

<b>Working Scientifically progression</b>							
The below 4 pages show the progression and build-up of 'Working Scientifically' skills that are taught in each half term topic.							
	<b>By the end of Reception</b>	<b>By the end of KS1</b>		<b>By the end of Year 4 (Lower KS2)</b>		<b>By the end of Year 6 (Upper KS2)</b>	
<b>To work Scientifically</b>	<p><i>Look closely at similarities, differences, patterns and change</i></p> <p>Provide interesting natural environments for children to explore freely outdoors. Make collections of natural materials to investigate and talk about. Suggestions: • contrasting pieces of bark • different types of leaves and seeds • different types of rocks • different shells and pebbles from the beach Provide equipment to support these investigations. Suggestions: magnifying glasses or a tablet with a magnifying app. Encourage children to talk about what they see. Model</p>	<p><i>Ask simple questions</i></p> <p><i>Know how to use simple equipment</i></p> <p><i>Know how to observe closely</i></p> <p><i>Understand how to perform simple tests</i></p> <p><i>Know how to identify and classify</i></p> <p><i>Use observations and ideas to suggest answers to questions</i></p> <p><i>Know how to gather and record data to help answer questions</i></p>			<p><i>Ask relevant questions</i></p> <p><i>To know how to set up simple practical enquiries and comparative and fair tests</i></p> <p><i>To know how to make accurate measurements using standard units, using a range of equipment, e.g. thermometers and data loggers.</i></p> <p><i>To know how to gather, record, classify and present data in a variety of ways to help in answering questions.</i></p> <p><i>Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables.</i></p> <p><i>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</i></p> <p><i>Know how to use results to draw simple conclusions and suggest improvements, new questions and predictions for setting up further tests.</i></p> <p><i>Knows how to identify differences, similarities or changes related to simple, scientific ideas and processes.</i></p> <p><i>Understands how to use straightforward, scientific evidence to answer questions or to support their findings</i></p>	<p><i>Plan enquiries, including recognising and controlling variables where necessary.</i></p> <p><i>Knows how to use appropriate techniques, apparatus, and materials during fieldwork and laboratory work.</i></p> <p><i>Knows how to take measurements, using a range of scientific equipment, with increasing accuracy and precision.</i></p> <p><i>Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs, and models.</i></p> <p><i>Report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions.</i></p> <p><i>Present findings in written form, displays and other presentations. Use test results to make predictions to set up further comparative and fair tests.</i></p> <p><i>Know how to use simple models to describe scientific ideas, identifying scientific evidence that has been used to support or refute ideas or arguments.</i></p>	
	<b>Aut 1</b>	<p>observational and investigational skills. Ask out loud: "I wonder if...?" Plan and introduce new vocabulary, encouraging children to use it to discuss their findings and ideas.</p> <p>Understanding of the world educational</p>	Y1	Y2	Y3	Y4	Y5
		<p><b><u>Body and Senses</u></b></p> <p><i>Questioning</i> <i>Observe closely (body parts and senses)</i></p>	<p><b><u>Habitats</u></b></p> <p><i>Use simple equipment (Magnifying lenses)</i></p> <p><i>Gather and record data to help answer questions (use of tables, diagrams)</i></p> <p><i>Research through secondary sources (Looking at world habitats)</i></p>	<p><b><u>Plants</u></b></p> <p><i>Observation</i> <i>Exploration</i></p> <p><i>To know how to set up simple practical enquiries and comparative and fair tests (Begin to identify changing variable and some control variables)</i></p>	<p><b><u>States of Matter</u></b></p> <p><i>To know how to make accurate measurements using standard units, using a range of equipment, e.g. thermometers decibel readers-sound loggers)</i></p> <p><i>Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables.</i></p>	<p><b><u>Forces</u></b></p> <p><i>Observation</i> <i>Exploration</i></p> <p><i>Knows how to use appropriate techniques, apparatus, and materials during fieldwork and laboratory work.</i></p> <p><i>Knows how to take measurements, using a range of scientific</i></p>	<p><b><u>Nature's Library (Classification of living things)</u></b></p> <p><i>Research using secondary resources</i></p> <p><i>Plan enquiries, including recognising and controlling variables where necessary.</i></p> <p><i>Report findings from enquiries, including oral and</i></p>

	<p>programme (taken from the EYFS Framework 2022)</p> <p>Understanding the world involves guiding children to make sense of their physical world and their community. The frequency and range of children’s personal experiences increases their knowledge and</p>	<p><i>Simple Classification</i></p>	<p><i>Understand how to perform simple tests- beginning to understand that some parts of a test may need to change (variables)</i></p> <p><i>Classification (Things from an environment - are they living, once lived, never lived?)</i></p>	<p><i>Understands how to use straightforward, scientific evidence to answer questions or to support their findings</i></p> <p><i>Classification – Parts of a plant (recap from ks1)</i></p>	<p><i>To know how to set up simple practical enquiries and comparative and fair tests</i></p> <p><i>Classification (solid liquid and gas)</i></p>	<p><i>equipment, with increasing accuracy and precision.</i></p> <p><i>Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs, and models.</i></p>	<p><i>written explanations of results, explanations involving causal relationships, and conclusions (Presentation)</i></p>
<p><b>Aut 2</b></p>	<p>sense of the world around them – from visiting parks, libraries and museums to meeting important members of society such as police officers, nurses and firefighters. In addition, listening to a broad selection of stories, non-fiction, rhymes and poems will foster their understanding of our culturally, socially, technologically and ecologically diverse world. As well as building important knowledge, this extends their familiarity with words that support understanding across domains. Enriching and widening children’s vocabulary will support later reading comprehension.</p>	<p><b><u>Everyday Materials</u></b></p> <p><i>Questioning</i></p> <p><i>Classification (identify different everyday materials)</i></p> <p><i>Exploration (Look at and handling every day materials)</i></p> <p><i>Understand how to perform simple tests (Starting to complete pattern seeking experiments)</i></p>	<p><b><u>Everyday Materials</u></b></p> <p><i>Classification (of materials, based on their properties – building on last year’s knowledge).</i></p> <p><i>Understand how to perform simple tests</i></p> <p><i>Know how to gather and record data to help answer questions (Which materials is most suitable for...)</i></p> <p><i>Exploration</i></p> <p><i>Research through secondary sources.</i></p>	<p><b><u>Rocks</u></b></p> <p><i>Classification (Types of rocks according to their properties)</i></p> <p><i>To know how to set up simple practical enquiries and comparative and fair tests</i></p> <p><i>Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables.</i></p> <p><i>Knows how to identify differences, similarities or changes related to simple, scientific ideas and processes.</i></p> <p><i>Understands how to use straightforward, scientific evidence to answer questions or to support their findings</i></p>	<p><b><u>Sound</u></b></p> <p><i>Exploration</i></p> <p><i>Research</i></p> <p><i>Pattern seeking</i></p> <p><i>To know how to set up practical enquiries and comparative and fair tests (identify changing and 1 control variable)</i></p> <p><i>To know how to make accurate measurements using standard units, using a range of equipment, e.g. thermometers and data loggers. Decibel readers</i></p>	<p><b><u>All Change (States of Matter)</u></b></p> <p><i>Plan enquiries, including recognising and controlling variables where necessary – Dissolving, solutions, solutes – Plan an enquiry with all variables.</i></p> <p><i>Observation over time</i></p> <p><i>Knows how to take measurements, using a range of scientific equipment, with increasing accuracy and precision – Use of stop watches, observations.</i></p> <p><i>Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs, and models. Drawing diagrams, tables, graphs.</i></p> <p><i>Report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions.- Written conclusions,</i></p>	<p><b><u>Body Pump (heart)</u></b></p> <p><b><u>Explore</u></b></p> <p><b><u>Research, using secondary sources.</u></b></p> <p><i>Plan enquiries, including recognising and controlling variables where necessary</i></p> <p><i>Knows how to take measurements, using a range of scientific equipment, with increasing accuracy and precision. (pulse monitors, stopwatches)</i></p>
<p><b>Spring 1</b></p>	<p><b>Nursery Communication and Language</b></p> <ul style="list-style-type: none"> <li>• Understand ‘why’ questions, like: “Why</li> </ul>	<p><b><u>Animals, inc Humans</u></b></p> <p><i>Question/simple prediction</i></p> <p><i>Know how to observe closely</i></p>	<p><b><u>Everyday Materials</u></b></p> <p><i>Question/prediction</i></p> <p><i>Pattern seeking (to test different materials to identify which is best for dungarees)</i></p>	<p><b><u>Light</u></b></p> <p><i>Exploration</i></p> <p><i>Observation (Shadows growing the size –</i></p>	<p><b><u>Digestive system.</u></b></p> <p><i>Plan Observation over time enquiry ( substances impact human teeth)</i></p> <p><i>Classification (types of teeth)</i></p>	<p><b><u>The Earth and Beyond</u></b></p> <p><i>Research using secondary sources</i></p> <p><i>Know how to use simple models to describe scientific ideas, identifying scientific evidence that has been</i></p>	<p><b><u>Body health (Animals including Humans)</u></b></p> <p><i>Research using secondary sources</i></p>

	<p>do you think the caterpillar got so fat?"</p> <p><b>Personal, Social and Emotional Development</b></p> <ul style="list-style-type: none"> <li>• Make healthy choices about food, drink, activity and toothbrushing.</li> </ul> <p><b>Understanding the World</b></p> <ul style="list-style-type: none"> <li>• Use all their senses in hands-on exploration of natural materials.</li> <li>• Explore collections of materials with similar and/or different properties.</li> <li>• Talk about what they see, using a wide vocabulary.</li> <li>• Begin to make sense of their own life-story and family's history.</li> <li>• Explore how things work.</li> <li>• Plant seeds and care for growing plants.</li> <li>• Understand the key features of the life cycle of a plant and an animal.</li> <li>• Begin to understand</li> </ul>	<p><i>(use of magnifying glasses)</i></p> <p><i>Know how to identify and classify (Looking at features of animals/animal groups and recording – Sorting everyday/common animals into groups)</i></p> <p><i>Use observations and ideas to suggest answers to questions</i></p> <p><i>Know how to gather and record data to help answer questions (Drawing diagrams, making posters and leaflets, making models)</i></p>	<p><i>Fair testing –identify a changing variable (tea bag)</i></p> <p><i>Record data in tables</i></p>	<p><i>creating shadow puppets).</i></p> <p><i>Research using secondary sources (Sun safety).</i></p> <p><i>Ask relevant questions</i></p> <p><b>Fair test</b></p> <p><i>To know how to set up simple practical enquiries and comparative and fair tests (Light travelling in straight lines – use of periscopes and mirrors.)</i></p>	<p><i>Research using secondary sources (parts of the digestive system)</i></p> <p><i>Ask relevant questions with</i></p> <p><i>To know how to set up simple practical enquiries and comparative and fair tests (Pattern seeking – effects of different liquids on tooth enamel)</i></p> <p><i>Know how to use results to draw simple conclusions and suggest improvements, new questions and predictions for setting up further tests.</i></p> <p><i>Understands how to use straightforward, scientific evidence to answer questions or to support their findings</i></p>	<p><i>used to support or refute ideas or argument (geocentric model)</i></p> <p><i>Observation over time (Explore how shadows change –presenting evidence for movement of the Earth)</i></p> <p><i>Oral presentation</i></p>	<p><i>(Effects of illnesses such as scurvy, rickets and how to prevent them)</i></p> <p><i>How drug use affects our health.</i></p> <p><i>Observation, exploration (application of knowledge learnt throughout the module – designing health salad and then preparing it (DT cross curricular).</i></p> <p><i>Report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions.</i></p> <p><i>Present findings in written form, displays and other presentations. Use test results to make predictions to set up further comparative and fair tests. (Presentation based on research conducted)</i></p> <p><i>Use debate to present evidence to support arguments ( link to healthy eating)</i></p>
<p><b>Spring 2</b></p>	<p>the need to respect and care for the natural environment and all living things.</p> <ul style="list-style-type: none"> <li>• Explore and talk about different forces they can feel.</li> <li>• Talk about the differences between materials and changes they notice.</li> </ul> <p><b>Reception</b></p> <p><b>Communication and Language</b></p> <ul style="list-style-type: none"> <li>• Learn new vocabulary.</li> <li>• Ask questions to find out</li> </ul>	<p><b><u>Plants</u></b></p> <p><i>Observation – Observation over time –growing a flowering plant from a seedling</i></p> <p><i>Exploration – Looking at flowering plants, wild plants and trees in the local area – tree rubbings, leave samples, touching, feeling, smelling.</i></p> <p><i>Research Ask simple questions - (Identify parts of a</i></p>	<p><b><u>Plants</u></b></p> <p><i>Asking question – What are the needsx of a plant? Why is this plant unhealthy?</i></p> <p><i>Observation over time – Planting seeds and watching them germination- -keeping a seed diary.</i></p> <p><i>Research – hwo to keep a plant healthy What are the parts of a plant that we eat?</i></p>	<p><b><u>Animals, including humans.</u></b></p> <p><i>Classification Research – needs of a human Balanced diet</i></p> <p><i>Classification Exploration The types of different skeleton</i></p> <p><i>Ask relevant questions</i></p> <p><i>To know how to set up simple practical enquiries and</i></p>	<p><b><u>Electricity</u></b></p> <p><b>Ask relevant questions; Science Question/hypothesis:</b></p> <ul style="list-style-type: none"> <li>• <b>How can circuit be changed?</b></li> <li>• <b>Which materials are conductors?</b></li> </ul> <p><b><u>Classifying:</u></b></p> <ul style="list-style-type: none"> <li>• classify appliances which use electricity/batteries/are rechargeable</li> </ul> <p><i>To know how to set up simple practical enquiries and comparative and fair tests</i></p> <p><b><u>Exploring</u></b></p>	<p><b>Circle of Life</b></p> <p><b>Research using secondary sources (research life cycle of bird/amphibians/insects/mammal)</b></p> <p><b>Present data using line graphs and interpret to support (gestation of different animals)</b></p> <p><b>Interprets data to form conclusion about lifecycles (relationship between weight and gestation)</b></p>	<p><b>Everything Changes Adaptation and Evolution</b></p> <p>Research using secondary sources (Observe fossils evidence to understand evolution)</p> <p>Make key Observation and present/articulate findings (inherited and environmental characteristics)</p> <p>Refer to key Theories to support the understanding of</p>

	<p>more and to check what has been said to them. • Articulate their ideas and thoughts in well-formed sentences. • Describe events in some detail. • Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen. • Use new vocabulary in different contexts</p> <p><b>Personal, Social and Emotional Development</b></p> <ul style="list-style-type: none"> <li>• Know and talk about the different factors that support their overall health and wellbeing: - regular physical activity - healthy eating - toothbrushing - sensible amounts of 'screen time' - having a good sleep routine - being a safe pedestrian</li> </ul> <p><b>Understanding the World</b></p>	<p><i>plant – what is this, what is it used for. )</i></p> <p><i>Know how to use simple equipment (Magnifying glasses, clipboards, cameras)</i></p> <p><i>Know how to observe closely (Looking at parts of a plant closely)</i></p> <p><i>Know how to identify and classify</i></p>	<p><i>Clasification – What are the parts of a plant that we eat?</i></p> <p><i>Exploration-</i></p> <p><i>Know how to gather and record data to help answer questions - Looking at the local area – what types of plants do we have? How do we keep a plant healthy?</i></p>	<p><i>comparative and fair tests</i> <i>Testing skeleton use.</i></p> <p><i>To know how to gather, record, classify and present data in a variety of ways to help in answering questions.</i></p> <p><i>Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables – recording needs of an animal, inc human</i></p> <p><i>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions – Posters and leaflet making.</i></p>	<ul style="list-style-type: none"> <li>• construct simple series circuits, trying different components, for example, bulbs, buzzers and motors, and including switches, and use their circuits to create simple devices</li> <li>• that some materials can and some cannot be used to connect across a gap in a circuit.</li> </ul> <p><b>Pattern Seeking:</b></p> <ul style="list-style-type: none"> <li>• Find patterns in changing batteries and the effect on the bulb.</li> </ul> <p><b>Observation/fair test :</b></p> <ul style="list-style-type: none"> <li>• Create simple circuits and observe effects of changing number of bulbs or batteries.</li> </ul> <p><i>Knows how to identify differences, similarities or changes related to simple, scientific ideas and processes.</i></p> <p><i>Understands how to use straightforward, scientific evidence to answer questions or to support their findings</i></p> <p><b>Gather /record data</b></p> <ul style="list-style-type: none"> <li>• Record which material are conductors</li> <li>• Record effects of changing number of bulbs or batteries.</li> </ul>		<p>key concepts (Darwin and evolution)</p>
<p><b>Summer 1</b></p>	<ul style="list-style-type: none"> <li>• Explore the natural world around them. • Describe what they see, hear and feel while they are outside. • Recognise some environments that are different to the one in which they live. • Understand the effect of changing seasons on the natural world around them.</li> </ul>	<p><b><u>Seasonal Change</u></b></p> <p><i>Observation/ Observation over time.</i></p> <p><i>Ask simple questions - Why does the weather get colder? What should I wear in ....</i></p> <p><i>Know how to observe closely - Looking for</i></p>	<p><b><u>Taking Care (Animals, Including Humans)</u></b></p> <p><i>Ask simple questions</i></p> <p><i>Research – The basic needs of an animal</i></p> <p><i>Know how to identify and classify – Healthy diet, needs of a human</i></p>	<p><b><u>Magnets</u></b></p> <ul style="list-style-type: none"> <li>• Ask relevant questions -</li> </ul> <p><b>Science Question: What effects forces in a magnet?</b></p> <p><i>To know how to set up simple practical enquiries and comparative and fair tests</i></p>	<p><b><u>States of matter – Water cycle</u></b></p> <p><b>Science Question:</b></p> <ul style="list-style-type: none"> <li>• What happens when it rains?</li> <li>• At what temperature does water boil?</li> </ul> <p><b>Classify:</b> Materials according to solids, liquids and gases.</p> <p><b>Exploring :</b> variety of everyday materials and develop simple descriptions of the states of matter (solids hold their shape;</p>	<p><b>Everyday Materials</b></p> <p>Research using secondary data (types of solvents)</p> <p>Observation over time (evaporation)</p>	<p><b>Investigation Unit</b></p> <p>Pose Questions linked to materials and identify resources and enquiry answer it.</p> <p>Plan comparative and Fair tests independently</p> <p>Articulate/ justify choice of enquiry chosen to answer question</p>

	<p><b>ELG</b> <b>Communication and Language Listening Attention and Understanding</b></p> <ul style="list-style-type: none"> <li>• Make comments about what they have heard and ask questions to clarify their understanding</li> </ul> <p><b>Personal, Social and Emotional Development Managing Self</b></p> <ul style="list-style-type: none"> <li>• Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.</li> </ul> <p><b>Understanding the World The Natural World</b></p> <ul style="list-style-type: none"> <li>• Explore the natural world around them, making observations and drawing pictures of animals and plants.</li> <li>• Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class.</li> <li>• Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</li> </ul>	<p><i>signs of seasonal change.</i> <i>Looking at leaves/trees</i></p> <p><i>Know how to identify and classify</i></p> <p><i>Use observations and ideas to suggest answers to questions</i></p>	<p><i>Use observations and ideas to suggest answers to questions</i></p> <p><i>Know how to gather and record data to help answer questions</i></p>	<p><i>Knows how to identify differences, similarities or changes related to simple, scientific ideas and processes.</i></p> <p><i>Understands how to use straightforward, scientific evidence to answer questions or to support their findings</i></p> <ul style="list-style-type: none"> <li>• <b>Pattern seeking:</b> compare different surfaces – on which surface would a toy car travel the fastest?</li> <li>• <b>Exploration:</b> explore magnetism. What is the range for a magnet to attract another magnet/a metal object?</li> <li>• <b>Gather /record data :</b> which materials are attracted to magnets? How do magnets repel?</li> <li>• <b>Classification:</b> group materials that are attracts and not</li> <li>• <b>Observation:</b> magnets that repel and attracts according to which pole they are facing. Explain the reason for this.</li> </ul>	<p>liquids form a pool not a pile; gases escape from an unsealed container)</p> <p><b>Pattern Seeking:</b></p> <ul style="list-style-type: none"> <li>• looking for patterns in temperature for melting solids (ice, water and chocolate)</li> <li>• patterns in temperature for rate of evaporation.</li> </ul> <p><b>Observation:</b> observe water as a solid, a liquid and a gas and should note the changes to water when it is heated or cooled.</p> <ul style="list-style-type: none"> <li>•</li> </ul> <p><b>Gather /record data :</b> record the findings from observations and investigations.</p>		
<p><b>Summer 2</b></p>		<p><b>Investigations</b></p> <p><i>Ask simple questions - Which material is waterproof? Which material is the most opaque?</i></p>	<p><b>Animals, Inc Humans – Life cycles</b></p> <p><i>Ask simple questions</i></p> <p><i>Know how to use simple equipment</i></p>	<p><b>Animals, Including Humans</b></p> <p><i>Ask relevant questions</i></p> <p><i>To know how to set up simple practical enquiries and</i></p>	<p><b>Human Impact</b> <i>Living things in their habitat</i></p> <ul style="list-style-type: none"> <li>• <b>Science Question:</b> Are there more plant species in one area of my area then another?</li> </ul>	<p><b>Reproduction</b></p> <p><i>Plan enquiries, including recognising and controlling variables where necessary.</i></p> <ul style="list-style-type: none"> <li>• <b>Science Question/hypothesis:</b></li> </ul>	<p><b>Light</b></p> <p><i>Plan enquiries, including recognising and controlling variables where necessary.</i></p> <p><i>Knows how to use appropriate techniques,</i></p>

	<p>Know how to use simple equipment - Use magnifying lenses, measuring cylinders,</p> <p>Know how to observe closely</p> <p>Understand how to perform simple tests - Set up a simple experiment as part of a group.</p> <p>Know how to identify and classify- Identify materials, classify materials (waterproof, not waterproof, flexible, rigid)</p> <p>Use observations and ideas to suggest answers to questions</p> <p>Know how to gather and record data to help answer question – Use simple tables and simple diagrams to record findings.</p>	<p>Know how to observe closely - Recognize different life cycles/ life cycle stages.</p> <p>Understand how to perform simple tests</p> <p>Know how to identify and classify - To compare the difference and similarities of different life cycles</p> <p>Use observations and ideas to suggest answers to questions To represent these life cycles in a range of different ways – diagrams, models, speaking and listening.</p> <p>Know how to gather and record data to help answer questions</p> <ul style="list-style-type: none"> <li>I can recognize the life stages of common animals, including humans</li> <li>I can identify a life cycle</li> <li>I can draw/ complete a life cycle diagram</li> </ul>	<p>comparative and fair tests</p> <p>To know how to gather, record, classify and present data in a variety of ways to help in answering questions.</p> <p>Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables.</p> <p>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p> <p>Know how to use results to draw simple conclusions and suggest improvements, new questions and predictions for setting up further tests.</p> <p>Knows how to identify differences, similarities or changes related to simple, scientific ideas and processes.</p> <p>Understands how to use straightforward, scientific evidence to answer questions or to support their findings</p> <p><b>Science Question:</b></p> <ul style="list-style-type: none"> <li>How do diets of animals differ?</li> <li>What is a balanced diet?</li> <li>How can I keep my body healthy?</li> </ul> <p><b>Classify:</b> Animals according to their diet</p>	<ul style="list-style-type: none"> <li>Where has there been a positive impact Aston as a consequence of human action?</li> <li>How can I ensure that habitats are preserved in my community?</li> <li><b>Classify:</b> Classify living things in a variety of ways such as vertebrates or the flowering plants</li> <li><b>Exploring</b> Explore and walk around our local and wider environment to identify the different plants/ habitats</li> <li><b>Pattern Seeking:</b> Can children recognise a pattern in how the environment changes due to certain human activity (e.g fast food areas and discarding of food Areas in which human population increase resulted in less plant life <b>Observation:</b> Observe my local area has changed from the summer to now in Autumn</li> <li><b>Gather /record data walk</b> around the school or the local area and carry out a litter survey to identify causes</li> </ul>	<p>Do all plants reproduce using pollination? Why are most plant leaves green?</p> <p>Knows how to use appropriate techniques, apparatus, and materials during fieldwork and laboratory work.</p> <p>Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs, and models.</p> <p>Report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions.</p> <p>Present findings in written form, displays and other presentations. Use test results to make predictions to set up further comparative and fair tests.</p> <p>Know how to use simple models to describe scientific ideas, identifying scientific evidence that has been used to support or refute ideas or arguments.</p> <ul style="list-style-type: none"> <li><b>Exploring :</b> Explore the parts of a plant linked to reproduction?</li> <li><b>Observation over time :</b> Observe how plants grow through asexual reproduction  Observe the different parts of a plant</li> <li><b>Gather /record data</b> Children record observations of plant growth through cutting (asexual reproduction)</li> </ul>	<p>apparatus, and materials during fieldwork and laboratory work.</p> <p>Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs, and models.</p> <p>Report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions.</p> <p>Present findings in written form, displays and other presentations. Use test results to make predictions to set up further comparative and fair tests.</p> <p>Know how to use simple models to describe scientific ideas, identifying scientific evidence that has been used to support or refute ideas or arguments.</p> <ul style="list-style-type: none"> <li><b>Science Question/hypothesis:</b> Does light travel through all mediums at the same speed? <b>Hypothesis:</b> Shadows can be changed through the angle of light (throughout)</li> <li><b>Exploring:</b> How can we change the sharpness of a shadow?</li> <li><b>Pattern Seeking:</b> I can observe patterns in the way light changes as it enters different mediums (water, oil)</li> </ul>
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		<p>Food groups according to portions on the healthy plate.</p> <p><b>Exploring :</b></p> <ul style="list-style-type: none"><li>• Different food groups and why they are beneficial to our bodies.</li></ul> <p><b>Observation:</b></p> <ul style="list-style-type: none"><li>• Compare and observe movement of animals</li></ul>			<ul style="list-style-type: none"><li>• <b>Observation:</b> Identify how light changes direction through the use of a reflective surface</li><li>• <b>Observation/fair test :</b> Does the size/sharpness of shadow alter with the distance of the light source?</li><li>• <b>Gather /record data</b> Children record the size of shadows as the light source is moved</li></ul> <p>Children measure the angle of the reflection</p>
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	By the end of Reception	By the end of Year 1	By the end of Year 2	By the end of Year 3	By the end of Year 4	By the end of Year 5	By the end of Year 6
Plants	Children should know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes.	<p><b><u>To understand plants</u></b></p> <p>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.</p> <p>Identify and describe the basic structure of a variety of common flowering plants (seeds, roots etc), including trees.</p> <p><b>Spring 2</b></p>	<p><b><u>To understand plants</u></b></p> <p>To observe and know how seeds and bulbs grow into mature plants</p> <p>To find out and describe how plants need water, light and suitable temperature to grow and stay healthy</p> <p><b>Spring 2</b></p>	<p><b><u>To understand plants</u></b></p> <p>Identify, know and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</p> <p>Explore and know the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant</p> <p>Investigate and understand the way in which water is transported within plants</p> <p>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p> <p>Autumn 1</p> <p>(Links to the wider curriculum of rainforests)</p>	<p><b>From 'living things in their habitats'</b></p> <ul style="list-style-type: none"> <li>recognise that living things can be grouped in a variety of ways</li> <li>explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</li> </ul> <p>They should identify how the habitat changes <b>throughout the year. Pupils should explore possible ways of grouping a wide selection of living things that include animals, flowering plants and non-flowering plants.</b></p> <p><b>Summer 2</b></p>	<p><b>Links to reproduction modules – see Living things in their habitats – summer 2</b></p> <p>describe the life process of reproduction in some plants and animals</p>	
	<p><b>Describe what they see, hear and feel whilst outside</b></p> <ul style="list-style-type: none"> <li>Encourage focused observation of</li> </ul>	<p>Deciduous Evergreen Stem Trunk Leaf/leaves Flower Blossom/bud Roots Petals</p>	<p>Deciduous, Evergreen, Stem, Trunk, Leaf/leaves, Flower, Blossom/bud, Roots, Petals, Needs of a plant, Seed, Bulb,</p>	<p><b><u>Vocab</u></b></p> <p>Pollination, reproduction, seed dispersal, function, structure, seeds, germination, seed formation, nutrients, fruit, common plants, wild plants, garden plants, nutrition, support</p> <p>Stem roots capillaries nutrients petals transport</p> <p>Dispersal trunk healthy unhealthy bulb seed</p>	<p>Negative impact positive impact human impact producers predators</p> <p>Prey food chain primary producer photosynthesis convert sugars</p> <p>Environmentalist pollutants</p>	<p><b>Sepal ovary carpel stigma anther stamen pollen</b></p> <p><b>Fertilization pollination style asexual sexual</b></p> <p><b>Reproduction rhizomes runners</b></p>	



the natural world. Listen to children describing and commenting on things they have seen whilst outside, including plants and animals. Encourage positive interaction with the outside world, offering children a chance to take supported risks, appropriate to themselves and the environment within which they are in. Name and describe some plants and animals children are likely to see, encouraging children to recognise familiar plants and animals whilst outside.

Nursery

- Plant seeds and care for growing plants.
- Understand the key features of the life cycle of a plant and an animal.

	Growth.				
<p><b>Lesson 1</b>  <b>LO: I can name some parts of a flowering plant.</b>  <b>Observation</b>  <b>Exploration</b></p>	<p><b>Lesson 1</b>  <b>LO: I can describe different parts of a plant</b>  (Observation, exploration)</p>	<p><b>Lesson 1</b>  <b>LO: I can describe different parts of a plant. What they need to survive touched on here as well</b>  <b>(exploration)</b></p>	<p><b>Lesson 1</b>  <b>LO: I know that living things such as animals can be grouped in different ways</b>    <b>(Classification)</b></p>	<p><b>Lesson 1</b>  <b>LO: I can identify the parts of a plant involved in reproduction</b>    <b>(exploration)</b></p>	
<p><b>Lesson 2</b>  <b>LO: I can identify and name some common wild plants.</b>  <b>Observation</b>  <b>Exploration</b>  <b>Research</b></p>	<p><b>Lesson 2</b>  <b>LO: I can identify the needs of a plant</b>  <b>Research</b></p>	<p><b>Lesson 2</b>  <b>LO: I can identify the function roots and stems I can investigate how water is transported through plants.</b>    <b>(observation)</b></p>	<p><b>Lesson 2</b>  <b>LO: I know that living things such as animals can be grouped in different ways</b>    <b>(vertebrates into fish, mammals, vertebrates and invertebrates)</b>  <b>(Classification)</b></p>	<p><b>Lesson 2</b>  <b>LO: I can understand sexual reproduction in plants</b></p>	

- Begin to understand the need to respect and care for the natural environment and all living things.

Reception

- Explore the natural world around them.

ELG

Explore the natural world around them, making observations and drawing pictures of animals and plants. Develop a sense of curiosity and exploration through a range of resources relating to our topics, eg magnets, magnifying glasses, things to smell and taste etc, forces, **life-cycles,**

Plants	<p><b>Lesson 3</b>  <b>LO:</b> I can identify the roots of a plant  I can talk about the function of roots</p>	<p><b>Lesson 3</b>  <b>LO:</b> I can identify the parts of a plant.  I can identify the parts of a plant we eat  (Where our</p>	<p><b>Lesson 3</b>  <b>LO:</b> I can explain the function of leaves comparing different types of leaves  <b>(observation)</b></p>	<p><b>Lesson 3</b>  <b>LO:</b> I recognise some of the characteristics of invertebrates and group them accordingly  <b>(Classification)</b></p>	<p><b>Lesson 3</b>    LO: I can understand asexual reproduction in plants</p>	

	I can name parts of a flowering plant. <b>Comparing, observation, Asking questions.</b>	food comes from) Exploration, research, classification				
	<b>Lesson 4</b> LO: I can identify whether a tree is evergreen or deciduous <b>Research Observation</b>	<b>Lesson 4</b> LO: I can identify the needs of a plant. I can say how to look after a plant. <b>research</b>	<b>Lesson 4</b> LO: LO: I can plan a fair test to investigate the function of leaves <b>(fair test)</b>	<b>Lesson 4</b>  LO: I can understand classification keys and use them to group flowering and non-flowering plants <b>(classification)</b>	<b>Lesson 4</b>  LO: I can understand that not all plants are the same	
	<b>Lesson 5</b> LO: I can identify the common parts of a flowering plant.  <b>Observation 'Exploration</b>	<b>Lesson 5</b> LO: I can identify how a seed or bulb grows into a mature plant. Observation over time.	<b>Lesson 5</b>  LO: I can explain the function of flowers.  <b>Note-touch on pollination here and see formation (research)</b>	<b>Lesson 5</b>  I can understand what is meant by human impact  <b>(explore local area for positive/negative impact)</b>	<b>Lesson 5</b> LO  LO: I can recognise patterns in data linked to the life cycle of humans and other mammals	
	<b>Lesson 6</b> LO: I can explore habitats in my local environment . (exploring)	<b>Lesson 6</b> LO: I can explore habitats in my local environment. (exploring)	<b>Lesson 6</b>  LO: I can explain the different methods of seed dispersal.  Wind water explosion animals <b>(classification)</b>	<b>Lesson 6 -:</b> LO: I can recognise that environment can change and this can be dangerous <b>(presentation)</b>		

Animals, including humans	<p><b>By the end of Reception</b></p> <p><b>Birth to 3</b> Encourage toddlers and young children to enjoy and explore the natural world. Suggestions • seeing the spring daffodils and cherry blossom • looking for worms and minibeasts</p> <p>Make connections between the features of their family and other families.</p> <p>Notice differences between people.</p> <p><b>Nursery</b></p> <p><b>Communication and Language</b></p> <p>• Understand ‘why’ questions, like: “Why do you think the caterpillar got so fat?” UtW</p> <p>• Understand the key features of the life cycle of a plant and an animal.</p> <p>• Begin to understand the need to respect and care for the natural environment and all living things.</p> <p><b>Reception</b> Know and talk about the different factors that support their overall health and wellbeing: - regular physical activity - healthy eating - toothbrushing - sensible amounts of ‘screen time’ - having a good sleep</p>	<p><b>By the end of Year 1</b> identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense (Autumn 1)</p>	<p><b>By the end of Year 2</b> <b>To understand animals, including humans</b> notice that animals, including humans, have offspring which grow into adults Summer 2</p>	<p><b>By the end of Year 3</b> <b>To understand animals and humans</b> 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 Summer 2</p>	<p><b>By the end of Year 4</b> <b>Animals, including humans</b> 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 Spring 1  construct and interpret a variety of food chains, identifying producers, predators and prey</p>	<p><b>By the end of Year 5</b> <b>Animals, including humans</b> describe the changes as humans develop to old age</p>	<p><b>By the end of Year 6</b> <b>To understand animals and humans</b> identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood Autumn 2</p>
	<p><b>Vocab</b> <b>Sense, eyes, nose, mouth, tongue, taste buds, skin, feel, feeling, hear, ear, loud, quiet, smell, nostril, eye, iris, sclera, pupils, sight, depth perception.</b></p>	<p><b>Vocab</b> Habitat, alive, living, once living, once lived, never living, dead, adapt, adapted, needs, food chain, microhabitat, research, rainforest, ocean, desert, woodland, forest, minibeast</p>	<p><b>Vocab</b> Plants, animals, humans, food, nutrition, food groups, Eatwell Guide, nutrients, vitamins, minerals, protein, carbohydrates, fibre, water, fats, repair, digest, saturated fats, unsaturated fats, cholesterol, iron, calcium, carnivores, omnivores, herbivores.</p>	<p><b>Vocab</b> Canine incisors premolars molars enamel cementum pulp gum  Oesophagus. Stomach. Small Intestine. Large Intestine. Rectum  food chain carnivore omnivore herbivore</p>	<p><b>Vocab</b> <b>Life cycle, baby, child, teenager, adolescent, adult, mature, matured, develop, growth, puberty</b></p>	<p><b>Vocab</b> Capillary, Vein, Aorta, blood, Blood vessels, white blood cells, platelets</p>	

<p>routine being a safe pedestrian</p> <p>Explore their own bodies and their senses Learn to name the parts of the body and what we use them for. Learn about animals and their homes, including pets, farm animals and wild animals. Observe changes such as chicks hatching and caterpillars turning into butterflies</p> <p>Learn about being healthy, including eating a range of foods and taking part in exercise.</p>	<p>Pupils should be taught to:</p> <p>identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals</p> <p>identify and name a variety of common animals that are carnivores, herbivores and omnivores</p> <p>describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)</p> <p>Spring 1</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, eating the right amounts of different types of food, and hygiene</p> <p>Summer 1</p>	<p>identify that humans and some other animals have skeletons and muscles for support, protection and movement</p> <p>Spring 2</p>	<p>Vocab Needs, wants, air, water, food, exercise, sleep, teeth, hygiene, balanced diet, heart rate, muscles.</p>	<p>Vocab Endoskeleton, Exoskeleton, Hydrostatic skeleton, bones, skull, spine, vertebrate, muscles</p>		<p>recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</p> <p>describe the ways in which nutrients and water are transported within animals, including humans.</p> <p>Spring 1</p>
	<p><b>Vocab</b> <b>Animals from each group</b> - cat, goldfish, lizard, python, magpie, etc <b>Human</b> – ears, eyes, fingers, tongue, nose. <b>Habitat</b> – nest, flowerbeds, grass, trees, playground, hedges</p> <p><b>Scales, scaly skin, amphibian, reptile, mammals, birds, fish, gills, carnivore, herbivore, omnivore.</b></p>						

	<p><b>Autumn 1- Senses.</b> <b>Lesson 1</b> <b>LO: To identify, name and compare parts of our bodies</b></p>	<p><b>Lesson 1</b> <b>LO: I can explore the basic needs of an animal (including a human) – Water, Food Air</b> <b>I can discuss what humans need to stay healthy</b> <b>I can discuss and understand the ‘eat well plate’ and the major food groups.</b></p>	<p><b>Lesson 1</b> <b>LO: I can explain what humans need to survive</b> <b>(Classification)</b></p>	<p><b>Lesson 1</b> <b>LO: I can identify the different types of teeth in humans</b> <b>(Classification)</b></p>	<p><b>Lesson 1</b> <b>LO: I can identify the parts of a plant involved in reproduction</b> <b>(exploration)</b></p>	<p><b>Lesson 1</b> <b>LO :I can identify the main function of the heart</b></p>
	<p><b>Lesson 2</b> <b>LO:To describe, compare and group different foods by using the sense of taste</b> <b>I can identify the body parts linked to the sense of taste</b></p>	<p><b>Lesson 2</b> <b>L.o. I can discuss and understand what is hygiene</b> <b>I can explain some of the ways people can stay hygenic</b></p>	<p><b>Lesson 2</b> <b>LO: I can understand the animals are unable to produce their own food (I can explain where food comes from.)</b> <b>I can classify food. (classification)</b></p>	<p><b>Lesson 2</b> <b>LO: I can name and identify the basic parts of the digestive system</b> <b>Research, exploration, classification</b></p>	<p><b>Lesson 2</b> <b>LO: I can understand sexual reproduction in plants</b></p>	<p><b>Lesson 2</b> <b>LO: I can describe some of the key chambers within the heart</b></p>
	<p><b>Lesson 3</b> <b>LO:To identify, compare and group the sounds</b> <b>I can identify the body parts linked to the sense of sound</b></p>	<p><b>Lesson 3</b> <b>I can identify the effects of exercise on the human body</b> <b>I can say why exercise is important (To keep humans healthy.</b></p>	<p><b>Lesson 3</b> <b>LO: I can review ‘what is a balanced diet’</b> <b>I can investigate the foods different groups of animals eat.</b> <b>(Research)</b></p>	<p><b>Lesson 3</b> <b>I can describe the simple functions of the main parts of the digestive system.</b></p>	<p><b>Lesson 3</b> <b>LO: I can understand asexual reproduction in plants</b></p>	<p><b>Lesson 3</b> <b>LO: I understand the main component of blood and their roles (red blood cells/white blood cells/platelets)</b></p>
	<p><b>Lesson 4</b> <b>LO:To describe how our sense of touch helps us to learn about the world around us.</b> <b>I can identify the body parts linked to the sense of touch.</b></p>	<p><b>Lesson 4</b> <b>I can say why animals, including humans, need sleep</b> <b>I can identify how much sleep I should be getting every night.</b></p>	<p><b>Lesson 4</b> <b>LO: I can name the different types of skeleton</b> <b>I can identify the pros and cons of the skeletons</b> <b>I can identify the function of a skeletal system.</b></p>	<p><b>Lesson 4</b> <b>LO: I can plan an investigation to understand the affects of different substances on human teeth</b>  <b>Pattern seeking</b></p>	<p><b>Lesson 4</b> <b>LO: I can understand that not all plants are the same</b></p>	<p><b>Lesson 4</b> <b>I can understand how nutrients and water are transported within the heart,</b></p>
	<p><b>Lesson 5</b> <b>LO:To describe and compare a variety of different smells, identifying which are the most and least liked by the class</b> <b>I can identify the body parts linked to the sense of smell</b></p>	<p><b>Lesson 5</b> <b>Teeth</b> <b>I can identify why humans need to look after their teeth</b> <b>I can identify how to look after our teeth.</b></p>	<p><b>Lesson 5</b> <b>L.O. •I know why we need muscles to move.</b> <b>•I can set up a simple practical enquiry.</b> <b>•I can record my findings.</b></p>	<p><b>Lesson 5</b> <b>LO: I can construct and interpret a variety of food chains, identifying producers, predators and prey.</b></p>	<p><b>Lesson 5</b> <b>LO</b> <b>LO: I can recognise patterns in data linked to the life cycle of humans and other mammals</b></p>	<p><b>Lesson 5</b> <b>I can explore how exercise affects the heart</b> <b>Plan enquiries, including recognising and controlling variables where necessary</b> <b>Knows how to take measurements, using a range of scientific</b></p>

							<i>equipment, with increasing accuracy and precision. (pulse monitors, stopwatches)</i>
Animals, including humans		<b>Lesson 6</b> <b>LO: Understand that we can collect and group information about ourselves</b> <b>I can identify the body parts linked to the sense of sight.</b>		<b>Lesson 6</b> <b>LO: I can explain how to keep our bodies healthy.</b> <b>(water, exercise, balanced diet)</b>			<b>Lesson 6</b> I can understand factors that can harm the heart
		<b><u>Spring 1 – Animal groups.</u></b>	<b><u>Summer 2 – Life cycles.</u></b>	<b><u>Summer 2</u></b>	-	-	<b><u>Spring 1 – Body health</u></b>
		<b>Lesson 1</b> <b>LO: I can compare animals (fish, amphibians, mammals, reptiles and birds) (observations)</b>	<b>Lesson 1</b> <b>LO: I can investigate and name the basic needs of animals. (Air, water and Food) (Recap lesson)</b>	<b>Lesson 1</b> <b>LO: I can explain what all animals, including humans, need to survive (Air, Water, Food) (Classification)</b>			<b>Lesson 1</b> <b>LO I can identify the main food groups and their function (Research)</b>
		<b>Lesson 2</b> <b>LO: I can identify and name animals (classify fish, amphibians, mammals, reptiles and birds) classification</b>	<b>Lesson 2</b> <b>LO: I can explore how humans have babies that grow into adults. I can recognise characteristics of babies.</b> • I can recognise characteristics of children. • I can identify changes that happen when babies grow into children.	<b>Lesson 2</b> <b>LO: I can classify foods into their food groups. (Research lesson using BBC bitesize on Chromebooks)</b>			<b>Lesson 2</b> <b>LO: I can research the impact that diet and exercise has on our health (Research- rickets/scurvy/other diseases linked to malnutrition)</b>
		<b>Lesson 3</b> <b>LO: I can describe the structure of a variety of animals (fish, amphibians, mammals, reptiles and birds) (observations)</b>	<b>Lesson 3</b> <b>LO: I can recognize the life cycles of some common animals.</b>	<b>Lesson 3</b> <b>LO: I can explain I balanced diet. (observation)</b>			<b>Lesson 3</b> <b>LO: I can understand how drugs and our lifestyle impact on the way our body functions (Research)</b>

		<b>Lesson 4</b> <b>LO:</b> I can identify animals that are carnivores, herbivores, and omnivore. (classification) <b>Record findings by drawing,</b>	<b>Lesson 4</b> I can identify how animals, including humans, have a life cycle and compare the similarity and differences of those life cycles.	<b>Lesson 4</b> <b>LO: I can identify the diets of different animals.</b> <b>(Inc making a basic food chain)</b>			<b>Lesson 4</b> LO: I can plan and debate the importance of choice and healthy living <b>(presentation)</b>
		<b>Lesson 5</b> <b>LO:</b> I can draw and label parts of the human body (link to senses Autumn 1)	<b>Lesson 5</b> <b>I can identify that humans need to eat the right amount of different types of food.</b> <b>I can explain the importance of Hygiene and how I can stay hygienic</b> (Recap from Summer 1)	<b>Lesson 5</b> <b>LO: I can explain how to keep our bodies healthy.</b> <b>(water, exercise, balanced diet)</b>			<b>Lesson 5</b> LO: I can plan and create a healthy shake /salad (exploration/Observation)
		<b>Lesson 6</b> <b>LO: I can explore habitats in my local environment.</b> <b>(exploring)</b>	<b>Lesson 6</b> <b>I can explain the effects of exercise on the human body</b> <b>I can explain why exercise is important.</b>	<b>Lesson 6</b> <b>LO: I can design a suitable meal for a Human, based on my knowledge of diet.</b>			



	By the end of Reception	By the end of Year 1	By the end of Year 2	By the end of Year 3	By the end of Year 4	By the end of Year 5	By the end of Year 6
	<p><b>Recognise some environments that are different from the one in which they live.</b> Teach children about a range of contrasting environments within both their local and national region. Model the vocabulary needed to name specific features of the world, both natural and made by people. Share non-fiction texts that offer an insight into contrasting environments. Listen to how children communicate their understanding of their own environment and contrasting environments through conversation and in play</p> <p><b><u>Nursery</u></b></p> <p><b>Communication and Language</b></p> <ul style="list-style-type: none"> <li>Understand ‘why’ questions, like: “Why do you think the caterpillar got so fat?” UtW</li> <li>Understand the key features of the</li> </ul>		<p><b><u>To investigate living things</u></b></p> <p>explore and compare the differences between things that are living, dead, and things that have never been alive identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other identify and name a variety of plants and animals in their habitats, including microhabitats</p> <p>Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain</p> <p>Autumn 1</p>		<p><b><u>To investigate living things</u></b> Identify and name a variety of living things (plants and animals) in the local and wider</p> <p>Give reasons for classifying plants and animals based on specific characteristics.</p> <p>Recognise that environments are constantly changing and that this can sometimes pose dangers to specific habitats. Summer 2</p>	<p><b><u>All living things and their habitats</u></b> describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</p> <p>Summer 1</p> <p>describe the life process of reproduction in some plants and animals <b><u>Summer 2</u></b></p>	<p><b><u>Living things and their habitats</u></b> 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</p> <p>Give reasons for classifying plants and animals based on specific characteristics.</p> <p><b><u>Evolution and inheritance</u></b></p> <p>recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</p> <p>recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</p> <p>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. Spring 2</p>
			<ul style="list-style-type: none"> <li>Understand the key features of the</li> </ul>	<p>Vocab Living, Once lived, never lived, dead, habitat, adapt, adapted, food, shelter, needs, micro habitat</p>	<p>Vocab Negative impact positive impact human impact producers predators</p> <p>Prey food chain primary producer photosynthesis convert sugars</p> <p>Environmentalist pollutants Adapted, flow diagram</p>	<p>Vocab Thorax abdomen mud puppy pupae chrysalis juvenile adult</p> <p>Mature gestation fertilisation deposit sperm</p>	<p><b><u>Vocab</u></b></p> <p>2. Fossilisation sap resin evolution Theory of evolution Darwin biologist Galapagos Island</p> <p>Homo sapiens hereditary characteristics</p> <p>Environmental characteristics traits DNA chromosomes</p>

<p>life cycle of a plant and an animal.</p> <ul style="list-style-type: none"> <li>• Begin to understand the need to respect and care for the natural environment and all living things.</li> </ul> <p><b>Reception</b> Know and talk about the different factors that support their overall health and wellbeing: - regular physical activity - healthy eating - toothbrushing - sensible amounts of 'screen time' - having a good sleep routine being a safe pedestrian</p> <p>Learn about animals and their homes, including pets, farm animals and wild animals. Observe changes such as chicks hatching and caterpillars turning into butterflies</p> <p>Learn about being healthy, including eating a range of foods and taking part in exercise.</p>						Off springs features adaptation vary
		Year 2, Aut 1		<b>Year 4, Summer 2 (Links to Plants)</b>	<b>Year 5 summer 1 (life cycles)</b>	<b>Year 6 – Aut 1 – Nature's Library</b>
		<p><b>Lesson 1</b> <u>L.O: To recognise and compare the main components of some different habitats.</u> <u>L.O. I can classify parts of a habitat as Living, once lived and never lived.</u></p>		<p><b>Lesson 1</b> <b>LO:</b> I know that living things such as animals can be grouped in different ways  <b>(Classification)</b></p>	<p><b>Lesson 1 HOOK: Have a video of a chick coming out of its shell or similar</b>  • LO: I can sequence the life cycle of a mammal</p>	<p><b>Lesson 1 HOOK: Clip showing the spread of microorganism on a surface</b> I can understand grouping and classifying (research)</p>
		<p><b>Lesson 2</b> <u>.L.O: To construct examples of food chains for a habitat.</u> <u>L.O. To understand the 3 basic needs of living things</u> S.c. -I can sequence the animals in a food chain based on what they eat. -I can add arrows correctly to the food chain. -I can relate the food chains to a suitable habitat. -I can use food chains to talk about how the animals depend on each other.</p>		<p><b>Lesson 2</b> <b>LO:</b> I know that living things such as animals can be grouped in different ways  <b>(vertebrates into fish, mammals, vertebrates and invertebrates)</b> <b>(Classification)</b></p>	<p><b>Lesson 2</b>  LO: I can explain the life cycle of an amphibian comparing it other animals</p>	<p><b>Lesson 2</b> I can research Carl Linnaeus and how he created his classification system  Research</p>
		<p><b>Lesson 3 – British habitats.</b> <b>L.O. I can identify local habitats</b> L.O. I can name some organisms in local habitats.</p>		<p><b>Lesson 3</b> <b>LO:</b> I recognise some of the characteristics of invertebrates and group them accordingly <b>(Classification)</b></p>	<p><b>Lesson 3</b> LO: I can research the life cycle of an insect</p>	<p><b>Lesson 3</b> I can use observable characteristics to classify vertebrates and invertebrates giving reasons <b>(Classification)</b></p>
	<p><b>Lesson 4 – World habitats.</b> <b>L.O. I can research a habitat</b></p>		<p><b>Lesson 4</b>  <b>LO:</b> I can understand classification keys and use them</p>	<p><b>Lesson 4</b> LO: I can understand the life cycle of a bird</p>	<p><b>Lesson 4</b>  L.O: I can put different plants into groups according to their similarities and differences</p>	

			I can name some organisms found in those habitats.		to group flowering and non-flowering plants (classification)		(Observation) (classification)
			<b>Lesson 5</b> L.O: To identify how <u>living things are suited to their habitat.</u>		<b>Lesson 5</b> I can understand what is meant by <b>human impact (explore local area for positive/negative impact)</b>	<b>Lesson 5</b> LO: I can explore and compare the life cycles of different animals	<b>Lesson 5</b> L.O: I can recognise that micro-organisms are living things and investigate them. (Fair test)
			<b>Lesson 6</b> LO: I can explore 'microhabitats.'		<b>Lesson 6 -: LO: I can recognise that environment can change and this can be dangerous (presentation)</b>		<b>Lesson 6</b> LO: I can investigate how the environment influences the growth of micro – organisms (presentation)
							<b>Lesson 7</b> <b>Result</b> <b>Write up the results-what did they show? What does this mean?</b> <b>Assessment</b>
						<b>Summer 2</b>	<b>Spring 2 - evolution</b>
						<b>Lesson 1</b> LO: I can identify the parts of a plant involved in reproduction  (exploration)	<b>Lesson 1</b> <b>LO</b> LO: I can understand that fossils provide information about living things that inhabited the earth a million years ago
						<b>Lesson 2</b> <b>LO:</b> I can understand sexual reproduction in plants	<b>Lesson 2</b> LO: I can recognise that living things have changed over time
						<b>Lesson 3</b>  LO: I can understand asexual reproduction in plants	<b>Lesson 3</b> LO: I can understand that living things produce off springs of the same kind but normally they vary and not identical to their parents
						<b>Lesson 4</b> LO: I can understand that	<b>Lesson 4</b> LO:I can understand animals and plants are adapted to suit their environment

						not all plants are the same	
						<b>Lesson 5</b> LO  LO: I can recognise patterns in data linked to the life cycle of humans and other mammals	<b>Lesson 5</b> LO: I can understand that adaptation may lead to evolution Assessment Day

Everyday Materials							
	By the end of Reception	By the end of Year 1	By the end of Year 2	By the end of Year 3	By the end of Year 4	By the end of Year 5	By the end of Year 6

	<p>Development matters 3-4</p> <p>Use all their senses in hands-on exploration of natural materials. Explore collections of materials with similar and/or different properties. Talk about what they see, using a wide vocabulary</p> <p><b>Explore how things work.</b> Provide mechanical equipment for children to play with and investigate. Suggestions: wind-up toys, pulleys, sets of cogs with pegs and boards</p> <p><b>Talk about the differences between materials and changes they notice.</b> Provide children with opportunities to change materials from one state to another. Suggestions: • cooking – combining different ingredients, and then cooling or heating (cooking) them • melting – leave ice cubes out in the sun, see what happens when you shake salt onto them (children should not touch to avoid danger of frostbite) Explore how different materials sink and float. Explore how you can shine light through some materials, but not others. Investigate shadows. Plan and introduce new vocabulary related to the exploration and encourage children to use it.</p>	<p><b><u>To investigate everyday materials</u></b></p> <p>To know how to distinguish between an object and the material from which it is made identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</p> <p>To be able to describe the simple physical properties of a variety of everyday materials</p> <p>Compare and group together a variety of everyday materials based on their simple physical properties.</p> <p>Autumn 2</p>	<p><b><u>To investigate everyday materials</u></b></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>Autumn 2</p>	<p><b><u>Rocks</u></b></p> <p>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</p> <p>Describe in simple terms how fossils are formed when things that have lived are trapped within rock</p> <p>Recognise that soil are made from rocks and organic matter</p>	<p><b><u>To investigate materials</u></b> (States of Matter)</p> <p>Compare and group materials together, according to whether they are solids, liquids or gases.</p> <p>Observe that some materials change state when they are heated or cooled, and measure the temperature at which this happens in degrees Celsius (°C), building on their teaching in mathematics.</p> <p>Autumn 1</p>	<p><b><u>Properties and changes of materials</u></b></p> <p>Autumn 2</p> <p>Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to <b><u>magnets</u></b></p> <p><b>FIRST PART DONE IN AUTUMN 2</b></p> <p>Know that some materials will dissolve in liquid to Form a solution, and describe how to recover a substance from a solution</p> <p>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</p> <p>Demonstrate that dissolving, mixing and changes of state are reversible changes</p> <p>Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda</p>	
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<p><b>Nursery</b></p> <p><b>Communication and Language</b></p> <ul style="list-style-type: none"> <li>• Understand ‘why’ questions, like: “Why do you think the caterpillar got so fat?”</li> <li>• Explore and talk about different forces they can feel.</li> <li>• Talk about the differences between materials and changes they notice</li> </ul>	<p><b>Vocab</b>  <u>Classify, sort, rock, plastic, metal, wood, fabric, wood, testing</u></p>	<p><b>Classify, sort, rock, plastic, metal, wood, fabric, wood, testing, brick, rubber, elastic, rigid, flexible, transparent, translucent, opaque, squash, bend, squeeze, twist</b></p>	<p>Rock, sandstone, granite, chalk, limestone, marble, pumice, crystal, granule, rough, smooth, hard, soft, brick, stone, concrete, pavement, Permeable, impermeable, igneous, clay, grains, magma, lava, Chrystal gravestone fossils, sedimentary rock, igneous, fossil, metamorphic, palaeontologist, sediment, loamy soil, peaty soil, sandy soil,</p>	<p>Solid, liquid, state, matter, particle, grain, category, classify, group, evidence, question, discuss, Solidifying, freezing, melting, condensing, evaporating, particles, thermometer, temperature, Celsius, Fahrenheit, degrees, Evaporation, condensation, precipitation, particle, state, liquid, gas, solid, ice, rain, clouds, vapour</p>	<p>Reversible change  irreversible change  substances bicarbonate of soda  Combustion burning  dissolving filtering  filtration sieving  Solution solute solvent  thermal conductor  electrical conductor</p>	
<p><b>Reception</b></p> <p><b>Communication and Language</b></p> <ul style="list-style-type: none"> <li>• Learn new vocabulary.</li> <li>• Ask questions to find out more and to check what has been said to them.</li> <li>• Articulate their ideas and thoughts in well-formed sentences.</li> <li>• Describe events in some detail.</li> <li>• Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen.</li> <li>• Use new vocabulary in different contexts.</li> </ul> <p>Develop a sense of curiosity and exploration through a range of resources relating to our topics, eg magnets, magnifying glasses, things to smell and taste etc, forces, life-cycles, states of change – cooking or investigations (ice melting) and through the continuous provision areas such as sand, water, small world, construction etc.</p>		<p>Identify and compare and know the uses of a variety of everyday materials, including wood, metal, plastic, glass, brick/rock, and Paper/cardboard</p> <p>Spring 1</p>		<p>Summer 1  Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.  Summer 1  (links explicitly to the wider curriculum)</p> <p>Vocab  water, evaporation, condensation, precipitation cloud, rain, cycle, lake, water, sun, vapour, steam, condense, run off, precipitation, surface, sea, lake, river</p>	<p>Summer 1  Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency,</p> <p>Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating  Demonstrate that dissolving, mixing and changes of state are reversible changes</p> <p>Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda</p> <p>Vocab  Reversible change  irreversible change  substances bicarbonate of soda</p>	

	Developing language and key vocabulary is of high importance					Combustion burning dissolving filtering filtration sieving Solution solute solvent thermal conductor electrical conductor	
		<b>Year 1 – Everyday materials Aut 2</b>	<b>Year 2 Aut 2 (Shaping Up)</b>	<b>Year 3 – Rocks Aut 2</b>	<b>Year 4 states of matter Aut 1</b>	<b>Year 5 Aut 2 States of matter</b>	
		<b>Lesson 1</b> LO: I can identify and name everyday materials (classifying and exploring)	<b>Lesson 1</b> LO: I can describe the similarities and differences of different materials. (classifying) LO: I can identify the material an object is made from and think of other objects that are made from the same material.	<b>Lesson 1</b> LO: I can identify and group rocks according to their properties. <b>(Classification)</b>	<b>Lesson 1</b> LO: I can compare and group materials according to their properties. <b>(Solids and liquids)</b> <b>(Classification)</b>	<b>Lesson 1</b> LO: I can classify materials on the bases of a number of properties (hardness, conductivity, : thermal/electrical)	
<b>Everyday Materials</b>		<b>Lesson 2</b> LO: To identify and name four everyday materials (classifying and exploring)	<b>Lesson 2</b> LO: I can test different properties a material may have. (Exploration)	<b>Lesson 2</b> LO: I can identify rocks for firmness, impermeability and record my results in a table. <b>(observation, fair test and pattern seeking)</b>	<b>Lesson 2</b> LO: I can plan a fair test investigation to test ideas about melting ice. I can collect, present and interpret data about melting ice. <b>(observation, fair test and pattern seeking)</b>	<b>Lesson 2</b> LO: I can explore how mixtures can be separated through sieving and filtering	
		<b>Lesson 3</b> LO: I can recognise that most objects are made from more than one material (classifying)	<b>Lesson 3</b> LO: To make links between materials and how they are used (Research and exploration)	<b>Lesson 3</b> LO: I can identify soils for impermeability and record my results in a table. <b>(fair test or pattern seeking)</b> <b>(classification)</b>	<b>Lesson 3</b> LO: I can define melting and freezing. <b>(observation, fair test and pattern seeking)</b>	<b>Lesson 3</b> LO: I know some materials will dissolve in a liquid to form a solution and that this is reversible reaction	
		<b>Lesson 4</b> LO: I can describe how the same type of object can be made from different materials (exploring)	<b>Lesson 4</b> LO: To test the stretchiness of a material (elastic) (Pattern seeking)	<b>Lesson 4</b> LO: I can identify different types of rocks around school I can explain why their properties make them useful for this purpose.	<b>Lesson 4</b> LO: I can investigate the melting point for different chocolates. <b>(fair test or pattern seeking)</b>	<b>Lesson 4</b> LO: I can set up an observation over time enquiry to investigate conditions required for corrosion.	
		<b>Lesson 5</b> LO: I can test materials to see which is the strongest (pattern seeking)	<b>Lesson 5</b> LO: I can design and build a catapult, based on my knowledge of materials,	<b>Lesson 5</b> LO: I can understand the different rock types	<b>Lesson 5</b> LO: I can classify materials as solids liquids and gases.	<b>Lesson 5</b> LO: I can demonstrate that dissolving, mixing and changes of state are reversible changes	

		<b>Lesson 6</b> <b>LO: Science Day – Making a boat</b> <b>(DT cross curricular links)</b>	<b>Lesson 6</b> <b>LO: I can test my catapult and record data in a suitable way.</b>	<b>Lesson 6</b> <b>LO: I can explore how fossils are formed and sequence the stages of this process.</b>		<b>Lesson 6</b> <b>LO: I can explain that certain changes such as burning are irreversible changes and these result in the formation of new materials</b>
			<b>Spring 1 – Making good choices</b>		<b>States of matter -water cycle - Summer 1</b>	
			<b>Lesson 1</b> <b>LO: I can describe the similarities and differences of different materials. (classifying)</b> <b>LO: I can identify the material an object is made from and think of other objects that are made from the same material.</b>		<b>Lesson 1</b> <b>LO: I can understand evaporation and investigate the rate of evaporation in different location and consider the impact of temperature</b>  <b>(Inside/outside/change of temperature)</b> <b>(observation, fair test and pattern seeking)-to many unless your giving choice</b>	
			<b>Lesson 2</b> <b>LO: I can test different fabrics to decide which is the best to use for dungarees (pattern seeking)</b>		<b>Lesson 2</b>  <b>LO: I can investigate condensation.</b>  <b>(observation, fair test)</b>	
			<b>Lesson 3</b> <b>LO: I can test which material is suitable as a tea bag (comparing and fair test)</b> <b>Teacher use other investigation if you like</b>		<b>Lesson 3</b> <b>LO: I can explain the water cycle (linking it to evaporation and condensation)</b>  <b>(observation, fair test and pattern seeking)</b>	
			<b>Lesson 4</b> <b>LO: I can test why certain materials are used for different purposes (plastic, metal, paper, rubber?) Link to Aladdin – magic lamp/spoons/ (metal) (observation)</b>		<b>Lesson 4</b> <b>L.O. I can investigate and explain how the rate of evaporation can be linked to temperature.</b>	
			<b>Lesson 5</b> <b>LO: I can test materials to see which is the strongest/</b>			



			rigid for the purpose of holding weight (exploration)				
			Lesson 6 LO: I can apply my knowledge of Materials to design and build a Snow plough. (DT cross curricular links)				
Seasonal change and space	By the end of Reception	By the end of Year 1	By the end of Year 2	By the end of Year 3	By the end of Year 4	By the end of Year 5	By the end of Year 6
	<p><b>Describe what they see, hear and feel whilst outside.</b> Encourage focused observation of the natural world. Listen to children describing and commenting on things they have seen whilst outside, including plants and animals. Encourage positive interaction with the outside world, offering children a chance to take supported risks, appropriate to themselves and the environment within which they are in. Name and describe some plants and animals children are likely to see, encouraging children to recognise familiar plants and animals whilst outside.</p> <p><b>Understand the effect of changing seasons on the natural world around them.</b> Guide</p>	<p><u>seasonal changes</u></p> <p>Observe and talk about changes across the four seasons Observe and describe weather associated with the seasons and how day length varies, including understanding that it is unsafe to look directly at the Sun.</p> <p>observe changes across the four seasons</p> <p>observe and describe weather associated with the seasons and how day length varies</p>		<p>From 'Light'</p> <p>Recognise that they need light in order to see things and that dark is 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 the eyes. Recognise that shadows are formed when light from a light source is blocked by a solid object Find patterns in the way that the size of shadows change</p>		<p><u>Earth and space</u></p> <p>Describe the movement of the Earth, and other planets, relative to the Sun in the solar system</p> <p>Describe the movement of the Moon relative to the Earth</p> <p>Describe the Sun, Earth and Moon as approximately spherical bodies</p> <p>Use the idea of the Earth's rotation to explain day and night, and the apparent movement of the sun across the sky.</p>	
		<p>Sun moon day night Earth winter summer autumn spring</p>		<p>shadow opaque light source</p>		<p>Misconception: Children mix up rotation (turn on point) and orbit (around another body) Axis tilt hemispheres (northern southern) 2 4 hours Gravity solar system Galaxy planets dwarf planet sunset sunrise</p>	
		<p><b>Year 1 summer 1</b></p>		<p><b>Year 3 Light Spring 1</b></p>			
		<p><b>Lesson 1</b> LO: I can name the 4 seasons. I can identify signs of Spring (Winter into spring)</p>		<p><b>Lesson 1</b> LO: I can recognise that we need light in order to see</p>		<p><b>Lesson 1</b> LO: I know that the earth, sun and moon are approximately spherical  (Research/Observation)</p>	
<p><b>Lesson 2</b></p>		<p><b>Lesson 2</b></p>		<p><b>Lesson 2</b></p>			

<p>children’s understanding by draw children’s attention to the weather and seasonal features. Provide opportunities for children to note and record the weather. Select texts to share with the children about the changing seasons. Throughout the year, take children outside to observe the natural world and encourage children to observe how animals behave differently as the seasons change.</p> <p>Look for children incorporating their understanding of the seasons and weather in their play.</p> <p><b>Nursery</b></p> <p><b>Communication and Language</b></p> <ul style="list-style-type: none"> <li>• Understand ‘why’ questions, like: “Why do you think the caterpillar got so fat?”</li> <li>• Talk about what they see, using a wide vocabulary.</li> <li>• Begin to make sense of their own life-story and family’s history.</li> <li>• Understand the key features of the life cycle of a plant and an animal.</li> </ul>	<p><b>LO:</b> I can identify the changes that occur from Spring into Summer</p>		<p><b>LO:</b> I can recognise that the absence of light is darkness</p>		<p><b>LO:</b> I can describe the movement of the Earth, and other planets compared to the Sun <b>(Research)</b></p>	
	<p><b>Lesson 3</b> <b>LO:</b> I can identify the changes that occur from Summer into Autumn.</p>		<p><b>Lesson 3</b> <b>LO:</b> Observe that light is reflected from surfaces <b>LO: I can identify materials with different tyoes of surfaces (shiny, dull, smooth)</b> (observation/ classification)</p>		<p><b>Lesson 3</b> I can describe the movement of the Moon relative to the Earth (Research)</p>	
	<p><b>Lesson 4</b> <b>LO:</b> I can identify the changes that occur from Autumn into Winter</p>		<p><b>Lesson 4</b> Recognise that light from the sun can be dangerous and that there are ways to protect our eyes. <b>(Research)</b></p>		<p><b>Lesson 4</b> <b>LO:</b> I can use the idea of the Earth’s rotation to explain day and night and the apparent movement of the sun across the sky. <b>(Exploration-explore shadows changing shape)</b></p>	
	<p><b>Lesson 5 – LO:</b> I can identify features of the 4 seasons.</p>		<p><b>Lesson 5</b> <b>LO:</b> I can recognise that shadows are formed when light from a light source is blocked by an opaque object (exploration)</p>		<p><b>Lesson 5</b> <b>LO</b> I can use the idea of the Earth’s rotation to explain time difference between countries <b>(Research/exploration)</b></p> <p><b>Assessment Opportunity</b></p>	
	<p><b>Lesson 6 – LO:</b> I can make a weather forecast for a season of my choice.</p>		<p><b>Lesson 6</b> <b>LO:</b> I can find patterns in the way that the size of a shadow changes (pattern seeking)</p>			

**Communication and Language**

- Learn new vocabulary.
- Ask questions to find out more and to check what has been said to them.
- Articulate their ideas and thoughts in well-formed sentences.
- Describe events in some detail.
- Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen.
- Use new vocabulary in different contexts.

Explore the natural world around them.

- Describe what they see, hear and feel while they are outside.
- Recognise some environments that are different to the one in which they live.

Understand the effect of changing seasons on the natural world around them

Explore the natural world around them, making observations and drawing pictures of animals and plants.

Know some similarities and

<p>differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class.</p> <p>Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter</p> <p>Learn about animals and their homes, including pets, farm animals and wild animals.</p> <p>Observe changes such as chicks hatching and caterpillars turning into butterflies, the seasons changing, plants and flowers growing. They are supported to notice and talk about what is happening and why.</p> <p>Learn about being healthy, including eating a range of foods and taking part in exercise.</p> <p>Develop a sense of curiosity and exploration through a range of resources relating to our topics</p>								
Senses	<b>By the end of Reception</b>	<b>By the end of Year 1</b>	<b>By the end of Year 2</b>	<b>By the end of Year 3</b>		<b>By the end of Year 4</b>	<b>By the end of Year 5</b>	<b>By the end of Year 6</b>
	<b>Communication and Language</b>	Senses Extracted from Animals, including humans)		<u>To investigate light</u>		<u>To investigate sound and hearing</u>		<u>Light</u>

<ul style="list-style-type: none"> <li>• Understand 'why' questions, like: "Why do you think the caterpillar got so fat?"</li> <li>• Talk about what they see, using a wide vocabulary.</li> <li>• Begin to make sense of their own life-story and family's history.</li> <li>• Use all their senses in hands-on exploration of natural materials.</li> <li>• Talk about what they see, using a wide vocabulary.</li> <li>• Explore and talk about different forces they can feel.</li> </ul>	<p>§ identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. (Autumn 1)</p>		<p>Recognise that they need light in order to see things and that dark is 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 the eyes. Recognise that shadows are formed when light from a light source is blocked by a solid object  Find patterns in the way that the size of shadows change</p>	<p>Identify how sounds are made, associating some of them with something vibrating.</p> <p>Recognise that vibrations from sounds travel through a medium to the ear.</p> <p>Find patterns between pitch of a sound and features of the object that produced it.</p> <p>Find patterns between the volume of a sound and the strength of the vibrations that produced it.</p> <p>Recognise that sounds get fainter as the distance from the sound's source increases. Autumn 2</p>		<p>recognise that light appears to travel in straight lines use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye</p> <p>explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes</p> <p>use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them Summer 2</p>
<ul style="list-style-type: none"> <li>• Explore the natural world around them.</li> <li>• Describe what they see, hear and feel while they are outside.</li> </ul> <p>Explore their own bodies and their senses</p>	<p>Body, arms, legs, head, feet, hands, ankles, wrists, eye, ears, mouth, tongue, smell, touch, taste, hearing, sight, skin, sweet, sour, salty, bitter</p>		<p>Light source shadow sharp dull blurred reflect 4 5 degrees angle</p>	<p>Pitch frequency vibrations source amplitude amplification</p> <p>Sound source strike medium rhythm volume ear muffs absorb</p> <p>Sound insulation muffle</p> <p>Doppler effect (fire siren moving</p>		<p>straight lines refraction mediums light source coloured filters spectrum prism rainbow</p>

<p>Learn to name the parts of the body and what we use them for.</p> <p>Develop a sense of curiosity and exploration through a range of resources relating to our topics</p>				near you then away from you)		
	Autumn 1- Senses. <i>Lesson 1</i> <i>LO: To identify, name and compare parts of our bodies</i>		<b>Lesson 1</b> <b>LO:</b> I can recognise that we need light in order to see	<b>Lesson 1</b> <b>LO:</b> I know that most sounds are made when something vibrates <b>(exploration)</b>		<b>Lesson 1</b> I can recognise that light appears to travel in straight lines (exploration) Consolidate Y3 work then build on this
	Lesson 2 <i>LO:To describe, compare and group different foods by using the sense of taste</i> <i>I can identify the body parts linked to the sense of taste</i>		<b>Lesson 2</b> <b>LO:</b> I can recognise that the absence of light is darkness	<b>Lesson 2</b> <b>LO:</b> I can understand that vibrations from sounds travel through a medium to the ear (research /exploration)		<b>Lesson 2</b> I can explain that we see things because light travels from light sources to objects and then to our eyes (observation)
	Lesson 3 <i>LO:To identify, compare and group the sounds</i> <i>I can identify the body parts linked to the sense of sound</i>		<b>Lesson 3</b> <b>LO:</b> Observe that light is reflected from surfaces <b>LO: I can identify materials with different tyoes of surfaces (shiny, dull, smooth)</b> (observation/ classification)	<b>Lesson 3</b> I can find patterns between the <b>pitch</b> of a sound and the features of the object that produced it <b>(pattern seeking)</b>		<b>Lesson 3</b> <b>LO:</b> I can understand that light travels in straight lines but can also change direction when travelling from one medium (substance) to another as it refracts  Look at refraction- by observing light in different material-water/oil/glass
	Lesson 4 <i>LO:To describe how our sense of touch helps us to learn about the world around us.</i> <i>I can identify the body parts linked to the sense of touch.</i>		<b>Lesson 4</b> Recognise that light from the sun can be dangerous and that there are ways to protect our eyes. <b>(Research)</b>	<b>Lesson 4</b> <b>LO</b> I can find patterns between the volume of a sound and the strength of the vibrations that produced it <b>(pattern seeking)</b>		<b>Lesson 4</b> I can use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them
	Lesson 5 <i>LO:To describe and compare a variety of different smells, identifying which are the most and least liked by the class</i>		<b>Lesson 5</b> <b>LO:</b> I can recognise that shadows are formed when light from a light source is blocked by an opaque object (exploration)	<b>Lesson 5</b> <b>LO</b> I can recognise that sounds get fainter as the distance from the sound source increases. <b>(observation/fair test teacher)</b>		

		<i>I can identify the body parts linked to the sense of smell</i>				chooses-see support if needed) Specific Assessment Opportunity		
		Lesson 6 <i>LO: Understand that we can collect and group information about ourselves</i> <i>I can identify the body parts linked to the sense of sight.</i>			<b>Lesson 6</b> <b>LO:</b> I can find patterns in the way that the size of a shadow changes (pattern seeking)			

		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	<b>By the end of Reception</b>	<b>By the end of Year 1</b>	<b>By the end of Year 2</b>	<b>By the end of Year 3</b>	<b>By the end of Year 4</b>	<b>By the end of Year 5</b>	<b>By the end of Year 6</b>
<b>Electricity</b>	<b>Nursery</b>				<b><u>To understand electrical circuits</u></b>		<b><u>Electricity</u></b>
	<b>Communication and Language</b>				Identify common appliances that run on electricity Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.  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.  Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.  Recognise some common conductors and insulators and associate metals with being good conductors.		associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit  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  use recognised symbols when representing a simple circuit in a diagram. Summer 2
	• Understand 'why' questions, like: "Why do you think the caterpillar got so fat?" Talk about what they see, using a wide vocabulary. • Explore how things work. • Explore and talk about different forces they can feel. • Talk about the differences between				<b><u>Vocab</u></b> Circuit complete circuit buzzer bulbs current battery power source switch off position on position Conductors insulators cells battery		<b><u>Vocab</u></b> Voltage electrons current increase volts Electrical safety circuit diagram variation negative terminal positive terminal fuse wire resistor

<p>materials and changes they notice</p> <p>Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter</p> <p>Develop a sense of curiosity and exploration through a range of resources relating to our topics,</p>						
				<b>Lesson 1</b> LO: I can identify common appliances that run on electricity <b>(classifying)</b>		<b>Lesson 1</b> LO: I can use recognised symbols when representing a simple circuit in a diagram. (Research/observation)
				<b>Lesson 2</b> LO: I can construct a simple series electrical circuit I can identify and name its basic parts, including cells, wires, bulbs, switches and buzzers (exploration)		<b>Lesson 2</b> LO: I can link the brightness of a lamp with the voltage of cells used in the circuit comparing and giving reasons <b>(Fair Test)</b>
				<b>Lesson 3</b> LO: I can investigate whether a lamp will light in a simple series circuit. <b>(pattern seeking)</b>		<b>Lesson 3</b> I can associate the volume of a buzzer with the voltage of cells used in the circuit. (Pattern seeking)
				<b>Lesson 4</b> LO I can investigate simple circuits with a switch. <b>(pattern seeking)</b>		<b>Lesson 4</b> LO: I can create a circuit for a purpose and compare and give reasons for variations in how components function within it ( including the brightness of bulbs and the switches)
			<b>Lesson 5</b> LO: I can investigate common conductors and insulators. <b>(observation/fair test teacher chooses-see support if needed)</b> <b>Specific Assessment Opportunity</b>		<b>Lesson 5</b> LO: I can complete the circuit (link to DT structures) or create a loop game (Exploration)  <b>Assessment Opportunity</b>	

		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Forces (inc Magnets)	By the end of Reception	By the end of Year 1	By the end of Year 2	By the end of Year 3	By the end of Year 4	By the end of Year 5	By the end of Year 6
	Explore how things work. Provide mechanical equipment for children to play			<b>Forces and magnets</b>  compare how things move on different surfaces		<b>ALSO LINKS TO MATERIALS</b>  explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object	



<p>with and investigate. Suggestions: wind-up toys, pulleys, sets of cogs with pegs and boards</p> <p><b>Explore and talk about different forces they can feel.</b> Draw children's attention to forces. Suggestions: •</p> <p>how the water pushes up when they try to push a plastic boat under it • how they can stretch elastic, snap a twig, but cannot bend a metal rod • magnetic attraction and repulsion Plan and introduce new vocabulary related to the exploration and encourage children to use it.</p> <p><b>Nursery</b></p> <p><b>Communication and Language</b></p> <p>• Understand 'why' questions, like: "Why do you think the caterpillar got so fat?" Talk about what they see, using a wide vocabulary.</p>			<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 pole</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</p>	
			<p>Vocab Magnet magnetic pole, repel, attract, direction, force, north, south, magnetise, push, pull, Friction, Gravity, seesaw</p> <p>Metals: iron, copper, glass, rubber, cloth, silver, gold</p>		<p>Vocab Gravity air resistance water resistance up thrust canopy fulcrum Lever hinges force exerted force produced pulley Galileo Archimedes vacuum</p>	
			<p><b>Lesson 1 - Forces -Pushes and Pulls.</b> <b>L.O. I can identify forces as pushes and pulls.</b> <b>Exploration.</b></p>		<p><b>Lesson 1</b> LO: I know unsupported objects fall towards Earth because of the force of gravity <b>(exploration)</b></p>	
			<p><b>Lesson 2 – Forces – Friction.</b> LO: I can compare how things move on different surfaces (Pattern seeking)</p>		<p><b>Lesson 2</b> <b>LO:</b> I can understand the force of friction that acts between surfaces</p>	
			<p><b>Lesson 3</b> <b>LO:</b> I can explain what is a magnet I can compare and group materials that are magnetic and non magnetic. <b>(classification)</b> <b>L.O. I understand that magnetic forces can act at a distance.</b></p>		<p><b>Lesson 3</b></p> <ul style="list-style-type: none"> <li>I can understand the effects of air resistance when it acts upon an object (Fair test/observation)</li> </ul>	
		<p><b>Lesson 4</b> <b>L.O. I can test the strength of magnets.</b> <b>L.O. I can recognize that magnetic forces can act at a distance.</b></p>		<p><b>Lesson 4</b> <b>LO:</b> I can understand the effects of water resistance when it acts on an object <b>(pattern seeking)</b></p>		

<ul style="list-style-type: none"> <li>• Explore how things work.</li> <li>• Explore and talk about different forces they can feel.</li> <li>• Talk about the differences between materials and changes they notice</li> </ul> <p>Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter</p> <p>Develop a sense of curiosity and exploration through a range of resources relating to our topics,</p>						
			<p><b>Lesson 5</b>  <b>LO:</b> I can identify that magnets have 2 poles.  <b>LO:</b> I can observe how magnets attract and repel  <b>LO:</b> I can predict whether two magnets can repel or attract depending on which pole they are facing</p>		<p><b>Lesson 5</b>  <b>LO</b> I can understand how levers and pulleys allow a smaller force to have greater effect.  <b>(Exploration)</b></p>	
			<p><b>Lesson 6</b>  <b>L.O.</b>I can use my knowledge of forces to design and build a children’s toy.</p>		<p><b>Lesson 6</b>  <b>LO:</b> I can plan an investigation to find out if the position of the fulcrum affects the amount of force needed to lift an object  <b>(Fair test)</b></p>	