



Science Curriculum Across the School

	Autumn		Spring		Summer	
Nursery	<p><u>Nursery Rhymes</u> Make healthy choices about food, drink, activity and tooth brushing.(N PD FMS) Explore and talk about different forces they can feel. (TNW - N) Explore how things work (TNW - N)</p>	<p><u>Wow said the owl - colours</u> Talk about what they see, using a wide vocabulary. (TNW - N) Talk about the differences between materials and changes they notice. (TNW - N) Changes</p>	<p><u>Bears</u> Use all their senses in hands on exploration of natural materials. (TNW - N) Explore collections of materials with similar and/or different properties. (TNW - N)</p>	<p><u>Growing</u> Understand the key features of the life cycle of a plant and an animal. (TNW - N) Plant seeds and care for growing plants. (TNW - N) Begin to understand the need to respect and care for the natural environment and all living things. (TNW - N)</p>	<p><u>On the farm</u> Understand the key features of the life cycle of a plant and an animal. (TNW - N)</p>	<p><u>Pirates</u> Explore and talk about different forces they can feel. (TNW - N) Explore collections of materials with similar and/or different properties. (TNW - N) Talk about what they see, using a wide vocabulary. (TNW - N) RE Our World</p>
	<p><u>Mouse Club</u> Explore and talk about different forces they can feel. (TNW - N) Explore how things work (TNW - N)</p>	<p><u>People who help us</u> Talk about the differences between materials and changes they notice. (TNW - N) Changes</p>	<p><u>Mini beasts</u> Begin to understand the need to respect and care for the natural environment and all living things. (TNW - N) Understand the key features of the life cycle of a plant and an animal. (TNW - N) Plant seeds and care for growing plants. (TNW - N) Explore how things work (TNW - N)</p>	<p><u>Food glorious food</u> Make healthy choices about food, drink, activity and tooth brushing. (N PD FMS)</p>	<p><u>Traditional tales</u> Use all their senses in hands on exploration of natural materials. (TNW - N) Explore collections of materials with similar and/or different properties. (TNW - N) Talk about the differences between materials and changes they notice. (TNW - N) Materials</p>	<p><u>Wild and friendly</u> Talk about what they see, using a wide vocabulary. (TNW - N) RE Our World</p>
Reception	<p><u>Nursery Rhymes</u> Understand the effect of changing seasons on the natural world around them. (TNW - R) Autumn</p>	<p><u>Wow said the owl - colours</u> Describe what they see, hear and feel whilst outside. (TNW - R) - Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. (ELG)</p>	<p><u>Bears</u> Understand the effect of changing seasons on the natural world around them. (TNW - R) Winter - Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences</p>	<p><u>Growing</u> Understand the effect of changing seasons on the natural world around them. (TNW - R) Spring Explore the natural world around them. (TNW - R) Know and talk about the different factors that support their overall health and wellbeing:</p>	<p><u>On the farm</u> Understand the effect of changing seasons on the natural world around them. (TNW - R) Summer Explore the natural world around them, making observations and drawing pictures of animals and plants:(ELG)</p>	<p><u>Pirates</u> (Working scientifically - investigating sailing boats made from a range of materials.) Describe what they see, hear and feel whilst outside. (TNW - R) RE Our World</p>



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			and what has been read in class; (ELG) Recognise some environments that are different to the one in which they live. (TNW - R)	- healthy eating - tooth brushing (R PD) Explore the natural world around them, making observations and drawing pictures of animals and plants;(ELG)		
	<u>Mouse club</u> Understand the effect of changing seasons on the natural world around them. (TNW - R) Autumn	<u>People who help us</u> Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. (ELG)	<u>Mini-beast</u> Understand the effect of changing seasons on the natural world around them. (TNW - R) Winter Explore the natural world around them. (TNW - R) Describe what they see, hear and feel whilst outside. (TNW - R) Explore the natural world around them, making observations and drawing pictures of animals and plants;(ELG)	<u>Food glorious food</u> Understand the effect of changing seasons on the natural world around them. (TNW - R) Spring Recognise some environments that are different to the one in which they live. (TNW - R) Know and talk about the different factors that support their overall health and wellbeing: - healthy eating - tooth brushing (R PD) - 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; (ELG)	<u>Traditional tales</u> Understand the effect of changing seasons on the natural world around them. (TNW - R) Summer	<u>Wild and friendly</u> Describe what they see, hear and feel whilst outside. (TNW - R) RE Our World
Year One	<u>Everyday materials</u> 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		<u>Plants</u> identify and name a variety of common wild and garden plants including deciduous and evergreen trees		<u>Animals, including humans</u> identify and name a variety of common animals including, fish, amphibians, reptiles, birds and mammals identify and name a variety of common animals that are carnivores, herbivores and omnivores	



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	<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>identify and describe the basic structure of a variety of common flowering plants, including trees.</p>	<p>describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)</p> <p>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><u>Seasonal changes</u></p> <ul style="list-style-type: none"> ▪ observe changes across the four seasons ▪ observe and describe weather associated with the seasons and how day length varies. 			
	<p>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 question 			
	<u>Autumn</u>	<u>Spring</u>	<u>Summer 1</u>	<u>Summer 2</u>
Year Two	<p><u>Everyday materials</u></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><u>Living things and their habitats</u></p> <p>explore and compare the differences between things that are living, dead, and things that have never been alive</p> <p>notice that animals, including humans, have offspring which grow into adults</p>	<p><u>Plants</u></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</p>	<p><u>Animals including humans</u></p> <p>describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene</p>



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	<p>find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p>	<p>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</p> <p>identify and name a variety of plants and animals in their habitats, including micro-habitats</p> <p>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>	<p>a suitable temperature to grow and stay healthy.</p>	<p>find out about and describe the basic needs of animals, including humans (inc Sp1), for survival (water, food and air)</p>	
<p>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 					
Autumn 1		Autumn 2	Spring 1	Spring 2	Summer



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Year Three	<p><u>Animals, including human</u> 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</p> <p>identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p>	<p><u>Rocks</u> compare and group together different kinds of rocks on the basis of their simple physical properties</p> <p>recognise that soils are made from rocks and organic matter</p> <p>describe in simple terms how fossils are formed when things that have lived are trapped within rock.</p>	<p><u>Light</u> 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 a light source is blocked by a solid object</p> <p>find patterns in the way that the size of shadows change</p>	<p><u>Plants</u> 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 of flowers play in the life cycle of flowering plants, including pollination,</p>	<p><u>Forces and magnets</u> compare how things move on different surfaces notice that some forces need contact between two objects but magnetic forces can act at a distance</p> <p>observe how magnets attract or repel each other 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 predict whether two magnets will attract or repel each other, depending on which poles are facing</p>



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			seed formation and seed dispersal.			
	<p><u>Working scientifically</u> 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. 					
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year Four	<p><u>Electricity</u> identify common appliances that run on electricity</p>	<p><u>Animals including Humans</u> describe the simple functions of the basic parts of the digestive system in humans</p>	<p><u>States of matter</u> compare and group materials together, according to whether they are solids, liquids or gases</p>	<p><u>Living things and their habitats</u> recognise that living things can be grouped in a variety of ways</p>	<p><u>Sound</u> identify how sounds are made, associating some of them with something vibrating</p>	<p><u>States of matter</u> identify the part played by evaporation and condensation in the water cycle and associate the rate of</p>



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<p>construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</p> <p>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</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>identify the different types of teeth in humans and their simple functions.</p> <p>construct and interpret a variety of food chains, identifying producers, predators and prey</p> <p>recognise that environments can change and that this can sometimes pose dangers to living things</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 ($^{\circ}\text{C}$)</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 vibrations from sound 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>	<p>evaporation with temperature.</p>
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Working scientifically

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:

- 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.

	Autumn 1	Autumn 2	Spring	Summer
Year Five	<p><u>Animals, including humans</u></p> <p>describe the changes as humans develop to old age</p>	<p><u>Living things and their Habitats</u></p> <p>describe the life process of reproduction in some plants and animals</p>	<p><u>Properties and changes of materials</u></p> <p>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</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><u>Earth and space</u></p> <p>describe the movement of the Earth, and other planets, relative to the Sun in the solar system</p>



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<p>describe the differences in the life cycle of a mammal, an amphibian, an insect and a bird</p> <p>recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</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><u>Forces</u></p> <p>explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</p> <p>identify the effect 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>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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Working scientifically

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:

- 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,



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- 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 results, 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.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer
Year Six	<p><u>Light</u></p> <p>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</p>	<p><u>Electricity</u></p> <p>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><u>Living things and their habitats</u></p> <p>describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences,</p>	<p><u>Animals, including humans</u></p> <p>identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</p>	<p><u>Evolution and inheritance</u></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>recognise that living things have changed over time and that fossils provide the information about living things that inhabited the Earth millions of years ago</p>



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	<p>they give out or reflect light into the eye 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>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>	<p>including micro-organisms, plants and animals</p> <p>give reasons for classifying plants and animals based on specific characteristics</p>	<p>recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</p> <p>describe the ways in which nutrients and water are transported within animals including humans</p>	<p>identify how animals and plants are adapted to suit their environment in different ways and that adaptation leads to evolution</p>
<p><u>Working scientifically</u> 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 					



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- reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of results, 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.