making decisions, 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 observations using notes and simple tables</p> <p>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 ways to help in answering questions</p> <p>Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p>	<p>Animals- Skeletons and nutrition Identify that animals, including humans, need the right types and amount of nutrition, and that they</p> <p>Cannot make their own food; they get nutrition from what they eat</p> <p>Identify that humans and some animals have skeletons and muscles for support, protection and movement</p> <p>Plants- Seed dispersal Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</p> <p>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</p> <p>Investigate the way in which water is transported within plants</p> <p>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p>	<p>Rocks Compare and group together different kinds of rocks on the basis of appearance and simple physical properties</p> <p>Describe in simple terms how fossils are formed when things that have lived are trapped within rock</p> <p>Recognise that soils are made from rocks and organic matter.</p>	<p>Light Recognise that they need light in order to see things and that dark is the absence of light</p> <p>Notice that light is reflected from surfaces</p> <p>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes</p> <p>Recognise that shadows are formed when the light from a light source is blocked by a solid object</p> <p>Find patterns in the way that the size of shadows change.</p> <p>Forces inc Magnets Compare how things move on different surfaces</p> <p>Notice that some forces need contact between two objects, but magnetic forces can act at a distance</p> <p>Magnets Notice that magnetic forces can act at a distance</p> <p>Observe how magnets attract or repel each other</p>	<p>Around 6 pieces of knowledge/concepts 6 words at the end of each unit.</p>
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	<p>Reporting on findings from enquiries, using relevant scientific language, 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, patterns, 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> <p>Begin to look for naturally occurring patterns and relationships</p> <p>Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations.</p>			<p>and attract some materials and not others</p> <p>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>Describe magnets as having two poles</p> <p>Predict whether two magnets will attract or repel each other, depending on which poles are facing.</p>	
Year 4	Pupils will be taught to use the following practical scientific	<p>The Digestive system and Teeth Describe the simple functions of the basic parts of the digestive system in humans</p>	<p>States of Matter Explore a variety of everyday materials and develop simple descriptions of the states of matter</p>	<p>Electricity Identify common appliances that run on electricity</p>	Around 8 pieces of knowledge/concepts & words at the end of each unit.

<p>methods, processes and skills:</p> <p>Making decisions, 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 observations using notes and simple tables</p> <p>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 ways to help in answering questions</p> <p>Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p> <p>Reporting on findings from enquiries, using relevant scientific language, including oral and written</p>	<p>Identify the different types of teeth in humans and their simple functions</p> <p>Living Things & Habitats Recognise that living things can be grouped in a variety of ways</p> <p>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</p> <p>Recognise that environments can change and that this can sometimes pose dangers to living things.</p> <p>Construct and interpret a variety of food chains, identifying producers, predators and prey.</p>	<p>Compare and group materials together, according to whether they are solids, liquids or gases</p> <p>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)</p> <p>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p>	<p>Construct a simple series circuit, identifying/naming its basic parts, including cell, wire, bulb, switch and buzzer</p> <p>Use their circuits to create simple devices</p> <p>Draw the circuit as a pictorial representation (not necessarily using conventional circuit symbols)</p> <p>Identify whether or not a lamp will light in a simple series circuit/</p> <p>Recognise 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>Recognise some common conductors and insulators, and associate metals with being good conductors.</p> <p>Sound Identify how sounds are made, associating some of them with something vibrating</p>	
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	<p>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, patterns, 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> <p>Begin to look for naturally occurring patterns and relationships</p> <p>Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations.</p>			<p>Recognise that vibrations from sounds travel through a medium to the ear</p> <p>Find patterns between the pitch of a sound and features of the object that produced it</p> <p>Find patterns between the volume of a sound and the strength of the vibrations that produced it</p> <p>Recognise that sounds get fainter as the distance from the sound source increases.</p>	
Year 5	<p>Pupils will be taught to use the following practical scientific methods, processes and skills:</p> <p>Making decisions, asking relevant questions and</p>	<p>Animals inc Human Changes to Old Age Describe the changes as humans develop to old age.</p> <p>Living Things and Their Habitats</p>	<p>Properties and Changes of Materials Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity</p>	<p>Forces Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</p>	<p>Around 10 pieces of knowledge/concepts 10 words at the end of each unit.</p>

<p>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 observations using notes and simple tables</p> <p>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 ways to help in answering questions</p> <p>Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p> <p>Reporting on findings from enquiries, using relevant scientific language, including oral and written explanations, displays or presentations of results and conclusions</p>	<p>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</p> <p>Describe the life process of reproduction in some plants and animals.</p>	<p>(electrical and thermal), and response to magnets</p> <p>Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</p> <p>Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</p> <p>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</p> <p>Demonstrate that dissolving, mixing and changes of state are reversible changes</p> <p>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.</p>	<p>Identify the effects of air resistance, water resistance and friction, that act between moving surfaces</p> <p>Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</p> <p>Earth and Space</p> <p>Describe the movement of the Earth, and other planets, relative to the Sun in the solar system</p> <p>Describe the movement of the Moon relative to the Earth</p> <p>Describe the Sun, Earth and Moon as approximately spherical bodies</p> <p>Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.</p>	
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	<p>Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</p> <p>Identifying differences, patterns, 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> <p>Begin to look for naturally occurring patterns and relationships</p> <p>Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations.</p>				
Year 6	<p>Pupils will be taught to use the following practical scientific methods, processes and skills:</p> <p>Making decisions, asking relevant questions and using different types of scientific enquiries to answer them</p>	<p>Living Things and Their Habitats</p> <p>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</p> <p>Give reasons for classifying plants and animals based on specific characteristics.</p>		<p>Light</p> <p>Recognise that light appears to travel in straight lines</p> <p>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</p>	<p>Around 12 pieces of knowledge/concepts</p> <p>12 words at the end of each unit.</p>

<p>Setting up simple practical enquiries, comparative and fair tests</p> <p>Making systematic and careful observations using notes and simple tables</p> <p>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 ways to help in answering questions</p> <p>Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p> <p>Reporting on findings from enquiries, using relevant scientific language, 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>Evolution and Inheritance Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</p> <p>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</p> <p>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p> <p>The Circulatory System Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</p> <p>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</p> <p>AIH3 describe the ways in which nutrients and water are transported within animals, including humans.</p>			<p>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</p> <p>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</p> <p>Electricity Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</p> <p>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>Use recognised symbols when representing a simple circuit in a diagram.</p>	
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	<p>Identifying differences, patterns, 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> <p>Begin to look for naturally occurring patterns and relationships</p> <p>Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations.</p>				
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