

## Science Progression Document

	FS	Y1	Y2	Y3	Y4	Y5	Y6
Autumn Spring Summer Thankfulness Love Courage	*	Fire and Ice (T) Wild and Wonderful (L) Atlantis (C)	Fire and Ice (T) Wild and Wonderful (L) Splish, Splash, Splosh (C)	I'm in Otter Class, get me out of here! (T) Remember when (L) Tribal Tales (C) I am Warrior! (C)	Frozen Kingdom (T) Chopsticks and Lanterns (L) Home and Away (C)	Conflict (T) Eco Heroes (L) Stargazers (L) Traders and Raiders (C)	Toga-Tastic! (T) Fallen Stars (T) Survival of the fittest (L) Dream Big (C)

Area of Study: Working Scientifically

<p>EYFS/ NC Links</p>	<p>*</p>	<p><u>Asking simple questions and recognizing that they can be answered in different ways:</u></p> <ul style="list-style-type: none"> <li>• While exploring the world, the children develop their ability to ask questions (such as what something is, how things are similar and different, the ways things work, which alternative is better, how things change and how they happen)</li> <li>• Where appropriate, they answer these questions</li> <li>• Children answer questions developed with the teacher, often through a scenario</li> <li>• Children are involved in planning how to use resources provided to answer the questions using different types of enquiry</li> </ul> <p><u>Observing closely, using simple equipment:</u></p> <ul style="list-style-type: none"> <li>• Children explore the world around them. They make careful observations to support identification, comparison and noticing change. They use appropriate senses, aided by equipment such as magnifying glasses or digital microscopes, to make their observations</li> <li>• They begin to take measurements, initially by comparisons, then using non-standard units</li> </ul> <p><u>Performing simple tests:</u></p> <ul style="list-style-type: none"> <li>• The children use practical resources provided to gather evidence to answer questions generated by themselves or the teacher. They carry out: tests to classify; comparative tests; pattern seeking enquiries; and make observations over time</li> </ul>	<p><u>Asking simple questions and using different types of scientific enquiries to answer them</u></p> <ul style="list-style-type: none"> <li>• The children consider their prior knowledge when asking questions. They independently use a range of questions stems. Where appropriate, they answer these questions.</li> <li>• The children answer questions posed by the teacher</li> <li>• Given a range of resources, the children decide for themselves how to gather evidence to answer the question. They recognize the type of enquiry that they have chosen to answer their question.</li> </ul> <p><u>Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers:</u></p> <ul style="list-style-type: none"> <li>• The children make systematic and careful observations</li> <li>• They use a range of equipment for measuring length, time, temperature and capacity. They use standard units for their measurements.</li> </ul> <p><u>Setting up simple practical enquiries, comparative and fair tests:</u></p> <ul style="list-style-type: none"> <li>• The children select form a range of practical resources to gather evidence to answer questions generated by themselves or the teacher.</li> <li>• They follow their plan to carry out: observations and tests to classify;</li> </ul>	<p><u>Planning different types of scientific enquiries to answer questions, including recognizing and controlling variables where necessary:</u></p> <ul style="list-style-type: none"> <li>• Children independently ask scientific questions. This may be stimulated by a scientific experience of involve asking further questions based on their developed understanding following an enquiry</li> <li>• Given a wide range of resources the children decide for themselves how to gather evidence to answer a scientific question. They choose a type of enquiry to carry out and justify their choice. They recognize how secondary sources can be used to answer questions that cannot be answered through practical work.</li> <li>• They children select from a range of practical resources to gather evidence to answer their questions. They carry out fair test, recognizing and controlling variables. They decide what observations or measurements to make over time and for how ong. They look for patterns and relationships sing a suitable sample.</li> </ul> <p><u>Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat findings when appropriate:</u></p> <ul style="list-style-type: none"> <li>• The children select measuring equipment to give the most precise results (e.g. ruler, tape measure, trundle wheel, force meter with a suitable scale)</li> </ul>
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	<p><u>Identifying and classifying:</u></p> <ul style="list-style-type: none"> <li>• Children use their observations and testing to compare objects, materials and living things. They sort and group these things, identifying their own criteria for sorting.</li> <li>• They use simple secondary sources (such as identification sheets) to name living things. They describe the characteristics they used to identify a living thing.</li> </ul> <p><u>Gathering and recording data to help in answering questions:</u></p> <ul style="list-style-type: none"> <li>• The children record their observations (e.g. using photographs, videos, drawings, labelled diagrams, or in writing)</li> <li>• They record their measurements (e.g. using prepared tables, pictograms, tally charts and block graphs)</li> <li>• They classify using simple prepared tables and sorting rings</li> </ul> <p><u>Using their observations and ideas to suggest answers to questions:</u></p> <ul style="list-style-type: none"> <li>• Children use their experiences of the world around them to suggest appropriate answers to questions. They are supported to relate these to their evidence (e.g. observations they have made, measurements they have taken or information they have gathered from secondary sources)</li> <li>• The children recognize 'biggest and smallest', 'best and worst', etc. from their data</li> </ul>	<p>comparative and fair tests; observations over time; and pattern seeking</p> <p><u>Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. Record findings using simple scientific language, drawings, labelled diagrams keys, bar charts and tables:</u></p> <ul style="list-style-type: none"> <li>• The children sometimes decide how to record and present evidence. They record their observation e.g. using photographs, videos, pictures, labelled diagrams or writing. They record their measurements e.g. using tables, tally charts and bar charts (given templates, if required, to which they can add headings) They record classifications (e.g. using tables, Venn diagrams, Carroll diagrams</li> <li>• Children are supported to present the same data in different ways in order to help with answering the question</li> </ul> <p><u>Using straightforward scientific evidence to answer questions or support their findings:</u></p> <ul style="list-style-type: none"> <li>• Children answer their own and others' questions based on observations they have made, measurements they have taken or information they have gained from secondary sources. The answers are consistent with the evidence.</li> </ul> <p>Identifying differences, similarities or changes related to simple scientific ideas and processes:</p> <ul style="list-style-type: none"> <li>• Children interpret their data to generate simple comparative statements based on</li> </ul>	<ul style="list-style-type: none"> <li>• During an inquiry, they make decisions e.g. whether they need to: take repeat findings (fair testing); increase the sample size (pattern seeking); adjust the observation period and frequency (observing over time); or check further secondary sources (researching); in order to get accurate data (closer to the true value)</li> </ul> <p><u>Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs:</u></p> <ul style="list-style-type: none"> <li>• The children decide how to record and present evidence. They record observations e.g. using annotated photographs, videos, labelled diagrams, observational drawings, labelled scientific diagrams or writing. They record measurements e.g. using tables, tally charts, bar charts, line graphs and scatter graphs. They record classifications e.g. using tables, Venn diagrams, Carroll diagrams and classification keys.</li> <li>• Children represent the same data in different ways in order to help with answering the question</li> </ul> <p><u>Identifying scientific evidence that has been used to support or refute ideas or arguments:</u></p> <ul style="list-style-type: none"> <li>• Children answer their own and others' questions based on observations they have made measurements they have taken or information they have gained from secondary sources. When doing this, they</li> </ul>
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			<p>their evidence They begin to identify naturally occurring patterns and causal relationships</p> <p><u>Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions:</u></p> <ul style="list-style-type: none"> <li>• They draw conclusions based on their evidence and current subject knowledge</li> <li>• They identify ways in which they adapted their method as they progressed or how they would do it differently if they repeated the enquiry</li> <li>• Children use their evidence to suggest values for different items tested using the same method (e.g. the distance travelled by a car on an additional surface)</li> <li>• Following a scientific experience, the children ask further questions which can be answered by extending the same enquiry</li> </ul> <p><u>Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions:</u></p> <ul style="list-style-type: none"> <li>• They communicate their findings to an audience both orally and in writing, using appropriate scientific vocabulary</li> </ul>	<p>discuss whether other evidence supports or refutes their answer.</p> <ul style="list-style-type: none"> <li>• They talk about how their scientific ideas change due to new evidence that they have gathered</li> <li>• They talk about how new discoveries change scientific understanding</li> </ul> <p><u>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:</u></p> <ul style="list-style-type: none"> <li>• In their conclusions, children: identify causal relationships and patterns in the natural world from their evidence; identify results that do not fit the overall pattern; and explain their findings using the subject knowledge</li> <li>• They evaluate, for example, the choice of method used, the control of variables, the precision and accuracy of measurements and the credibility of any secondary sources used</li> <li>• They identify any limitations that reduce the trust they have in their data</li> <li>• They communicate their findings to an audience using relevant scientific language and illustrations</li> </ul> <p><u>Using test results to make predictions to set up further comparative and fair tests:</u></p> <ul style="list-style-type: none"> <li>• Children use the scientific knowledge gained from enquiry work to make</li> </ul>
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				predictions they can investigate using comparative and fair tests
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Assessment	*	<ul style="list-style-type: none"> <li>• I can ask simple questions</li> <li>• I can use simple equipment to look very closely at things</li> <li>• I can test things in simple ways</li> <li>• I can group similar objects or items together</li> <li>• I answer questions in science by thinking about what I have seen</li> <li>• I can find information which helps me when I have to answer questions</li> </ul>	<ul style="list-style-type: none"> <li>• I can ask simple questions and know that there can be more than one answer</li> <li>• I can use simple equipment to look very closely at things so I can understand them better</li> <li>• I can test things in simple ways</li> <li>• I can identify different things in science and can group similar ones together</li> <li>• I use what I have seen and think to help me when I answer questions</li> <li>• I can find information and write it down which help me when I have to answer questions</li> </ul>	<ul style="list-style-type: none"> <li>• I use my results to draw a conclusion, suggest improvements and make predictions for answering a different question</li> <li>• I can identify some simple differences and similarities when making comparisons</li> <li>• I support my answers by pointing out the scientific evidence</li> <li>• I can report my conclusion from the results of my experiment</li> <li>• I can gather the data I need to answer a scientific question and then present them in a table, grid or graph</li> <li>• I can record my findings in</li> </ul>	<ul style="list-style-type: none"> <li>• I use my results to draw a conclusion and make predictions or suggest improvements for answering a different question or repeating my test</li> <li>• I can identify differences, similarities or changes when making comparisons in my experiments or scientific learning</li> <li>• I support my answers or conclusions by pointing out the scientific evidence</li> <li>• I can report my conclusion from the data I have measured</li> <li>• I can gather the data I need to answer a scientific question and then present it in an appropriate way (such as a table, grid or graph)</li> <li>• I can record my findings in labelled</li> </ul>	<ul style="list-style-type: none"> <li>• I support my argument by using some detailed scientific evidence</li> <li>• I can plan scientific experiments, stating which one variable will remain constant</li> <li>• I take measurements accurately and repeat measurements to improve my accuracy too</li> <li>• I can explore a range of graphs and charts such as scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</li> <li>• I look at experiment test results and can refine tests to make them fairer</li> <li>• I can explain my conclusions using a report or graph to describe the key</li> </ul>	<ul style="list-style-type: none"> <li>• I support an argument using specific scientific evidence</li> <li>• I can plan scientific experiments to answer questions, including listing the variables in the test and stating which one variable will remain constant</li> <li>• I take measurements very accurately and repeat my measurements to improve my accuracy too</li> <li>• I can use and explore a range of graphs and charts such as scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</li> </ul>
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				<p>simple labelled diagrams, keys, bar charts or tables</p> <ul style="list-style-type: none"> <li>• I can set up a simple fair test experiment to answer a scientific question</li> <li>• I can make observations and record measurements</li> <li>• I can ask relevant scientific questions</li> </ul>	<p>diagrams, keys, bar charts or tables</p> <ul style="list-style-type: none"> <li>• I can set up a practical fair test experiment to answer a scientific question</li> <li>• I can make careful observations and record accurate measurements using equipment or a data logger</li> <li>• I can ask relevant questions and use different types of scientific enquiries to answer them</li> </ul>	<p>evidence to support my answers</p>	<ul style="list-style-type: none"> <li>• I look at experiment test results and make predictions to answer further scientific questions or refine tests to make them fairer</li> <li>• I can explain my conclusions in details using a report or graph to describe the key evidence to support my answers and highlight the specific causes of the outcomes of my experiment</li> </ul>
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Key Vocabulary	*	<ul style="list-style-type: none"> <li>question, answer</li> <li>observe, observing</li> <li>equipment</li> <li>identify, classify, sort, group</li> <li>record - diagram, chart, map</li> <li>data</li> <li>compare, contrast, describe</li> <li>biology, chemistry, physics</li> </ul>	<ul style="list-style-type: none"> <li>Research, relevant questions scientific enquiry</li> <li>comparative and fair test systematic, careful observation accurate measurements</li> <li>equipment - thermometer, data logger</li> <li>data - gather, record, classify, present</li> <li>record - drawings, labelled diagrams, keys, bar charts, tables</li> <li>oral and written explanations</li> <li>conclusion</li> <li>predictions</li> <li>differences, similarities, changes</li> <li>evidence, improve, secondary sources</li> <li>guides, keys</li> <li>construct</li> <li>interpret</li> </ul>	<ul style="list-style-type: none"> <li>plan</li> <li>variables</li> <li>measurements</li> <li>accuracy, precision</li> <li>repeat readings</li> <li>report data - scientific diagrams, labels, classification keys, tables, scatter graphs, bar graph and line graphs</li> <li>predictions</li> <li>further, comparative and fair test</li> <li>report and present - conclusions, causal relationship, explanations, degree of trust, oral and written display and presentation</li> <li>evidence - support, refute ideas or arguments</li> <li>identify, classify and describe</li> <li>patterns</li> <li>systematic</li> <li>quantitative measurements</li> </ul>
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Plants

EYFS/ NC Links	*	<ul style="list-style-type: none"> <li>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</li> <li>Identify and describe the basic structure of a variety of common</li> </ul>	<ul style="list-style-type: none"> <li>Observe and describe how seeds and bulbs grow into mature plants</li> <li>Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy</li> </ul>	<ul style="list-style-type: none"> <li>Identify and describe the functions of different parts of a flowering plant: roots, stem/trunk, leaves and flowers</li> <li>Explore the requirements of plants for life</li> </ul>			
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		flowering plants, including trees		<p>and growth and how they vary from plant to plant</p> <ul style="list-style-type: none"> <li>Investigate the way in which water is transported within plants</li> <li>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal</li> </ul>			
Assessment	*	<ul style="list-style-type: none"> <li>I can name some plants that I often see in the garden and countryside as well as some trees that drop their leaves and some that don't</li> <li>I understand the inside of some plants and trees and how they grow which I can explain to others</li> </ul>	<ul style="list-style-type: none"> <li>I know and can describe how seeds and bulbs grow into mature plants</li> <li>I know that plants need water, light and a suitable temperature to grow and stay healthy</li> </ul>	<ul style="list-style-type: none"> <li>I know the different parts of a flowering plant (roots, stem/trunk, leaves and flowers) and what each part does</li> <li>I know what a plant needs to live and grow, and that some plants need more or less air, light, water, nutrients from</li> </ul>			

				<p>the soil and room to grow, depending on the plant variety</p> <ul style="list-style-type: none"> <li>• I can tell you how water is transported in a plant</li> <li>• I know that a flower is important in the life cycle of a plant as the flower helps the plant to pollinate, create a seed and then disperse the seed</li> </ul>			
Key Vocabulary	*	<ul style="list-style-type: none"> <li>• Leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud</li> <li>• Names of trees in the local area</li> <li>• Names of garden and wild flowering plants in the local area</li> </ul>	<ul style="list-style-type: none"> <li>• As for Year 1 plus light, shade, sun, warm, cool, water, grow, healthy</li> </ul>	<ul style="list-style-type: none"> <li>• Photosynthesis, pollen, insect/wind pollination, seed formation, seed dispersal (wind dispersal, animal dispersal, water dispersal)</li> </ul>			

## Living things and their habitats

EYFS/ NC Links	*		<ul style="list-style-type: none"> <li>• Explore and compare the differences between things that are living, dead and have never been alive</li> <li>• 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 animals and plants, and how they depend on each other</li> <li>• Identify and name a variety of plants and animals in their habitats, including microhabitats</li> <li>• Describe how animals obtain their food from plants and other animals, using a simple food chain, and identify and name different sources of food</li> </ul>		<ul style="list-style-type: none"> <li>• Recognise that living things can be grouped in a variety of ways</li> <li>• Explore an use classification keys to help group, identify and name a variety of living things in their local and wider environment</li> <li>• Recognise that environments can change and that this can sometimes pose dangers to living things</li> </ul>	<ul style="list-style-type: none"> <li>• Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</li> <li>• Describe the life process of reproduction in some plants and animals</li> </ul>	<ul style="list-style-type: none"> <li>• Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals</li> <li>• Give reasons for classifying plants and animals based on specific characteristics</li> </ul>
Assessment	*		<ul style="list-style-type: none"> <li>• I can explore and compare the differences between things that are living,</li> </ul>		<ul style="list-style-type: none"> <li>• I can group living things in many ways - such as their size, their appearance,</li> </ul>	<ul style="list-style-type: none"> <li>• I can speak about the different life cycles of mammals,</li> </ul>	<ul style="list-style-type: none"> <li>• I can describe the groups I classify things into</li> </ul>

			<p>dead, and things that have never been alive</p> <ul style="list-style-type: none"> <li>• I can identify that most living things live in places which suit their basic needs. I can describe how different kinds of animals and plants need different types of places to live and that they depend on each other</li> <li>• I can identify and name a variety of plants and animals in their habitats, including micro-habitats</li> <li>• I understand the simple food chain and can identify and name different sources of food. I can describe how animals obtain their food from plants and other animals</li> </ul>		<p>their habitat or needs</p> <ul style="list-style-type: none"> <li>• I know how to use a classification key in science to identify and animal or plant</li> <li>• I know that an environment may change over time, and this can be dangerous for the living things in the environment</li> </ul>	<p>amphibians, insects and birds</p> <ul style="list-style-type: none"> <li>• I can describe the process of reproduction in some plants and animals</li> <li>• I know the stages of change as humans develop to old age</li> </ul>	<ul style="list-style-type: none"> <li>• I can describe why I classify plants and animals in certain ways</li> </ul>
Key Vocabulary	*		<ul style="list-style-type: none"> <li>• Living, dead, never been alive, suited, suitable, basic needs, food, food chain, shelter, move, feed</li> </ul>		<ul style="list-style-type: none"> <li>• Classification, classification keys, environment, habitat, human impact, positive, negative, migrate, hibernate</li> </ul>	<ul style="list-style-type: none"> <li>• Life cycle, reproduce, sexual, sperm, fertilises, egg, live young, metamorphosis, asexual, plantlets,</li> </ul>	<ul style="list-style-type: none"> <li>• Vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, insects,</li> </ul>

			<ul style="list-style-type: none"> <li>Names of local habitats e.g. pond, woodland etc.</li> <li>Names of micro-habitats e.g. under logs, in bushes etc.</li> </ul>			runners, bulbs, cuttings	spiders, snails, worms, flowering, non-flowering
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**Animals, including humans**

EYFS/ NC Links	*	<ul style="list-style-type: none"> <li>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals</li> <li>Identify and name a variety of common animals that are carnivores, herbivores and omnivores</li> <li>Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)</li> </ul>	<ul style="list-style-type: none"> <li>Notice that animals, including humans, have offspring which grow into adults</li> <li>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</li> <li>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene</li> </ul>	<ul style="list-style-type: none"> <li>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</li> <li>Identify that humans and some other animals have skeletons and muscles for support, protection and movement</li> </ul>	<ul style="list-style-type: none"> <li>Describe the simple functions of the basic parts of the digestive system in humans</li> <li>Identify the different types of teeth in humans and their simple functions</li> <li>Construct and interpret a variety of food chains, identifying producers, predators and prey</li> </ul>	<ul style="list-style-type: none"> <li>Describe the changes as humans develop to old age</li> </ul>	<ul style="list-style-type: none"> <li>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</li> <li>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</li> <li>Describe the ways in which nutrients and water are transported within animals, including humans</li> </ul>
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		<ul style="list-style-type: none"> <li>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense</li> </ul>					
Assessment	*	<ul style="list-style-type: none"> <li>I can identify and name a variety of common animals, including fish, amphibians, reptiles, birds and mammals</li> <li>I know the names of some animals which eat meat. others that eat vegetables and some that eat both</li> <li>I can describe the different shape and form of a number of animals including my pets</li> <li>I know the parts of the human body, can</li> </ul>	<ul style="list-style-type: none"> <li>I know that animals, including humans, have babies which grow into adults</li> <li>I know that animals, including humans, need water, food and air to survive</li> <li>I know that exercise, eating the right amounts of different types of food, and hygiene are all important for humans</li> </ul>	<ul style="list-style-type: none"> <li>I know that animals, including humans, need the right types of nutrition and they get nutrition from what they eat</li> <li>I know that humans and some other animals have skeletons and muscles for support, protection and movement</li> </ul>	<ul style="list-style-type: none"> <li>I can describe some of the ways food is digested in the digestive system in humans</li> <li>I know humans have different types of teeth and how each tooth type has a different job when eating</li> <li>When I build a food chain, I can tell you what are the producers, predators and prey</li> </ul>	<ul style="list-style-type: none"> <li>I know the stages of change as humans develop to old age</li> </ul>	<ul style="list-style-type: none"> <li>I can describe and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</li> <li>I know that good and bad diet, exercise, drugs and lifestyle all have an effect on how the body functions</li> <li>I know how nutrients and water are transported within animals, including humans</li> </ul>

		draw a picture of it and name the parts. I know which parts of the body let me hear, taste and smell					
Key Vocabulary	*	<ul style="list-style-type: none"> <li>• Head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves</li> <li>• Names of animals experienced first-hand from each vertebrate group</li> <li>• Parts of the body including those linked to PSHE teaching (see joint document produced by the ASE and</li> </ul>	<ul style="list-style-type: none"> <li>• Offspring, reproduction, growth, child, young/old stages (examples - chick/hen, baby/child/adult, caterpillar/butterfly), exercise, heartbeat, breathing, hygiene, germs, disease, food types (examples - meat, fish, vegetables, bread, rice, pasta)</li> </ul>	<ul style="list-style-type: none"> <li>• Nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water, skeleton, bones, muscles, support, protect, move, skull, ribs, spine, muscles, joints</li> </ul>	<ul style="list-style-type: none"> <li>• Digestive system, digestion, mouth, teeth, saliva, oesophagus, stomach, small intestine, nutrients, large intestine, rectum, anus, teeth, incisor, canine, molar, premolars, herbivore, carnivore, omnivore, producer, predator, prey, food chain</li> </ul>	<ul style="list-style-type: none"> <li>• Puberty - the vocabulary to describe sexual characteristics</li> </ul>	<ul style="list-style-type: none"> <li>• Heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle, circulatory system, diet, exercise, drugs, lifestyle</li> </ul>

		PSHE Association) <ul style="list-style-type: none"> <li>Senses - touch, see, smell, taste, hear, fingers (skin), eyes, nose, ear and tongue</li> </ul>					
Evolution & Inheritance							
EYFS/ NC Links	*						<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> </ul>



							<ul style="list-style-type: none"> <li>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution</li> </ul>
Assessment	*						<ul style="list-style-type: none"> <li>I understand that living things have changed over time and that fossils show us the types of animals that lived millions of years ago</li> <li>I know that living things have babies but each baby is similar but not identical to their parents</li> <li>I know that animals and plants have adapted or evolved to suit the</li> </ul>

							<ul style="list-style-type: none"> <li>environment they live in</li> </ul>
Key Vocabulary	*						<ul style="list-style-type: none"> <li>Offspring, sexual reproduction, vary, characteristics, suited, adapted, environment, inherited, species, fossils</li> </ul>
Seasonal Changes							
EYFS/ NC Links	*	<ul style="list-style-type: none"> <li>Observe changes across the four seasons</li> <li>Observe and describe weather associated with the seasons and how day length varies</li> </ul>					
Assessment	*	<ul style="list-style-type: none"> <li>I can notice and can describe the changes that happen from Spring to Summer to Autumn and into Winter</li> </ul>					

		<ul style="list-style-type: none"> <li>I know what weather we might find in spring, summer, autumn and winter and I know winter days are shorter than summer days</li> </ul>					
Key Vocabulary	*	<ul style="list-style-type: none"> <li>Weather (sunny, rainy, windy, snowy etc.)</li> <li>Seasons (winter, summer, spring, autumn)</li> <li>Sun, sunrise, sunset, day length</li> </ul>					
Materials/States of Matter							
EYFS/ NC Links	*	<ul style="list-style-type: none"> <li>Distinguish between an object and the material from which it is made</li> <li>Identify and name a variety of everyday materials, including wood, plastic, glass,</li> </ul>	<ul style="list-style-type: none"> <li>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</li> <li>Find out how the shapes of solid objects made from</li> </ul>		<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</li> </ul>	<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</li> </ul>	

		<p>metal, water and rock</p> <ul style="list-style-type: none"> <li>Describe the simple physical properties of a variety of everyday materials</li> <li>Compare and group together a variety of materials on the basis of their simple physical properties</li> </ul>	<p>some materials can be changed by squashing, bending, twisting and stretching</p>		<p>research the temperature at which this happens in degrees Celsius (<math>^{\circ}\text{C}</math>)</p> <ul style="list-style-type: none"> <li>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature</li> </ul>	<p>response to magnets</p> <ul style="list-style-type: none"> <li>Know that some materials will dissolve in liquids 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</li> </ul>	
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						change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda	
Assessment	*	<ul style="list-style-type: none"> <li>I know that the name of an object and the name of the material it is made from will be different</li> <li>I know the names of some materials I see every day, including wood, plastic, glass, metal, water and rock</li> <li>I can describe the simple physical properties of a variety of everyday materials</li> <li>I can compare the simple physical properties of a variety of everyday</li> </ul>	<ul style="list-style-type: none"> <li>I know which everyday materials including wood, metal, plastic, glass, brick, rock, paper and cardboard are suitable for particular uses</li> <li>I know how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</li> </ul>		<ul style="list-style-type: none"> <li>I can describe the differences between solids, liquids or gases and use this to group materials</li> <li>I know that some materials change to a different state when they are heated</li> <li>I can talk about evaporation and condensation as parts of the water cycle and I know that more water evaporates when the temperature is higher</li> </ul>	<ul style="list-style-type: none"> <li>I can compare and group together everyday materials based on their properties such as their hardness, solubility, transparency, conductivity (electrical and heat) and magnetism</li> <li>I know that some materials will dissolve in liquid to form a solution, and I can describe how to recover a substance from a solution</li> <li>I can describe how mixtures might be separated, choosing from filtering, sieving and evaporating by looking at the materials that need to be separated</li> </ul>	

		materials and group similar ones together				<ul style="list-style-type: none"> <li>• I can describe why some materials are used for a specific purpose, such as glass for windows or copper for wires</li> <li>• I can describe how dissolving, mixing and changes of state are reversible changes</li> <li>• I understand that some changes to materials, where new materials are formed, are not reversible, such as burning or cooking materials</li> </ul>	
Key Vocabulary	*	<ul style="list-style-type: none"> <li>• Object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth,</li> </ul>	<ul style="list-style-type: none"> <li>• Names of materials - wood, metal, plastic, glass, brick, rock, paper, cardboard</li> <li>• Properties of materials - as for Year 1 plus opaque, transparent and translucent, reflective, non-reflective, flexible, rigid</li> <li>• Shape, push/pushing, pull/puling, twist/twisting, squash/squashing,</li> </ul>		<ul style="list-style-type: none"> <li>• Solid, liquid, gas, state change, melting, freezing, melting point, boiling point, evaporation, temperature, water cycle</li> </ul>	<ul style="list-style-type: none"> <li>• Thermal/electrical insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve, reversible/non-reversible change, burning, rusting, new material</li> </ul>	

		shiny, dull, see-through, not see-through	bend/bending, stretch/stretching				
Rocks							
EYFS/ NC Links	*			<ul style="list-style-type: none"> <li>• Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</li> <li>• Describe in simple terms how fossils are formed when things that have lived are trapped within rock</li> <li>• Recognise that soils are made from rocks and organic matter</li> </ul>			
Assessment	*			<ul style="list-style-type: none"> <li>• I can group and compare different rock types based on their appearance and properties</li> </ul>			

				<ul style="list-style-type: none"> <li>• I know how fossils are formed</li> <li>• I know that soil is made from rocks and rotting materials such as leaves or plants</li> </ul>			
Key Vocabulary	*			<ul style="list-style-type: none"> <li>• Rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorb water, soil, fossil, marble, chalk, granite, sandstone, slate, soil, peat, sandy/chalk/clay soil</li> </ul>			
Light							
EYFS/ NC Links	*			<ul style="list-style-type: none"> <li>• Recognise that they need light in order to see things and that dark is the absence of light</li> </ul>			<ul style="list-style-type: none"> <li>• Recognise that light appears to travel in straight lines</li> <li>• Use the idea that light travels in</li> </ul>



				<ul style="list-style-type: none"> <li>• Notice that light is reflected from surfaces</li> <li>• Recognise that light from the sun can be dangerous and that there are ways to protect their eyes</li> <li>• Recognise that shadows are formed when the light from a light source is blocked by an opaque object</li> <li>• Find patterns in the way that the size of shadows change</li> </ul>			<p>straight lines to explain that objects are seen because they give out or reflect light into the eye</p> <ul style="list-style-type: none"> <li>• Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them</li> </ul>
Assessment	*			<ul style="list-style-type: none"> <li>• I understand that we need light to see things around us, and that, if there is no light, then we have darkness</li> <li>• I know that light is reflected from surfaces</li> <li>• I know that light direct from the</li> </ul>			<ul style="list-style-type: none"> <li>• I know light travels in straight lines</li> <li>• I know we can see objects because the light from the object or reflected from the object travels into the eye</li> </ul>

				<p>sun can be dangerous and our eyes should be protected</p> <ul style="list-style-type: none"> <li>• I know that a shadow is made when light is blocked by an object</li> <li>• I can describe the pattern in the way a shadow changes when I move the object or the light</li> </ul>			<ul style="list-style-type: none"> <li>• I can draw light lines from an object into the eye to show how we see</li> <li>• I can show that light causes shadows that are smaller or larger shapes of the original object</li> </ul>
Key Vocabulary	*			<ul style="list-style-type: none"> <li>• Light, light source, dark, absence of light, transparent, translucent, opaque, shiny, matt, surface, shadow, reflect, mirror, sunlight, dangerous</li> </ul>			<ul style="list-style-type: none"> <li>• As for Year 3 - Light, plus straight lines, light rays</li> </ul>
Forces							
EYFS/ NC Links	*			<ul style="list-style-type: none"> <li>• Compare how things move on surfaces</li> <li>• Notice that some forces</li> </ul>		<ul style="list-style-type: none"> <li>• Explain that unsupported objects fall towards the Earth because of the force of</li> </ul>	

				<p>need contact between two objects, but magnetic forces can act at a distance</p> <ul style="list-style-type: none"><li>• Observe how magnets attract or repel each other and attract some materials and not others</li><li>• 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</li><li>• Describe magnets as having two poles</li><li>• Predict whether two magnets will attract or repel each other, depending on which poles are facing</li></ul>		<p>gravity acting between the Earth and the falling object</p> <ul style="list-style-type: none"><li>• Identify the effects of air resistance, water resistance and friction, that act between moving surfaces</li><li>• Recognise that some mechanisms, including levers, pulleys and gear, allow a smaller force to have a greater effect</li></ul>	
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Assessment	*			<ul style="list-style-type: none"> <li>• I can describe how the same object may move differently on different surfaces - such as on a road, on ice, on a table or on the carpet</li> <li>• I know that many force need contact between objects to pass on a force (such as pushing or pulling an object), but some forces (such as magnetic forces or gravity) do not need to have contact</li> <li>• I know that magnets can attract and repel each other and that magnets attract some materials but not all materials</li> <li>• I can group together materials that</li> </ul>		<ul style="list-style-type: none"> <li>• I can describe the force of gravity to explain why objects fall</li> <li>• I know that air resistance, water resistance and friction all act on objects to slow them down</li> <li>• I know that levers, pulleys and gears can turn a small force into a greater force</li> </ul>	
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				<p>are attracted by a magnet and others that are not. I know some materials that are always attracted to magnets</p> <ul style="list-style-type: none"> <li>• I know that magnets have two poles</li> <li>• I know that like poles on a magnet repel and opposite poles on magnets attract</li> </ul>			
Key Vocabulary	*			<ul style="list-style-type: none"> <li>• Force, push, pull, twist, contact force, non-contact force, magnetic force, magnet, strength, bar magnet, ring magnet, button magnet, horseshoe magnet, attract, repel, magnetic material, metal, iron, steel, poles, north pole, south pole</li> </ul>		<ul style="list-style-type: none"> <li>• Force, gravity, Earth, air resistance, water resistance, friction, mechanisms, simple machines, levers, pulleys, gears</li> </ul>	

## Sound

<p>EYFS/ NC Links</p>	<p>*</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> <li>• Find patterns between the pitch of a sound and features of the object that produce it</li> <li>• Find patterns between the volume of a sounds and the strength of the vibrations that produced it</li> <li>• Recognize that sounds get fainter as the distance from the sound source increases</li> </ul>		
<p>Assessment</p>	<p>*</p>				<ul style="list-style-type: none"> <li>• I know how sounds are made</li> <li>• I know that sound travels through air (or water) to reach the ear</li> </ul>		

					<ul style="list-style-type: none"> <li>• I can talk about how the size or shape of an object creating a sound can affect what the sound will be like</li> <li>• I can talk about how the strength of the vibrations of an object creating a sound can affect how loud the sound will be</li> <li>• I know that sounds get fainter as you move away from the place where the sound is being made</li> </ul>		
Key Vocabulary	*				<ul style="list-style-type: none"> <li>• Sound, source, vibrate, vibration, travel, pitch (high, low), volume, faint, loud, insulation</li> </ul>		
Electricity							
EYFS/ NC Links	*				<ul style="list-style-type: none"> <li>• Identify common appliances that run on electricity</li> <li>• Construct a simple series electrical circuit, identifying and naming its basic parts, including cells,</li> </ul>		<ul style="list-style-type: none"> <li>• Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells</li> </ul>

					<p>wire, bulbs, switches and buzzers</p> <ul style="list-style-type: none"> <li>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</li> <li>Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</li> <li>Recognise some common conductors and insulators, and associate metals with being good conductors</li> </ul>		<p>used in the circuit</p> <ul style="list-style-type: none"> <li>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</li> <li>Use recognised symbols when representing a simple circuit in a diagram</li> </ul>
Assessment	*				<ul style="list-style-type: none"> <li>I can list a number of common objects that need electricity to function</li> <li>I can build a series circuit, naming the cells, wires, bulbs, switches and buzzers</li> <li>I can tell whether a bulb will light when I look at a circuit as I</li> </ul>		<ul style="list-style-type: none"> <li>I know that a lamp is brighter and a buzzer is louder if the voltage of battery used is higher</li> <li>I can describe how a circuit functions, including the brightness of</li> </ul>

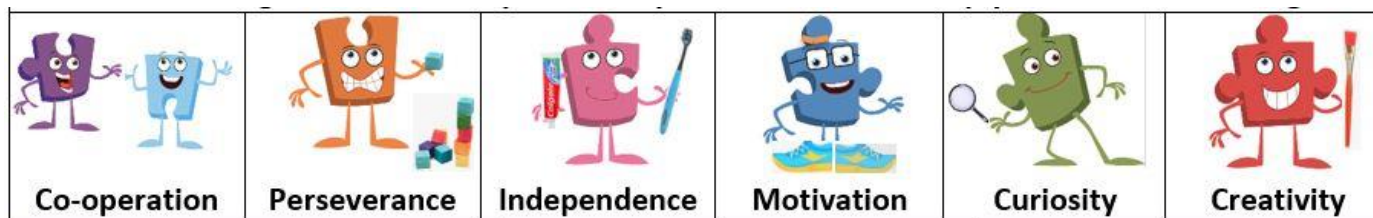


					<p>know the circuit must be a complete loop with a battery</p> <ul style="list-style-type: none"> <li>• I know what a switch can do when I build or look at a circuit</li> <li>• I know metals are good conductors of electricity - and can name some more and also name some good insulators</li> </ul>		<p>bulbs and the loudness of buzzers based on the way a circuit is built and the on/off position of switches</p> <ul style="list-style-type: none"> <li>• I can draw a circuit diagram using circuit symbols for lights, wires, switches and other parts</li> </ul>
Key Vocabulary	*				<ul style="list-style-type: none"> <li>• Electricity, electrical appliance/device, mains, plug, electrical circuit, complete circuit, component, cell, battery, positive, negative, connect/connections, loose connection, short circuit, crocodile clip, bulb, switch, buzzer, motor, conductor, insulator, metal, non-metal, symbol</li> </ul>		<ul style="list-style-type: none"> <li>• Circuit, complete circuit, circuit diagram, circuit symbol, cell, battery, bulb, buzzer, motor, switch, voltage</li> </ul>
Earth and Space							

EYFS/ NC Links	*					<ul style="list-style-type: none"> <li>Describe the movement of the Earth, and other planets, relative to the Sun in the solar system</li> <li>Describe the movement of the Moon relative to the Earth</li> <li>Describe the Sun, Earth and Moon as approximately spherical bodies</li> <li>Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky</li> </ul>	
Assessment	*					<ul style="list-style-type: none"> <li>I know how the Earth and other planets move around the solar system</li> <li>I can describe how the Moon moves round the Earth</li> <li>I know that the Sun, Earth and Moon are approximately spherical in shape</li> </ul>	

						<ul style="list-style-type: none"> <li>I know that day and night occur as the Earth rotates</li> </ul>		
Key Vocabulary	*					<ul style="list-style-type: none"> <li>Earth, Sun, Moon, (Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune), spherical, solar system, rotates, star, orbit, planets</li> </ul>		
Value Links	<u>Thankfulness</u> <ul style="list-style-type: none"> <li>I am thankful for my learning opportunities</li> <li>I am thankful for a safe yet challenging learning environment</li> <li>I am thankful for my teacher and classmates</li> <li>I am thankful for the resources we have</li> <li>I am thankful for exciting learning such as science days and the chance to work together</li> </ul>			<u>Love</u> <ul style="list-style-type: none"> <li>I am supportive of those around me</li> <li>I have an appreciation of the world around me and my place in it</li> <li>I love and respect nature and living things</li> </ul>		<u>Courage</u> <ul style="list-style-type: none"> <li>I have the courage to challenge myself in my learning</li> <li>I have the courage to embrace new opportunities and 'step outside my comfort zone'</li> <li>I have the courage to ask questions about the world around me and my place in it</li> </ul>		
Metacognition Links	<u>EYFS and KS1</u> Cooperation – I can work in groups and with a learning partner Cooperation – I can share my ideas with others Cooperation – I can help others with their learning Perseverance – I can keep trying and show resilience if I find things tricky Perseverance – I can focus on my learning Independence - I can listen to and follow clear instructions Independence – I can think about what I already know and how it can help me Motivation – I am motivated to do my best and try new challenges Curiosity – I am keen to learn new skills and ask questions about my learning Creativity – I can explore different ways to do things				<u>KS2</u> Cooperation – I can work with others in a variety of combinations Cooperation – I can share my ideas and opinions with others Cooperation – I respect and value everyone's ideas Cooperation – I can help others with their learning Cooperation – I will learn in a way that helps others to learn too Perseverance – I can show resilience and work to an end result Perseverance – I will put my best efforts into learning Independence – I will listen and follow instructions Independence – I take responsibility for my own learning Independence – I will organize myself Motivation – I can self-motivate and motivate others. Motivation – I can challenge myself.			

		<p>Motivation – I always look at how I can improve and further my learning</p> <p>Curiosity – I can ask questions to further my knowledge and understanding</p> <p>Curiosity – I explore ways to solve problems</p> <p>Creativity - I can think about problems and look at different ways to solve them</p> <p>Creativity – I can find different ways to do things</p>
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**\*See EYFS (area of EYFS) progression document for information on EYFS curriculum**