



St. Peter's C of E Primary School – Science Curriculum Progression

<p>EYFS Maple and Oak Understanding the World (The Natural World) Explore the natural world around them, making observations and drawing pictures of animals and plants. 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. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</p>		<p>KS1 Hawthorn, Rowan and Beech </p>	<p>LKS2 Larch, Willow and Alder </p>	<p>UKS2 Ash, Sycamore and Elm </p>
	<p>Working scientifically</p>	<p>Pupils should be taught to: During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:</p> <ul style="list-style-type: none"> • 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. 	<p>During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:</p> <ul style="list-style-type: none"> • asking relevant questions and using different types of scientific enquiries to answer them • setting up simple practical enquiries, comparative and fair tests • making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • gathering, recording, classifying and presenting data in a variety of ways to help in answering questions • recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • identifying differences, similarities or changes related to simple scientific ideas and processes • using straightforward scientific evidence to answer questions or to support their findings. 	<p>During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:</p> <ul style="list-style-type: none"> • 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.

	<p>Ask simple scientific questions Use simple equipment to make observations Carry out simple tests Identify and classify things Suggest what I have found out Use simple data to answer questions</p>	<p>Ask relevant scientific questions Use observations and knowledge to answer scientific questions Set up a simple enquiry to explore a scientific question Set up a test to compare two things Set up a fair test and explain why it is fair Make careful and accurate observations, including the use of standard units Use equipment including thermometers and data loggers to make measurements Gather, record, classify and present data in different ways to answer scientific questions Use diagrams, keys, bar charts and table; using scientific language Use finding to report in different ways, including oral and written explanations, presentation Draw conclusions and suggest improvements Make a prediction with reason Identify differences, similarities and changes related to an enquiry</p>	<p>Read, spell and pronounce scientific vocabulary accurately Plan different types of scientific enquiry Control variables in an enquiry Measure accurately and precisely using a range of equipment Record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs Use the outcome of test result to make predictions and set up a further comparative fair test Report finding from enquiries in a range of ways Explain a conclusion from an enquiry Explain casual relationships in an enquiry Relate the outcome from an enquiry to scientific knowledge in order to state whether evidence supports or refutes an argument or theory</p>
	<p>Living things and their habitats</p> <p>Pupils should be taught to:</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, including micro-habitats • 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. 	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> • recognise that living things can be grouped in a variety of ways- Y4 • explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment- Y4 • recognise that environments can change and that this can sometimes pose dangers to living things-Y4 	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> • describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird- Y5 • describe the life process of reproduction in some plants and animals- Y5 • 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- Y6 • give reasons for classifying plants and animals based on specific characteristics – Y6

		<p>Identify things that are living, dead and never lived</p> <p>Describe how a specific habitat provides for the basic needs for things living there</p> <p>Identify and name plants and animals in a range of habitats</p> <p>Match living things to their habitat</p> <p>Describe how animals find their food</p> <p>Name some different sources of food for animals</p> <p>Explain a simple food chain</p>	<p>Group living things in different ways</p> <p>Use classification keys to group, identify and name living things</p> <p>Create classification keys to group, identify and name living things</p> <p>Describe how changes to an environment could endanger living things</p>	<p>Describe the life cycle of different living things</p> <p>Describe the differences between different life cycles</p> <p>Describe the process of reproduction in plants</p> <p>Describe the process of reproduction in animals</p> <p>Classify living things into broad groups, according to observable characteristics and based on similarities and differences</p> <p>Describe how living things have been classified</p> <p>Give reasons for classifying plants and animal in a specific way</p>
	Plants	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> • identify and name a variety of common wild and garden plants, including deciduous and evergreen trees- Y1 • identify and describe the basic structure of a variety of common flowering plants, including trees- Y1 • 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. 	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> • identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers – Y3 • 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- Y3 • investigate the way in which water is transported within plants- Y3 • explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal –Y3 	
		<p>Name a variety of common wild and garden plants</p> <p>Name the petal, stem, leaf and root of a plant</p> <p>Name the roots, trunk, branches and leaves of a tree</p> <p>Describe how seeds and bulbs grow into plants</p> <p>Describe what plants need in order to grow and stay healthy</p>	<p>Describe the function of different parts of flowering plants and trees</p> <p>Explore and describe the needs of different plants for survival</p> <p>Explore and describe how water is transported within plants</p> <p>Describe the plant life cycle, especially the importance of flowers</p>	

	Animals, including humans	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> • identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals- Y1 • identify and name a variety of common animals that are carnivores, herbivores and omnivores- Y1 • describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)- Y1 • identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense –Y2 • notice that animals, including humans, have offspring which grow into adults- Y2 • find out about and describe the basic needs of animals, including humans, for survival (water, food and air)- Y2 • describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene Y2 	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> • 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- Y3 • identify that humans and some other animals have skeletons and muscles for support, protection and movement –Y3 • describe the simple functions of the basic parts of the digestive system in humans- Y4 • identify the different types of teeth in humans and their simple functions- Y4 • construct and interpret a variety of food chains, identifying producers, predators and prey Y4 	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> • describe the changes as humans develop to old age- Y5 • identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood- Y6 • recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function- Y6 • describe the ways in which nutrients and water are transported within animals, including humans Y6
		<p>Name and sort a variety of animals including fish, amphibians, reptile, birds and mammals Classify and name animals by what they eat Sort living and non-living things Name the parts of the human body that I can see Link the senses to the correct parts of the human body Explain the basic stages in a life cycle for animals, including humans Describe what animals and humans need to survive Describe why exercise, a balanced diet and good hygiene are important for humans</p>	<p>Explain the importance of a nutritious, balanced diet Explain how nutrients, water and oxygen are transported within animals and humans Describe and explain the skeletal system of a human Describe and explain the muscular system of a human Identify and name the parts of the human digestive system Describe the functions of the organs in the human digestive system Identify and describe the different types of teeth in humans Describe the functions of differed human teeth Use food chains to identify producers, predators and prey Construct food chains to identify producers, predators and prey</p>	<p>Create a timeline to indicate stages of groth in humans Identify and name the main parts of the human circulatory system Describe the function of the heart, blood vessel and blood Discuss the impact of diet, exercise, drugs and life style on health Describe the ways in which nutrient and water are transported in animals, including humans</p>

	Materials	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> • distinguish between an object and the material from which it is made- Y1 • identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock- Y1 • describe the simple physical properties of a variety of everyday materials- Y1 • compare and group together a variety of everyday materials on the basis of their simple physical properties –Y1 • identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses- Y2 • find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching Y2 	<p>In Rocks, Pupils should be taught to:</p> <ul style="list-style-type: none"> • compare and group together different kinds of rocks on the basis of their appearance and simple physical properties- Y3 • describe in simple terms how fossils are formed when things that have lived are trapped within rock- Y3 • recognise that soils are made from rocks and organic matter Y3 	<p>In Properties and Changes of materials, Pupils should be taught to:</p> <ul style="list-style-type: none"> • 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- Y5 • know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution- Y5 • use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating- Y5 • give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic- Y5 • demonstrate that dissolving, mixing and changes of state are reversible changes- Y5 • 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- Y5.
--	-----------	--	--	---

		<p>Distinguish between an object and the material it is made from</p> <p>Explain the materials that an object is made from</p> <p>Name wood, plastic, glass, metal, water and rock</p> <p>Describe the properties of everyday materials</p> <p>Group objects based on the materials they are made from</p> <p>Identify and name a range of materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard</p> <p>Suggest why materials might or might not be used for a specific job</p> <p>Explore how shapes can be changed by squashing, bending, twisting and stretching</p>	<p>Compare and group rocks based on their appearance and physical properties, giving a reason</p> <p>Describe how fossils are formed</p> <p>Describe how soil is made</p> <p>Describe and explain the difference between sedimentary and igneous rock</p>	<p>Compare and group materials based on their properties</p> <p>Describe how a material dissolves to form a solution; explaining the process of dissolving</p> <p>Describe and show how to recover a substance from a solution</p> <p>Describe how some materials can be separated</p> <p>Demonstrate how materials can be separated</p> <p>Know and demonstrate that some changes are reversible and some are not</p> <p>Explain how some changes result in the formation of a new material and that this is usually irreversible</p> <p>Discuss reversible and irreversible changes</p> <p>Give evidence reasons why materials should be used for specific purposes</p>
	Seasonal changes	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> observe changes across the four seasons- Y1 observe and describe weather associated with the seasons and how day length varies Y1 		
		<p>Observe and comment on changes in the seasons</p> <p>Name the seasons and suggest the type of weather in each season</p>		

	Light		<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> • recognise that they need light in order to see things and that dark is the absence of light- Y3 • notice that light is reflected from surfaces- Y3 • recognise that light from the sun can be dangerous and that there are ways to protect their eyes- Y3 • recognise that shadows are formed when the light from a light source is blocked by an opaque object- Y3 • find patterns in the way that the size of shadows change Y3 	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> • recognise that they need light in order to see things and that dark is the absence of light- Y5 • notice that light is reflected from surfaces- Y5 • recognise that light from the sun can be dangerous and that there are ways to protect their eyes- Y5 • recognise that shadows are formed when the light from a light source is blocked by an opaque object- Y5 • find patterns in the way that the size of shadows change Y5 • recognise that light appears to travel in straight lines- y6 • 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- Y6 • 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- Y6 • use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them -Y6
			<p>Describe what dark is Explain that light is needed in order to see Explain that light is reflected from a surface Explain and demonstrate how a shadow is formed Explain and demonstrate how a shadow is formed Explore shadow size and explain Explain the danger of direct sunlight and describe how to keep protected</p>	<p>Explain how light travels Explain and demonstrate how we see objects Explain why shadows have the same shape as the object that casts them Explain how simple optical instruments work e.g. periscope, telescope, binoculars</p>

	Forces and magnets		<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> • compare how things move on different surfaces- Y3 • notice that some forces need contact between two objects, but magnetic forces can act at a distance- Y3 • observe how magnets attract or repel each other and attract some materials and not others- Y3 • 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- Y3 • describe magnets as having two poles- Y3 • predict whether two magnets will attract or repel each other, depending on which poles are facing –Y3 	<p>Pupils should be taught to:</p> <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- Y6 • identify the effects of air resistance, water resistance and friction, that act between moving surfaces- Y6 • recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect -Y6
			<p>Explore and describe how objects move on different surfaces Explain how some forces require contact and some do not, giving examples Explore and explain how objects attract and repel in relation to objects and other magnets Predict whether objects will be magnetic and carry out an enquiry to test this out Describe how magnets work Predict whether magnets will attract or repel and give a reason</p>	<p>Explain what gravity is and its impact on our lives Identify and explain the effect of air resistance Identify and explain the effect of water resistance Explain how levers, pulleys and gears allow a smaller force to have a greater effect</p>

	Earth and Space			<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> describe the movement of the Earth, and other planets, relative to the Sun in the solar system- Y5 describe the movement of the Moon relative to the Earth- Y5 describe the Sun, Earth and Moon as approximately spherical bodies- Y5 use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky Y5
				<p>Describe and explain the movement of the Earth and other planets relative to the Sun Describe and explain the movement of the Moon relative to the Earth Explain and demonstrate how night and day are created Describe the Sun, Earth and Moon</p>
	Electricity		<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> identify common appliances that run on electricity- Y4 construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers- Y4 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- Y4 recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit- Y4 recognise some common conductors and insulators, and associate metals with being good conductors Y4 	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit- Y6 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- Y6 use recognised symbols when representing a simple circuit in a diagram y6

			<p>Identify and name applications that require electricity to function</p> <p>Construct a series circuit</p> <p>Identify and name the components in a series circuit</p> <p>Draw a circuit diagram</p> <p>Predict and test whether a lamp will light within a circuit</p> <p>Describe the function of a switch in a circuit</p> <p>Describe the difference between a conductor and insulators; giving example of each</p>	<p>Explain how the number and voltage of cells in a circuit links to the brightness of a lamp or the volume of a buzzer</p> <p>Compare and give reasons for why components work and do not work in a circuit</p> <p>Draw circuit diagrams using correct symbols</p>
	Evolution and inheritance			<p>Pupils should be taught to:</p> <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 Earth millions of years ago- Y6 • recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents- Y6 • identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution Y6
				<p>Describe the Earth and living things have changed over time</p> <p>Explain how fossils can be used to find out about the past</p> <p>Explain about reproduction and offspring</p> <p>Explain how animal and plants are adapted to suit their environment</p> <p>Link adaption over time to evolution</p> <p>Explain evolution</p>

	Sound		<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> • identify how sounds are made, associating some of them with something vibrating- Y4 • recognise that vibrations from sounds travel through a medium to the ear- Y4 • find patterns between the pitch of a sound and features of the object that produced it- Y4 • find patterns between the volume of a sound and the strength of the vibrations that produced it- Y4 • recognise that sounds get fainter as the distance from the sound source increases –Y4 	
			<p>Describe how sound is made Explain how sound travels from a source to our ears Explain the place of vibration in hearing Explore the correlation between pitch and the object producing a sound Explore the correlation between the volume of a sound and the strength of the vibrations that produced it Describe what happens to a sound as it travels away from its source</p>	
	States of matter		<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> • compare and group materials together, according to whether they are solids, liquids or gases- Y4 • 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)- Y4 • identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature -Y4 	

			<p>Group materials based on their state of matter Describe how some materials can change state Explore how materials change state Measure the temperature at which materials change state Describe the water cycle Explain the part played by evaporation and condensation in the water cycle</p>	
--	--	--	---	--