

Coverage of Science topics in each year group Years 1-6

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Animal Kingdom (National Curriculum: Animals including Humans)	Animals and their needs (National Curriculum: Animals including Humans)	Animals and Skeletons (National Curriculum: Animals, including Humans)	Digestion (National Curriculum: Animals, including Humans)	Human Development (National Curriculum: Animals including Humans)	Heart and Lungs (National Curriculum: Animals including Humans)
	Habitats (National Curriculum: Living things and their Habitats)	Rocks	Classification (National Curriculum: Living things and their Habitats)	Life Cycles (National Curriculum: Living things and their Habitats)	Classification (National Curriculum: Living things and their Habitats)
Materials (National Curriculum: Everyday Materials)	Materials (National Curriculum: Uses of Everyday Materials)	Magnets (National Curriculum: Forces and Magnets)	Electricity	Forces	Electricity
Plants	Plants	Plants	States of Matter	Mixtures and Reactions (National Curriculum: Properties and Changes of Materials)	Evolution (National Curriculum: Evolution and Inheritance)
Weather (National Curriculum: Seasonal Changes)	Living Things (National Curriculum: Living things and their Habitats)	Light	Sound	Earth and Space	Light
Environment (Covered throughout year)	Local Habitats (Covered throughout the year)	Animals Homes (Covered throughout the year)	Respecting our environment (Covered throughout the year)	Decay and Recycling (Covered throughout the year)	Field Studies (Covered throughout the year)

## Early Years Foundation Stage

### Early Years Foundation Stage Characteristics of Effective Learning

The characteristics of effective learning describe how a child learns. How the children learn is intrinsic to the skills they will apply to all areas of their learning including scientific enquiries.

<b><u>Playing and Exploring</u></b> <i>Engagement</i>	<b><u>Active Learning</u></b> <i>Motivation</i>	<b><u>Creating and Thinking Critically</u></b> <i>Thinking</i>
<b>Finding out and exploring</b> <ul style="list-style-type: none"> <li>• Showing curiosity about objects, events and people</li> <li>• Using senses to explore the world around them</li> <li>• Engaging in open-ended activity</li> <li>• Showing particular interests</li> </ul>	<b>Being involved and concentrating</b> <ul style="list-style-type: none"> <li>• Maintaining focus on their activity for a period of time</li> <li>• Showing high levels of energy, fascination</li> <li>• Not easily distracted</li> <li>• Paying attention to details</li> </ul>	<b>Having their own ideas</b> <ul style="list-style-type: none"> <li>• Thinking of ideas</li> <li>• Finding ways to solve problems</li> <li>• Finding new ways to do things</li> </ul>
<b>Playing with what they know</b> <ul style="list-style-type: none"> <li>• Pretending objects are things from their experience</li> <li>• Representing their experiences in play</li> <li>• Taking on a role in their play</li> <li>• Acting out experiences with other people</li> </ul>	<b>Keeping on trying</b> <ul style="list-style-type: none"> <li>• Persisting with activity when challenges occur</li> <li>• Showing a belief that more effort or a different approach will pay off</li> <li>• Bouncing back after difficulties</li> </ul>	<b>Making links</b> <ul style="list-style-type: none"> <li>• Making links and noticing patterns in their experience</li> <li>• Making predictions</li> <li>• Testing their ideas</li> <li>• Developing ideas of grouping, sequences, cause and effect</li> </ul>
<b>Being willing to 'have a go'</b> <ul style="list-style-type: none"> <li>• Initiating activities</li> <li>• Seeking challenge</li> <li>• Showing a 'can do' attitude</li> <li>• Taking a risk, engaging in new experiences, and learning by trial and error</li> </ul>	<b>Enjoying achieving what they set out to do</b> <ul style="list-style-type: none"> <li>• Showing satisfaction in meeting their own goals</li> <li>• Being proud of how they accomplished something – not just the end result</li> <li>• Enjoying meeting challenges for their own sake rather than external rewards or praise</li> </ul>	<b>Choosing ways to do things</b> <ul style="list-style-type: none"> <li>• Planning, making decisions about how to approach a task, solve a problem and reach a goal</li> <li>• Checking how well their activities are going</li> <li>• Changing strategy as needed</li> <li>• Reviewing how well the approach worked</li> </ul>

## Understanding the World

	People and communities	The world	Technology
<b>Birth-11 months</b>	<i>The beginnings of understanding of People and communities lie in early attachment and other relationships.</i> See PSED and C+L.	<ul style="list-style-type: none"> <li>• Moves eyes, then head, to follow moving objects.</li> <li>• Reacts with abrupt change when a face or object suddenly disappears from view.</li> <li>• Looks around a room with interest; visually scans environment for novel, interesting objects and events.</li> <li>• Smiles with pleasure at recognisable playthings.</li> <li>• Repeats actions that have an effect, e.g. kicking or hitting a mobile or shaking a rattle.</li> </ul> See also Characteristics of Effective Learning – Playing and Exploring, and Physical Development 5	<i>The beginnings of understanding technology lie in babies exploring and making sense of objects and how they behave.</i> See Characteristics of Effective Learning - Playing and Exploring and Creating and Thinking Critically
<b>8-20 months</b>		<ul style="list-style-type: none"> <li>• Closely observes what animals, people and vehicles do.</li> <li>• Watches toy being hidden and tries to find it.</li> <li>• Looks for dropped objects.</li> <li>• Becomes absorbed in combining objects, e.g. banging two objects or placing objects into containers.</li> <li>• Knows things are used in different ways, e.g. a ball for rolling or throwing, a toy car for pushing.</li> </ul> 5	
<b>16-26 months</b>	<ul style="list-style-type: none"> <li>• Is curious about people and shows interest in stories about themselves and their family.</li> <li>• Enjoys pictures and stories about themselves, their families and other people.</li> </ul> 2	<ul style="list-style-type: none"> <li>• Explores objects by linking together different approaches: shaking, hitting, looking, feeling, tasting, mouthing, pulling, turning and poking.</li> <li>• Remembers where objects belong.</li> <li>• Matches parts of objects that fit together, e.g. puts lid on teapot.</li> </ul> 3	<ul style="list-style-type: none"> <li>• Anticipates repeated sounds, sights and actions, e.g. when an adult demonstrates an action toy several times.</li> <li>• Shows interest in toys with buttons, flaps and simple mechanisms and beginning to learn to operate them.</li> </ul> 2 <div style="border: 1px solid black; width: 20px; height: 20px; text-align: center; margin-left: auto; margin-right: auto;">7</div>
<b>22-36 months</b>	<ul style="list-style-type: none"> <li>• Has a sense of own immediate family and relations.</li> <li>• In pretend play, imitates everyday actions and events from own family and cultural background, e.g. making and drinking tea.</li> <li>• Beginning to have their own friends.</li> <li>• Learns that they have similarities and differences that connect them to, and distinguish them from, others.</li> </ul> 4	<ul style="list-style-type: none"> <li>• Enjoys playing with small-world models such as a farm, a garage, or a train track.</li> <li>• Notices detailed features of objects in their environment.</li> </ul> 2	<ul style="list-style-type: none"> <li>• Seeks to acquire basic skills in turning on and operating some ICT equipment.</li> <li>• Operates mechanical toys, e.g. turns the knob on a wind-up toy or pulls back on a friction car.</li> </ul> 2 <div style="border: 1px solid black; width: 20px; height: 20px; text-align: center; margin-left: auto; margin-right: auto;">8</div>
<b>30-50 months</b>	<ul style="list-style-type: none"> <li>• Shows interest in the lives of people who are familiar to them.</li> <li>• Remembers and talks about significant events in their own experience.</li> <li>• Recognises and describes special times or events for family or friends.</li> <li>• Shows interest in different occupations and ways of life.</li> <li>• Knows some of the things that make them unique, and can talk about some of the similarities and differences in relation to friends or family.</li> </ul> 5	<ul style="list-style-type: none"> <li>• Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world.</li> <li>• Can talk about some of the things they have observed such as plants, animals, natural and found objects.</li> <li>• Talks about why things happen and how things work.</li> <li>• Developing an understanding of growth, decay and changes over time.</li> <li>• Shows care and concern for living things and the environment.</li> </ul> 5	<ul style="list-style-type: none"> <li>• Knows how to operate simple equipment, e.g. turns on CD player and uses remote control.</li> <li>• Shows an interest in technological toys with knobs or pulleys, or real objects such as cameras or mobile phones.</li> <li>• Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images.</li> <li>• Knows that information can be retrieved from computers</li> </ul> 4 <div style="border: 1px solid black; width: 20px; height: 20px; text-align: center; margin-left: auto; margin-right: auto;">14</div>
<b>40-60 months</b>	<ul style="list-style-type: none"> <li>• Enjoys joining in with family customs and routines.</li> </ul> 1	<ul style="list-style-type: none"> <li>• Looks closely at similarities, differences, patterns and change.</li> </ul> 1	<ul style="list-style-type: none"> <li>• Completes a simple program on a computer.</li> <li>• Uses ICT hardware to interact with age-appropriate computer software.</li> </ul> 2 <div style="border: 1px solid black; width: 20px; height: 20px; text-align: center; margin-left: auto; margin-right: auto;">4</div>

<b>ELG</b>	<p>Children talk about past and present events in their own lives and in the lives of family members.</p> <p>They know that other children don't always enjoy the same things, and are sensitive to this.</p> <p>They know about similarities and differences between themselves and others, and among families, communities and traditions.</p>	<p>Children know about similarities and differences in relation to places, objects, materials and living things.</p> <p>They talk about the features of their own immediate environment and how environments might vary from one another.</p> <p>They make observations of animals and plants and explain why some things occur, and talk about changes.</p>	<p>Children recognise that a range of technology is used in places such as homes and schools.</p> <p>They select and use technology for particular purposes.</p>
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National Curriculum		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Working Scientifically  Pupils should be taught to:	Planning	- asking simple questions and recognising that they can be answered in different ways		-asking relevant questions and using different types of scientific enquiries to answer them  -setting up simple practical enquiries, comparative and fair tests		-planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary	
	Observing	- observing closely, using simple equipment  - performing simple tests  - identifying and classifying		-making systematic and careful observations and, where appropriate, taking accurate measurements using standard units  -using a range of equipment, including thermometers and data loggers		-taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate	
	Recording	- gathering and recording data to help in answering questions.		-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		-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	
	Concluding	- using their observations and ideas to suggest answers to questions		-reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions  -identifying differences, similarities or changes related to simple scientific ideas and processes  -using straightforward scientific evidence to answer questions or to support their findings  -using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions and predictions for setting up further 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	

	Evaluating			-using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions and predictions for setting up further tests		-identifying scientific evidence that has been used to support or refute ideas or arguments.
Skills Progression	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Working Scientifically: <b>Planning</b>	<p>Ask simple questions and recognise that they can be answered in different ways.</p> <p>Use simple secondary sources to find answers.</p> <p>Talk about similarities and differences.</p>	<p>Respond to suggestions of how to answer questions about the world around them and ask effective and relevant questions.</p> <p>Recognise when and how secondary sources should be used.</p> <p>Discuss the most appropriate type of scientific enquiry to use to answer questions.</p> <p>Recognise that questions can be answered in different ways</p>	<p>Raise own relevant questions and use different types of scientific enquiry to answer questions.</p> <p>Recognise when and how secondary sources should be used.</p> <p>Make decisions about the most appropriate type of scientific enquiry to answer questions.</p> <p>Recognise and identify the factors needed to make a test 'fair'.</p> <p>Identify the factors in a simple 'fair' test that we will measure (variables)</p>	<p>Explore ideas and raise a range of relevant questions.</p> <p>Recognise which secondary sources are most useful and begin to recognise the difference between fact and opinion.</p> <p>Select and plan the most appropriate type of scientific enquiry for answering a scientific question.</p> <p>Decide which variables to measure change and keep the same.</p> <p>Demonstrate how to change one factor</p>	<p>Explore ideas and raise a range of different kinds of relevant questions based on accurate scientific principles.</p> <p>Recognise and use the secondary sources that are most useful separating opinion from fact.</p> <p>Select and plan accurately the most appropriate type of scientific enquiry for answering scientific questions.</p> <p>Decide which variables to measure change and keep the same.</p> <p>Demonstrate how to change one factor (variable) whilst keeping others the same (control).</p>	<p>Use simple models to describe scientific ideas.</p> <p>Explain how to construct a complex test.</p> <p>Plan different types of enquiries to answer questions and put measures in place to ensure accuracy and reliability.</p> <p>Select the most suitable variables to be investigated.</p> <p>Identify some variables that cannot be controlled or explain.</p>

			and keep the same (control).	(variable) whilst keeping others the same (control).  Identify and use an appropriate unit to measure variables effectively.	Identify and use an appropriate unit to measure variables effectively.	Recognise some situations in which a fair test cannot be carried out.
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Working Scientifically: Observation and Recording</b>	<p>Carry out instructions for a simple investigation.</p> <p>Talk about and record what is seen and observed.</p> <p>Take accurate measurements using simple equipment, e.g. cm and scales with one interval.</p> <p>Begin to identify and classify data and information.</p>	<p>Describe what happens when taking part in simple investigations/fair tests.</p> <p>Begin to make decisions about what to observe, how long to observe for?</p> <p>Read simple scales and take accurate measurements using standard units, e.g. Thermometers, graduated beakers and data loggers.</p> <p>Talk about criteria for grouping, sorting and classifying, use simple keys.</p>	<p>Recognise when to set up simple practical enquires, comparative and fair tests.</p> <p>Make decisions about what to observe, how long to observe for, and the type of equipment needed.</p> <p>Make systematic and accurate observations and measurements. Use a range of measuring equipment appropriately including thermometers, data loggers etc.</p> <p>Gather, record, classify and present data in a variety of ways to help answer questions.</p>	<p>Recognise when and how to set up comparative and fair tests and begin to explain which variables need to be controlled and why.</p> <p>Make decisions about what to observe, what measurements to use and how long to measure them for.</p> <p>Choose appropriate equipment to make measurements, using standard units of measure and simple scales accurately and with precision.</p> <p>Gather, record, classify and present a range of data in different ways.</p>	<p>Recognise when and how to set up comparative and fair tests and clearly explain which variables need to be controlled and why.</p> <p>Make independent and well-founded decisions about what to observe, what measurements to use and how long to measure them for.</p> <p>Choose the most appropriate equipment (with a variety of intervals and units) to make measurements and explain how to use accurately and with precision.</p> <p>Gather, record, classify and present data in a wide range of ways.</p>	<p>Explain and recognise when and how to set up comparative and fair tests and clearly explain which variables need to be controlled and why.</p> <p>Record observations and measurements systematically.</p> <p>Choose the most efficient units of measurement and convert as and when appropriate.</p> <p>Present comparative data in a range of formats including, pie charts, line graphs and scatter grams etc.</p>

	Record data using simple charts, tables and block graphs.	Record data using a range of charts, tables and block graphs and labelled diagrams.	Use and construct increasingly complex tables, line graphs and keys to record findings.	Record data and results using scientific diagrams and labels, classification keys, tables, and bar and line graphs	Use a wide range of methods to record data including line graphs, scientific diagrams, classification keys, scatter, bar and line graphs etc.	Label diagrams using appropriate scientific symbols, e.g. <a href="#">circuit diagrams in parallel</a> .
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Working Scientifically: Conclusion and Evaluating</b>	<p>Talk about describe and sort simple similarities and differences, noting patterns and relationships.</p> <p>Record and communicate findings in a range of ways using simple scientific language.</p> <p>Talk about what has been found out and how it was discovered.</p> <p>Talk in simple scientific terms about what might</p>	<p>Begin to look for patterns and decide what data to collect to identify them.</p> <p>Talk about data collected from observations and measurements, using drawings, labelled diagrams, notes, simple tables and keys, standard units and simple equipment including data loggers.</p> <p>Begin to draw and express some conclusions, by looking at changes, patterns, similarities and differences in data.</p> <p>Begin to identify new questions arising from data, make new predictions for new</p>	<p>Look for patterns and decide on the range of data needed to identify them.</p> <p>Collect data from observations and measurements, using notes, simple tables and standard units, using drawings, labelled diagrams, keys, bar charts and tables.</p> <p>Identify changes, patterns, similarities and differences in data in order to draw conclusions.</p> <p>Suggest improvements and identify new questions arising from data, make new</p>	<p>Decide how to record data from a choice of familiar approaches.</p> <p>Use relevant scientific language to communicate findings and justify scientific ideas.</p> <p>Look for different relationships in data and begin to identify evidence that refutes or supports ideas.</p> <p>Make practical suggestions about how working methods could be improved.</p>	<p>Decide in detail how to record data accurately from a choice of familiar approaches.</p> <p>Use relevant scientific language and illustrations to discuss, communicate and justify findings and scientific ideas.</p> <p>Look for a range of different relationships in data and begin to identify evidence that refutes or supports ideas.</p> <p>Identify when tests need to be repeated in order to attain reliable results.</p>	<p>Use quantitative and qualitative data to support conclusions.</p> <p>Use scientific knowledge and understanding to challenge the conclusions of others.</p> <p>Identify a range of scientific evidence that has been used to support or refute ideas or arguments.</p> <p>Identify when tests need to be repeated in order to attain reliable results.</p>

	happen and why? (prediction)	values within or beyond the data collected.	predictions for new values within or beyond the data collected.  Report on findings from enquires including oral and written explanations.	Use results to identify when further tests and observations might be needed.  Make general statements such as: 'the hotter the water, the faster the sugar dissolves'.	Use test results to make predictions and set up further comparative and fair tests.  Make increasingly measured general statements such as: 'As the temperature increases the mass of the sugar which can be dissolved increases.	Use test results to make predictions, supported by relevant and accurate evidence to set up further comparative and fair tests.
National Curriculum	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Plants</b> Pupils should be taught to:	- 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.	-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.	-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	Plants topic not covered in Years 4, 5 and 6 in the National Curriculum		

			-explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.			
Skills Progression	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Plants</b>	<p>Observe and describe how seeds and bulbs grow into mature plants.</p> <p>Identify and describe the basic structure of a flowering plant including roots, stem/trunk, leaves and flowers.</p> <p>Find out about and describe what plants need to grow and stay healthy, including, water, light and temperature.</p>	<p>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p> <p>Identify and describe the functions of different parts of flowering plants, including 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 these vary from plant to plant and the way in which water is transported in plants.</p>	<p>Explore in detail the parts that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p> <p>Identify and describe detail the functions of different parts of flowering plants, including 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 these vary from plant to plant and the way in which water is transported in plants.</p>	Plants topic not covered in Years 4, 5 and 6 in the National Curriculum.		

National Curriculum	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Animals Including Humans</b> Pupils should be taught to:	-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  -describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)  -identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense	-notice that animals, including humans, have offspring which grow into adults  -find out about and describe the basic needs of animals, including humans, for survival (water, food and air)  -describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene	-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  -identify that humans and some other animals have skeletons and muscles for support, protection and movement	-describe the simple functions of the basic parts of the digestive system in humans  -identify the different types of teeth in humans and their simple functions  -construct and interpret a variety of food chains, identifying producers, predators and prey	-describe the changes as humans develop to old age	-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
Skills Progression	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Animals including Humans</b>	Draw and label the main parts of the human body and link body parts to the associated senses.	Identify and describe simple features of human and other animal skeletons, and how muscles are used for support,	Name and describe key features of the human body, including organs, skeleton and muscles.	Describe scientifically the function of the main organs in the body, including muscles, the skeleton and their main functions.	Identify and name the main parts of the human circulatory system, and explain the functions of the heart, blood vessels and blood.	Explain how and why our muscles use oxygen.

	<p>protection and movement.</p> <p>Name and talk about the young of humans and other animals.</p> <p>Identify and name a variety of common animals such as amphibians, mammals and invertebrates.</p>	<p>Describe in simple terms the changes that take place as animals grow.</p> <p>Identify that animals including humans need the right types and amount of nutrition and that they cannot make their own food, that they need nutrition from what they eat.</p> <p>Describe the link between an animal's diet and their type of teeth.</p>	<p>Talk in simple terms about how animals grow &amp; reproduce.</p> <p>Describe the simple functions of the human digestive system in humans.</p> <p>Identify the different types of teeth in humans and their simple functions.</p>	<p>Describe the changes that take place as humans develop from birth to old age. Learn about the changes that take place during puberty.</p> <p>Use scientific terms to describe the key features of a healthy diet, including main food groups.</p> <p>Draw a timeline to indicate stages in the growth and development of humans.</p>	<p>Recognise that normally the offspring of a living thing will not be identical to its parents.</p> <p>Recognise the impact of diet, exercise, drugs and lifestyle on the functions of the body</p> <p>Describe the ways in which nutrients and water are transported within animals, including humans.</p>	<p>Explain in detail the impact of diet, exercise, drugs and lifestyle on the way the body functions.</p> <p>Name all the main food groups and explain how they are used by the body.</p>
	<p>Find out about and describe the basic needs of animals including humans for survival (water, food and air).</p> <p>Describe the importance for humans of exercise, a balanced diet and hygiene, including how to look after teeth.</p>					

National Curriculum	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p><b>Living Things and their Habitats</b> Pupils should be taught to:</p>	<p><b>Living Things and their Habitats not covered in Year 1 in the National Curriculum</b></p>	<p>-explore and compare the differences between things that are living, dead, and things that have never been alive</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 microhabitats</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><b>Living Things and their Habitats not covered in Year 3 in the National Curriculum</b></p>	<p>-recognise that living things can be grouped in a variety of ways</p> <p>-explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</p> <p>-recognise that environments can change and that this can sometimes pose dangers to living things</p>	<p>-describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</p> <p>-describe the life process of reproduction in some plants and animals</p>	<p>-describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals</p> <p>-give reasons for classifying plants and animals based on specific characteristics</p>
Skills Progression	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p><b>Living Things and their Habitats</b></p>	<p><b>Living Things and their Habitats not covered in Year 1 in the National Curriculum</b></p>	<p>Recognise that living things grow and reproduce.</p>	<p><b>Living Things and their Habitats not covered in Year 3 in the National Curriculum</b></p>	<p>Describe the life process of reproduction in some plants and animals.</p>	<p>Recognise that micro-organisms feed, grow and reproduce like other organisms.</p>	<p>Use scientific vocabulary to discuss and explore relationships between related processes, e.g. <a href="#">pollution</a> and <a href="#">fertilisation</a>.</p>

		Describe the basic conditions that plants and animals need in order to survive.		Use scientific vocabulary to describe life processes, e.g. respiration in animals, pollination in flowering plants etc.	Recognise and suggest ways of preventing the spread of harmful micro-organisms.	Describe how micro-organisms move between food sources and how this causes food poisoning.
		Describe and compare features of living, dead and non-living things.		Identify the key features of living and non-living things in detail	Identify an increasing range of features of living and non-living things in detail.	Explain how and why feeding, growing and reproduction are essential for micro-organisms.
National Curriculum	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Rocks</b> Pupils should be taught to:	Rocks is not covered in Key Stage One in the National Curriculum		-compare and group together different kinds of rocks on the basis of their appearance and simple physical properties  -describe in simple terms how fossils are formed when things that have lived are trapped within rock  -recognise that soils are made from rocks and organic matter	Rocks is not covered in years 4, 5 and 6 in the National Curriculum.		
National Curriculum	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Everyday Materials</b> Pupils should be taught to:	-distinguish between an object and the material from which it is made  -identify and name a variety of everyday	Everyday Materials is not covered in year 2 in the National Curriculum.	Everyday Materials is not covered in Key Stage 2 in the National Curriculum.			

	<p>materials, including wood, plastic, glass, metal, water, and rock</p> <p>-describe the simple physical properties of a variety of everyday materials</p> <p>-compare and group together a variety of everyday materials on the basis of their simple physical properties</p>					
National Curriculum	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p><b>Uses of Everyday Materials</b> Pupils should be taught to:</p>	<p>Uses of Everyday Materials is not covered in year 1 in the National Curriculum.</p>	<p>-identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</p> <p>-find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</p>	<p>Uses of Everyday Materials is not covered in years 3, 4, 5 and 6 in the National Curriculum.</p>			

National Curriculum	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Properties and Changes of Materials</b> Pupils should be taught to:	Properties and Changes of Materials is not covered in Key Stage 1 in the National Curriculum.		Properties and Changes of Materials is not covered in Year 3 in the National Curriculum.	Properties and Changes of Materials is not covered in Year 4 in the National Curriculum.	<ul style="list-style-type: none"> <li>•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</li> <li>•know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</li> <li>•use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</li> <li>•give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</li> <li>•demonstrate that dissolving, mixing and changes of state are reversible changes</li> <li>•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</li> </ul>	Properties and Changes of Materials is not covered in Year 6 in the National Curriculum.
<b>Forces and Magnets</b> Pupils should be taught to:	Forces and Magnets is not covered in Key Stage 1 in the National Curriculum.		-compare how things move on different surfaces	Forces and Magnets is not covered in year 4 in the National Curriculum.	<b>Forces</b> -explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object	Forces and Magnets is not covered in year 6 in the National Curriculum.

			<p>-notice that some forces need contact between 2 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 2 poles</p> <p>-predict whether 2 magnets will attract or repel each other, depending on which poles are facing</p>		<p>-identify the effects of air resistance, water resistance and friction, that act between moving surfaces</p> <p>-recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect and the action of acid on bicarbonate of soda</p>	
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Forces and Magnets</b>	Forces and Magnets is not covered in Key Stage 1 in the National Curriculum.		<p>Recognise that pushes and pulls will bring an object to rest more quickly.</p> <p>Describe situations where friction is helpful and where it is not.</p>	Forces and Magnets is not covered in year 4 in the National Curriculum.	<p>Identify the effects of air and water resistance that act between moving surfaces.</p> <p>Recognise that force and motion can be transferred through mechanical devices such as gears, pulleys, levers and springs.</p> <p>Explain how motion is affected by forces such as gravitational</p>	Forces and Magnets is not covered in year 6 in the National Curriculum.

			<p>Identify the effects of friction acting between moving surfaces.</p> <p>Predict whether two magnets will attract or repel each other, depending on which poles are facing.</p> <p>Describe situations where there is more than one force acting on an object.</p> <p>Compare and group everyday materials that are magnetic and identify magnetic materials.</p> <p>Identify factors than increase resistance.</p>		<p>attraction, magnetic attraction and friction.</p> <p>Describe motion in detail, in terms of balanced and unbalanced forces.</p> <p>Describe how gravity acts between the Earth and a falling object.</p>	
National Curriculum	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p><b>Electricity:</b> Pupils should be taught to:</p>	<p>Electricity not currently covered in Years 1, 2 and 3 in the National Curriculum.</p>		<p>-identify common appliances that run on electricity</p> <p>-construct a simple series electrical circuit, 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</p>		<p>Electricity not currently covered in Year 5 in the National Curriculum.</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>-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>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>		
Skills Progression	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Electricity:</b>	Electricity not currently covered in Years 1, 2 and 3 in the National Curriculum.			<p>Explain scientifically what happens if you change the number of bulbs.</p> <p>Record and construct a series electrical circuit, identifying and naming its basic parts. Identify whether or not a bulb will light in a simple series circuit based on whether or not the bulb is part of a complete loop with a battery.</p>	Electricity not currently covered in Year 5 in the National Curriculum.	<p>Draw a complex circuit using standard scientific symbols.</p> <p>Explain and use the term resistance correctly.</p>

				<p>Explain how to/what happens when you connect more than 1 battery.</p> <p>Describe the use of conductors &amp; insulators in wires.</p>		<p>Talk about what happens when connecting components in circuits.</p> <p>Use an effective model to explain electrical flow.</p>
National Curriculum	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p><b>States of Matter:</b> Pupils should be taught to:</p>	<p>States of matter is not currently covered in Years 1, 2 and 3 in the National Curriculum.</p>			<ul style="list-style-type: none"> <li>•compare and group materials together, according to whether they are solids, liquids or gases</li> <li>•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)</li> <li>•identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature</li> </ul>	<p>States of matter is not currently covered in Year 6 in the National Curriculum.</p>	
National Curriculum	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p><b>Sound:</b> Pupils should be taught to:</p>	<p>Sound is not currently covered in Years 1, 2 and 3 in the National Curriculum.</p>			<ul style="list-style-type: none"> <li>•identify how sounds are made, associating some of them with something vibrating</li> <li>•recognise that vibrations from sounds travel through a medium to the ear</li> </ul>	<p>Sound is not currently covered in Year 6 in the National Curriculum.</p>	

				<ul style="list-style-type: none"> <li>•find patterns between the pitch of a sound and features of the object that produced it</li> <li>•find patterns between the volume of a sound and the strength of the vibrations that produced it</li> <li>•recognise that sounds get fainter as the distance from the sound source increases</li> </ul>		
National Curriculum	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Seasonal Changes:</b> Pupils should be taught to:	<ul style="list-style-type: none"> <li>•observe changes across the 4 seasons</li> <li>•observe and describe weather associated with the seasons and how day length varies</li> </ul>	Seasonal Changes is not currently covered in Years 2, 3, 4, 5 and 6 in the National Curriculum.				
National Curriculum	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Evolution and Inheritance:</b> Pupils should be taught to:	Evolution and Inheritance is not currently covered in Years 1, 2, 3, 4 and 5 in the National Curriculum.					<ul style="list-style-type: none"> <li>•recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</li> <li>•recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</li> <li>•identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution</li> </ul>

National Curriculum	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Earth and Space:</b> Pupils should be taught to:	Earth and Space is not currently covered in Years 1, 2, 3 and 4 in the National Curriculum.				•describe the movement of the Earth and other planets relative to the sun in the solar system  •describe the movement of the moon relative to the Earth  •describe the sun, Earth and moon as approximately spherical bodies  •use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky	Earth and Space is not currently covered in Year 6 in the National Curriculum.
National Curriculum	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Light:</b> Pupils should be taught to:	Light is currently not covered in Key Stage 1 in the National Curriculum.		•recognise that they need light in order to see things and that dark is the absence of light  •notice that light is reflected from surfaces  •recognise that light from the sun can be dangerous and that there are ways to protect their eyes  •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	Light is currently not covered in Years 4 and 5 in the National Curriculum.		•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 eyes or from light sources to objects and then to our eyes  •use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them

Skills Progression	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Light is currently not covered in Key Stage 1 in the National Curriculum.		-Describe what happens to a light source in the dark.  -Find patterns to determine the size of shadows.  -Describe the way in which light is reflected from surfaces.  -Describe in simple terms how light travels and what happens.	Light is currently not covered in Years 4 and 5 in the National Curriculum.		-Use knowledge of how light travels to predict the size of a shadow when the position of the light source changes.  -Explain the concept of reflection and explain how a non-luminous object can be seen.

### How Parents can help

Science consists of observing the world by using our senses to observe, listen and record. Science is curiosity in thoughtful action about the world.

A scientist gathers and uses research and evidence, making a hypothesis and testing it, to gain and share understanding and knowledge.

#### Play, Look and Ask

Play should be the starting point for engaging children in Science. Children learn through play, but that learning turns into thinking scientifically when children are encouraged to focus their attention on certain aspects and consider questions about what they think might happen.

#### See Science everywhere

Parents can take opportunities to ask 'what would happen if...?' questions to encourage children to be inquisitive and seek out answers. Children need to understand that Science isn't just a subject, but it is a way of understanding the world around us.

#### Points to Ponder

As part of Mary Le Breuilley- Engaging Science, the children begin every new science topic with 'points to ponder' which are a set of questions related to the topic to encourage children to think deeper. These could be shared with children at home in addition to school to evolve children's natural curiosity. They would be fantastic to share at the dinner table/ during meal times to form a discussion and share thoughts.

#### Family discussions at the dinner table/during mealtimes

Mealtimes would provide the opportunity to discuss news stories that are science based. For example, space shuttle missions, severe weather conditions. Over time, children will develop a deeper understanding of science and how it affects many aspects of our lives.

#### Show excitement for Science

Children will absorb your positivity and excitement to be inspired by science and a desire to explore it in more depth.

**Read**

Read non-fiction texts about science related topics that are of interest to your child.

**Ask questions**

Parents and children alike can have scientific questions. If your child asks you a question or if you have a question that you don't know the answer to, use this as an opportunity to explore together to find the answer. Make sure questions are open ended to keep children engaged and thinking about what they're doing eg. what do you think will happen?

**Educational days out/visits**

Research places to visit in the local area to further evolve and support topics children are learning in science. Ask your child's teacher about your child's science topic and ask for suggestions on days out/visits.