



Science National Curriculum Overview



	Autumn	Spring	Summer
Nursery	<p>All about me <i>(Living things and their habitats, Animals including humans, Evolution and inheritance, Sound)</i></p> <ul style="list-style-type: none"> To begin to make sense of their own life-story and family's history. To show interest in different occupations. To continue developing positive attitudes about the differences between people. To know that there are different countries in the world and talk about the differences they have experienced or seen in photos. To begin to understand the need to respect and care for the natural environment and all living things. 	<p>Polar Explorers <i>(Plants, living things and their habitat, Animals including humans, Evolution and inheritance, Seasonal change, Materials)</i></p> <ul style="list-style-type: none"> To show interest in different occupations. To begin to understand the need to respect and care for the natural environment and all living things. To know that there are different countries in the world and talk about the differences they have experienced or seen in photos. To use all their senses in hands-on exploration of natural materials. To explore collections of materials with similar and/or different properties. To begin to understand the need to respect and care for the natural environment and all living things. To understand the key features of the life cycle of a plant and an animal. 	<p>Growing Things <i>(Plants, Living things and their habitats, Animals including humans, Evolution and inheritance, Seasonal change, Materials, Light, Rocks)</i></p> <ul style="list-style-type: none"> To use all their senses in hands-on exploration of natural materials. To explore collections of materials with similar and/or different properties. To plant seeds and care for growing plants. To understand the key features of the life cycle of a plant and an animal. To begin to understand the need to respect and care for the natural environment and all living things.
	<p>Light and dark <i>(Living things and their habitats, Animals including humans, Materials, Light, Forces, Sound, Electricity)</i></p> <ul style="list-style-type: none"> To continue developing positive attitudes about the differences between people. To use all their senses in hands-on exploration of natural materials. To explore collections of materials with similar and/or different properties. To explore how things work. To explore and talk about different forces they 	<p>New Life <i>(Plants, Living things and their habitats, animals including humans, Materials, Evolution and inheritance)</i></p> <ul style="list-style-type: none"> To explore how things work. To understand the key features of the life cycle of a plant and an animal. To begin to understand the need to respect and care for the natural environment and all living things. To use all their senses in hands-on exploration of natural materials. 	<p>Under the Sea <i>(Plants, Living things and their habitats, Animals including humans, Evolution and inheritance, Materials, Rocks)</i></p> <ul style="list-style-type: none"> To use all their senses in hands-on exploration of natural materials. To explore collections of materials with similar and/or different properties. To show interest in different occupations. To begin to understand the need to respect and care for the natural environment and all living things. To know that there are different countries in the



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	<p>can feel.</p> <ul style="list-style-type: none"> To talk about the differences between materials and changes they notice. 	<ul style="list-style-type: none"> To explore collections of materials with similar and/or different properties. To begin to understand the need to respect and care for the natural environment and all living things. 	<p>world and talk about the differences they have experienced or seen in photos.</p>
	<p>Characteristics of effective learning</p> <ul style="list-style-type: none"> Playing and exploring – children investigate and experience things, and ‘have a go’. Creating and thinking critically – children have and develop their own ideas, make links between ideas, and develop strategies for doing things. 		
Reception	<p style="text-align: center;">All about me</p> <p><i>(Living things and their habitats, Animals including humans, Evolution and inheritance, Sound)</i></p> <ul style="list-style-type: none"> To talk about members of their immediate family and community. To name and describe people who are familiar to them. To understand that some places are special to members of their community. To recognise that people have different beliefs and celebrate special times in different ways. To recognise some environments that are different to the one in which they live. <p style="text-align: center;">Light and dark (Festivals and forces)</p> <p><i>(Living things and their habitats, Animals including humans, Materials, Light, Forces, Sound)</i></p> <ul style="list-style-type: none"> To comment on images of familiar situations in the past. To understand that some places are special to members of their community. 	<p style="text-align: center;">Polar Explorers</p> <p><i>(Plants, Living things and their habitat, Animals including humans, Evolution and inheritance, Seasonal change, Material)</i></p> <ul style="list-style-type: none"> To compare and contrast characters from stories, including figures from the past. To draw information from a simple map. To recognise some similarities and differences between life in this country and life in other countries. To explore the natural world around them. To describe what they see, hear and feel whilst outside. To recognise some environments that are different from the one in which they live. <p style="text-align: center;">New Life</p> <p><i>(Plants, Living things and their habitats, animals including humans, Materials, Evolution and inheritance)</i></p> <ul style="list-style-type: none"> To compare and contrast characters from stories, including figures from the past. To recognise that people have different beliefs and celebrate special times in different ways. 	<p style="text-align: center;">Growing Things</p> <p><i>(Plants, Living things and their habitats, Animals including humans, Evolution and inheritance, Seasonal change, Materials, Light, Rocks)</i></p> <ul style="list-style-type: none"> To draw information from a simple map. To explore the natural world around them. To describe what they see, hear and feel whilst outside. To recognise some environments that are different to the one in which they live. To understand the effect of changing seasons on the natural world around them. <p style="text-align: center;">Under the Sea</p> <p><i>(Plants, Living things and their habitats, Animals including humans, Evolution and inheritance, Materials, Rocks)</i></p> <ul style="list-style-type: none"> To compare and contrast characters from stories, including figures from the past. To draw information from a simple map.



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	<ul style="list-style-type: none"> To recognise that people have different beliefs and celebrate special times in different ways. To explore the natural world around them. To describe what they see, hear and feel whilst outside. To understand the effect of changing seasons on the natural world around them. 	<ul style="list-style-type: none"> To understand that some places are special to members of their community. To explore the natural world around them. To describe what they see, hear and feel whilst outside. To understand the effect of changing seasons on the natural world around them. To recognise some environments that are different to the one in which they live. To comment on images of familiar situations in the past. 	<ul style="list-style-type: none"> To recognise some similarities and differences between life in this country and life in other countries. To explore the natural world around them. To describe what they see, hear and feel whilst outside. To recognise some environments that are different from the one in which they live. To comment on images of familiar situations in the past.
	<p>Characteristics of effective learning</p> <ul style="list-style-type: none"> Playing and exploring – children investigate and experience things, and ‘have a go’. Creating and thinking critically – children have and develop their own ideas, make links between ideas, and develop strategies for doing things. 		
Year 1	<p>Animals including humans</p> <ul style="list-style-type: none"> To identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. To identify and name a variety of common animals that are carnivores, herbivores and omnivores. To describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets). To 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 style="text-align: center;">Seasonal Changes (Taught across the year)</p> <ul style="list-style-type: none"> To observe changes across the four seasons. 	<p>Everyday Materials</p> <ul style="list-style-type: none"> To distinguish between an object and the material from which it is made. To identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. To describe the simple physical properties of a variety of everyday materials. To compare and group together a variety of everyday materials on the basis of their simple physical properties. <p style="text-align: center;">Light and Dark (Non-statutory)</p> <ul style="list-style-type: none"> To identify and name the sources of light. To identify and name sources of light that we can see. To explain what darkness is. 	<p>Plants</p> <ul style="list-style-type: none"> To identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. To identify and describe the basic structure of a variety of common flowering plants, including trees. <p style="text-align: center;">Forces (Non-statutory)</p> <ul style="list-style-type: none"> To observe and describe different ways of moving. To describe and show how to make something move, e.g. push and pull. To describe and explain changes in movement as a result of an action.



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	<ul style="list-style-type: none"> To observe and describe weather associated with the seasons and how day length varies. 	<ul style="list-style-type: none"> To compare sources of light (brightest, duller, darker, lighter). To describe how light is different during the night and day. 	
	Working Scientifically <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. 		
Year 2	<p style="text-align: center;">Animals, including humans</p> <ul style="list-style-type: none"> To notice that animals, including humans, have offspring which grow into adults. To find out about and describe the basic needs of animals, including humans, for survival (water, food and air). To describe the importance for humans of exercise, eating the right amounts of different types of foods, and hygiene. <p style="text-align: center;">Light and Electricity (Non-statutory)</p> <ul style="list-style-type: none"> To demonstrate their understanding that many everyday appliances require electricity and to group appliances into categories. To understand that electricity can be dangerous and appliances must be used safely. 	<p style="text-align: center;">Uses of everyday materials</p> <ul style="list-style-type: none"> To identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses To find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. <p style="text-align: center;">Plants</p> <ul style="list-style-type: none"> To observe and describe how seeds and bulbs grow into mature plants. To find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. 	<p style="text-align: center;">Living things and their habitats</p> <ul style="list-style-type: none"> To explore and compare the differences between things that are living, dead, and things that have never been alive. To 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. To identify and name a variety of plants and animals in their habitats, including microhabitats. To 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 style="text-align: center;">Outdoor science (Non-statutory)</p>



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	<ul style="list-style-type: none"> To make a circuit using batteries, bulbs, wires and to make the bulb/buzzer work. 		<ul style="list-style-type: none"> To explore working scientifically objectives through a range of practical investigations. Children to create their own questions about learning across the year (animals, materials, plants, living things). Explore different ways of answering these questions.
	Working Scientifically <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. 		
Year 3	<p style="text-align: center;">Animals, including humans</p> <ul style="list-style-type: none"> To 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. To identify that humans and some other animals have skeletons and muscles for support, protection and movement. <p style="text-align: center;">Forces and Magnets</p> <ul style="list-style-type: none"> To compare how things move on different surfaces. To notice that some forces need contact between two object but magnetic forces can act at a distance 	<p style="text-align: center;">Rocks</p> <ul style="list-style-type: none"> To compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. To describe in simple terms how fossils are formed when things that have lived are trapped within rock. To recognise that soils are made from rocks and organic matter. <p style="text-align: center;">Light</p> <ul style="list-style-type: none"> To recognise that they need light in order to see things and that dark is the absence of light. To notice that light is reflected from surfaces. To recognise that light from the sun can be dangerous and that there are ways to protect their eyes. 	<p style="text-align: center;">Plants</p> <ul style="list-style-type: none"> To identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. To 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. To investigate the way in which water is transported within plants. To explore the part that flowers play in the life cycle of flowering plants, pollination, seed formation and seed dispersal. <p style="text-align: center;">Food Science (Non-statutory)</p>



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	<ul style="list-style-type: none"> To observe how magnets attract or repel each other and attract some materials and not others. 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. To describe magnets as having two poles. To predict whether two magnets will attract or repel each depending on which poles are facing. 	<ul style="list-style-type: none"> To recognise that shadows are formed when the light from a light source is blocked by an opaque object. To find patterns in the way that the size of shadows change. 	<ul style="list-style-type: none"> Recap knowledge of food groups and what makes a balanced diet. Explore what taste buds are and how they work. Explore plants that can and can't be eaten. Explore the difference between fatty foods and fat free foods. Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. Setting up simple practical enquiries, comparative and fair tests. Identifying differences, similarities or changes related to simple scientific ideas and processes.
	<p>Working Scientifically</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. 		
Year 4	<p>Animals, including humans</p> <ul style="list-style-type: none"> To describe the simple functions of the basic parts of the digestive system in humans. To identify the different types of teeth in humans and their simple functions. 	<p>States of Matter</p> <ul style="list-style-type: none"> To compare and group materials together, according to whether they are solids, liquids or gases. To observe that some materials change state when they are heated or cooled, and measure or 	<p>Living things and their habitats</p> <ul style="list-style-type: none"> To recognise that living things can be grouped in a variety of ways. To explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.



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	<ul style="list-style-type: none"> To construct and interpret a variety of food chains, identifying producers, predators and prey. <p style="text-align: center;">Electricity</p> <ul style="list-style-type: none"> To identify common appliances that run on electricity. To construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. To 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. To recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. To recognise some common conductors and insulators, and associate metals with being good conductors. 	<p>research the temperature at which this happens in degrees Celsius (°C).</p> <ul style="list-style-type: none"> To identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. <p style="text-align: center;">Sound</p> <ul style="list-style-type: none"> To identify how sounds are made, associating some of them with something vibrating. To recognise that vibrations from sounds travel through a medium to the ear. To find patterns between the pitch of a sound and features of the object that produced it. To find patterns between the volume of a sound and the strength of the vibrations that produced it. To recognise that sounds get fainter as the distance from the sound source increases. 	<ul style="list-style-type: none"> To recognise that environments can change and that this can sometimes pose dangers to living things. <p style="text-align: center;">Science projects (Non-Statutory)</p> <ul style="list-style-type: none"> Children to apply their knowledge and understanding of science to a range of citizen science projects organised by academic institutions. Enhance the children's science capital while contributing towards real life scientific research. Examples include: <ul style="list-style-type: none"> -The Great British Bee Count -Wildwatch Kenya -Big Schools Bird Watch
	<p>Working Scientifically</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. 		



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<p>Year 5</p>	<p>Animals, including humans</p> <p>To describe the changes as humans, develop to old age.</p> <p>Properties and changes of materials</p> <ul style="list-style-type: none"> To compare and group together everyday materials on the basis of their properties including their hardness, solubility, transparency, conductivity To compare and group together everyday materials on the basis of their properties, (electrical and thermal), and response to magnets. To know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. To use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. To give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. To demonstrate that dissolving, mixing and changes of state are reversible changes. To 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>Earth and Space</p> <ul style="list-style-type: none"> To describe the movement of the Earth, and other planets, relative to the Sun in the solar system. To describe the movement of the Moon relative to the Earth. To describe the Sun, Earth and Moon as approximately spherical bodies. To use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky. <p>Living things and their habitats</p> <ul style="list-style-type: none"> To describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. To describe the life process of reproduction in some plants and animals. To recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. 	<p>Forces</p> <ul style="list-style-type: none"> To explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. To identify the effects of air resistance, water resistance and friction, that act between moving surfaces. <p>Science projects (Non-Statutory)</p> <ul style="list-style-type: none"> Children to apply their knowledge and understanding of science to a range of citizen science projects organised by academic institutions. Enhance the children's science capital while contributing towards real life scientific research. Examples include: -STEM -CREST Award
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	Working Scientifically <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. 		
Year 6	<p style="text-align: center;">Animals, including humans</p> <ul style="list-style-type: none"> • To identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. • To recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. • To describe the ways in which nutrients and water are transported within animals, including humans. <p style="text-align: center;">Living things and their habitats</p> <ul style="list-style-type: none"> • To 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. • To give reasons for classifying plants and animals based on specific characteristics. 	<p style="text-align: center;">Evolution and inheritance</p> <ul style="list-style-type: none"> • To recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. • To recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. • To identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. <p style="text-align: center;">Electricity</p> <ul style="list-style-type: none"> • To associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. • 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. • To use recognised symbols when representing a simple circuit in a diagram. 	<p style="text-align: center;">Light</p> <ul style="list-style-type: none"> • To recognise that light appears to travel in straight lines. • To 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. • To 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. • To use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. <p style="text-align: center;">Think like a scientist (Non-statutory)</p> <ul style="list-style-type: none"> • Reaffirming of working scientifically objectives ahead of transition to high school. • With a Focus on sound, children to planning and carrying out their own enquires to answer questions. • Use a range of equipment and record data and results using appropriate diagrams and charts.



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Working Scientifically

- 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.