



Small School. Big Hearts. Big Ambitions

Progression of skills and knowledge in Science

I pray that your love for each other will overflow more and more, and that you will keep on growing in knowledge and understanding. Philippians 1:9

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Working Scientifically	<p>Learn new vocabulary to use in different contexts</p> <p>Ask questions to find out more and to check what has been said to them</p> <p>Articulate their ideas and thoughts in well-formed sentences.</p> <p>Describe events in some detail</p> <p>Use talk to help work out problems and organise thinking</p> <p>Explain how things work and why things might happen</p> <p>Make comments about what they have heard and</p>	<ul style="list-style-type: none"> • Ask simple questions and recognise that they can be answered in different ways. • Use simple equipment to observe closely • Perform simple tests • Identify and classify • Use his/her observations and ideas to suggest answers to questions • Gather and record data to help in answering questions 	<ul style="list-style-type: none"> • Ask relevant questions and use different types of scientific enquiries to answer them • Set up simple practical enquiries, comparative and fair tests • Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a • range of equipment, including thermometers and data loggers • Gather, record, classify and present data in a variety of ways to help with answering questions • Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • Identify differences, similarities or changes related to simple scientific ideas and processes 	<ul style="list-style-type: none"> • Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary • Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when • appropriate • Record data and results of increasing complexity, using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs • Use test results to make predictions to set up further comparative and fair tests • Report and present 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 • Identify scientific evidence that has been used to support or refute ideas or arguments 			

	ask questions to clarify their understanding (ELG)			<ul style="list-style-type: none"> Use straightforward scientific evidence to answer questions or to support his/her findings 			
Animals including Humans	<p>Know and talk about the different factors that support their overall health and wellbeing: - regular physical activity, healthy eating, toothbrushing, sensible amounts of 'screen time' - having a good sleep routine, being a safe pedestrian</p> <p>Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices (ELG)</p>	<ul style="list-style-type: none"> Identify and name a variety of common British animals that are birds, fish, amphibians, reptiles, mammals and invertebrates Identify and name a variety of common animals that are carnivores, herbivores and omnivores Describe and compare the structure of a variety of common animals (birds, fish, amphibians, reptiles, mammals and invertebrates, including pets) 	<ul style="list-style-type: none"> Understand that animals, including humans, have offspring which grow into adults Describe the basic needs of animals, including humans, for survival Describe the importance for humans of exercise, eating the right amounts of different types of food and hygiene 	<ul style="list-style-type: none"> Identify that animals, including humans, need the right types of nutrition, and they cannot make their own food; they get nutrition from what they eat Identify that humans and some animals have skeletons and muscles for support, protection and movement 	<ul style="list-style-type: none"> Describe the simple functions of the basic parts of the digestive system in humans Identify the different types of teeth in humans and describe their simple functions Construct and interpret a variety of food chains, identifying producers, predators and prey 	<ul style="list-style-type: none"> Describe the changes as humans develop from birth to old age in detail 	<ul style="list-style-type: none"> Identify and name the main parts of the human circulatory system and describe the functions of the heart, blood vessels and blood Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function Describe the ways in which nutrients and water are transported within animals, including humans

		<ul style="list-style-type: none"> Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense 					
Living things and their habitats	<p>Explore the natural world around them</p> <p>Describe what they see, hear and feel while they are outside</p> <p>Notice that some habitats are different to the one they live in.</p> <p>Explore the natural world around them, making observations and drawing pictures of what they see (ELG)</p> <p>Know some similarities and differences between the natural world around them and contrasting environments, drawing on their</p>		<ul style="list-style-type: none"> Explore and compare the differences between things that are living, dead and things that have never been alive Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other Identify and name a variety of plants and animals in their habitats, 		<ul style="list-style-type: none"> Recognise that living things can be grouped in a variety of ways Explore and use classification keys to help group, identify and name a variety of living things in the local and wider environment Recognise that environments can change and that this can sometimes pose dangers to living things 	<ul style="list-style-type: none"> Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird Describe the life process of reproduction in some plants and animals 	<ul style="list-style-type: none"> Describe how living are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals Give reasons for classifying plants and animals based on specific characteristics

	<p>experiences and what has been read in class. (ELG)</p>		<p>including micro-habitats</p> <ul style="list-style-type: none"> 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 				
Plants	<p>Explore the natural world around them, making observations and drawing pictures of plants (ELG)</p>	<ul style="list-style-type: none"> Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees Identify and describe the basic structure of a variety of common flowering plants, including trees 	<ul style="list-style-type: none"> Observe and describe how seeds and bulbs grow into mature plants Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy 	<ul style="list-style-type: none"> Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers 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 Investigate the way in which water is transported within plants Explore the part that flowers play in the life cycle 			

				of flowering plants, including pollination, seed formation and seed dispersal			
Seasonal Changes	<p>Understand the effect of changing seasons on the natural world around them.</p> <p>Understand some important processes and changes in the natural world around them, including the seasons (ELG)</p>	<ul style="list-style-type: none"> • Observe changes across the four seasons • Observe and describe the weather associated with the seasons and how day length varies 					
Materials	<p>Understand some important processes and changes in the natural world</p> <p>Explain how things work and why things might happen</p>	<ul style="list-style-type: none"> • Distinguish between an object and the material from which it is made • Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock • Describe simple physical 	<ul style="list-style-type: none"> • Identify and compare the suitability of everyday materials including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses • Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, 			<ul style="list-style-type: none"> • Group together everyday materials based on evidence from comparative and fair tests, including their hardness, solubility, transparency conductivity and response to magnets • Know that some materials will dissolve in liquid to form a solution and can 	

		<p>properties of a variety of everyday materials</p> <ul style="list-style-type: none">• Compare and group together a variety of everyday materials on the basis of their simple physical properties	<p>twisting and stretching</p>			<p>describe how to recover a substance from a solution</p> <ul style="list-style-type: none">• Use knowledge of solids, liquids and gases to decide how mixtures might be separated including through filtering, sieving and evaporating• Give reasons based on evidence from comparative and fair tests for the particular uses of everyday materials including metals, woods and plastics• Demonstrate that dissolving, mixing and changes of state are reversible changes• Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes	
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						associated with burning and the action of acid on bicarbonate of soda	
Rocks				<ul style="list-style-type: none"> • Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties • Describe how fossils are formed when things that have lived are trapped within rocks • Recognise that soils are made from rocks and organic matter 			
Light				<ul style="list-style-type: none"> • Recognise that I need light in order to see things and that dark is the absence of light • Notice light is reflected from surfaces • Recognise that light from the sun can be dangerous and that there are ways to protect my eyes 			<ul style="list-style-type: none"> • Recognise that light appears to travel in straight lines • 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 • Explain that we see things because light travels from light sources to our

				<ul style="list-style-type: none"> Recognise that shadows are formed when the light from a light source is blocked by an opaque object Find patterns in the way that the size of shadows change 			<p>eyes or from light sources to objects and then to our eyes</p> <ul style="list-style-type: none"> Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them
Forces and magnets				<ul style="list-style-type: none"> Compare how things move on different surfaces Notice that some forces need contact between two objects, but magnetic forces can act at a distance Observe how magnets attract or repel each other and attract some materials and not others Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some 		<ul style="list-style-type: none"> Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object Identify the effects of air resistance, water resistance and friction that act between moving surfaces Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect 	

				<p>magnetic materials</p> <ul style="list-style-type: none">• Describe magnets as having two poles• Predict whether two magnets will attract or repel each other, depending on which poles are facing			
Sound					<ul style="list-style-type: none">• I can identify how sounds are made, associating some of them with something vibrating• I can recognise that vibrations from sounds travel through a medium to the ear• Find patterns between the pitch of a sound and features of the object that produced it• Find patterns between the volume of a sound and the strength of the vibrations that produced it		

					<ul style="list-style-type: none"> Recognise that sounds get fainter as the distance from the sound source increases 		
States of Matter	Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter				<ul style="list-style-type: none"> Compare and group materials together according to whether they are solids, liquids or gases Observe that some materials look different or appear to disappear when they are heated or cooled and measure or research the temperature at which this happens in degrees Celsius Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature 		
Earth and Space					<ul style="list-style-type: none"> Describe the movement of the Earth and other planets in relation to the 		

						<p>sun in the solar system</p> <ul style="list-style-type: none"> • Describe the movement of the moon in relation to the Earth • Describe the sun, Earth and moon as approximately spherical bodies • Use the idea of Earth's rotation to explain day and night and the apparent movement of the sun across the sky 	
Electricity					<ul style="list-style-type: none"> • Identify common appliance that run on electricity • Construct a simple series circuit and name its basic parts including cells, wires, bulbs, switches and buzzers • Identify whether or not a lamp will light in a simple series circuit, 		<ul style="list-style-type: none"> • Associate the brightness of a lamp or volume of a buzzer with the number and voltage of cells used in the circuit • Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness or buzzers and the on/off

					<p>based on whether or not the lamp is part of a complete loop with a battery</p> <ul style="list-style-type: none"> Recognise that switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit Recognise some common conductors and insulators and associate metals with being good conductors 		<p>position of switches</p> <ul style="list-style-type: none"> Use the recognised symbols when representing a simple circuit in a diagram
Evolution and inheritance							<ul style="list-style-type: none"> Recognise that living things have changed over time and that fossils provide information about living things that inhabited the

							<p>Earth millions of years ago</p> <ul style="list-style-type: none">• Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents• Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution
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