

### Categorising knowledge Science

Living things				States		Earth and Space	Energy		
	Plants	Animals including humans (evolution yr 6)	Living thing and habitats	Everyday Materials (including rocks)	States of Matter	Earth and Space (including seasonal changes)	Light and Sound	Forces and Magnets	Electricity
<b>EYFS</b>	How does it grow? How has it changed?	Who am I? What should we eat? What is a healthy choice – Why aren't they here? What am I?	Who lives here?	How can I move my treasure?  Rocks, why aren't they here?		What's out there?  Why do we wear coats?			
<b>Year 1</b>	Why is it important to know the difference between a wild flower and a garden flower?/Are garden plants more beautiful than wild plants?	How are animals and humans similar?		How do we choose the best material for a job?		How can the weather affect our lives?			
<b>Year 2</b>	Why can't all plants grow in the desert?	How do animals and humans change throughout their lives?	How is a lion's habitat different to that of a penguin?	Why wouldn't you build a house out of rubber?			How does light help me to see the world around me?	How can magnets move things?	
<b>Year 3</b>	Why do plants grow?	Why do most animals have skeletons?		Why are all rocks different?			How do humans and animals hear sounds and what do they tell us?		Why is electricity so important?
<b>Year 4</b>		Why do all animals need to eat?	Why do living things look different?		How can water be a solid, liquid and gas?				
<b>Year 5</b>		Why do people get grey/white hair when they get older?	What makes a successful life cycle?	How can we separate mixtures?		How can the sun help us tell the time?		Why does an object fall?	
<b>Year 6</b>		How does the length of time we exercise affect our heart rate?  Can you classify these observations into evidence for the idea of evolution and evidence against?	How can we organise all the zoo animals?				Can we bend light around a corner?		How can you make a light brighter?

### Categorising knowledge Science

Living things						
	Plants	Animals including humans (evolution yr 6)	Living thing and habitats	Types of enquiry	Working scientifically skills used	Reading links
EYFS	<p>ELG Explore the natural world around them, making observations and drawing pictures of plants.</p> <p><b>T2-1 How does it grow?</b> Jack &amp; The Beanstalk Identify and describe the basic structure of a bean. Plant a bean, observational discussions, what a bean plant needs to grow</p> <p><b>Across our school year: Seasons...How has it changed?</b> Observational walks, drawing, class discussions,</p>	<p>ELG Explore the natural world around them, making observations and drawing pictures of animals.</p> <p><b>T1-1 Who am I?</b> To identify, name, draw and label the basic parts of the human body and say which part of the body.</p> <p><b>Watch should we eat?</b> Look at healthy eating</p> <p><b>What is an healthy choices</b> – describing different ways to stay hygienic; hands, toilet, teeth</p> <p><b>T3-1 Why aren't they here?</b> Identify and name a variety of common animals, research which are carnivores, herbivores and omnivores.</p> <p>ELG Understand some important processes and changes in the natural world around including the seasons and changing state of matter</p> <p><b>T2-2 What am I?</b> Lifecycle: bees, butterflies, chicks, humans</p>	<p>ELG 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.</p> <p><b>T3-2 Who lives here?</b> Rainforest exploring, leads into major habitats &amp; their living creatures; then leads into minibeasts: Observational walks, drawing, class discussions,</p>			<p>Funny Bones</p> <p>Teeth Health</p> <p>The Growing Story</p> <p>Hello World</p> <p>Life Cycles</p> <p>Walking Through the Jungle</p> <p>Very Hungry Caterpillar</p>
Year 1	<p>Spring 2 <i>Why is it important to know the difference between a wild flower and a garden flower?/Are garden plants more beautiful than wild plants?</i></p> <ul style="list-style-type: none"> <li>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</li> <li>Identify and describe the basic structure of a variety of common flowering plants, including trees.</li> </ul>	<p>Summer 1 <i>How are animals and humans similar?</i></p> <ul style="list-style-type: none"> <li>To identify and name a variety of common animals</li> <li>Identify and name a variety of common animals that are carnivores, herbivores and omnivores.</li> <li>To describe and compare the structure of a variety of common animals</li> <li>To identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense?</li> </ul> <p><i>Snap science is used as a basis and is adapted as necessary.</i></p>		<ul style="list-style-type: none"> <li>Pattern seeking X X X</li> <li>Observation over time X X X</li> <li>Planting and observing cress seeds grow.</li> <li>Comparative tests X X X</li> <li>Identify and classify X X X</li> <li>Sorting animals into different groups e.g. mammal, reptile, etc and carnivore, omnivore, herbivore</li> <li>Research X X X</li> </ul>	<ul style="list-style-type: none"> <li>asking simple questions and recognising that they can be answered in different ways X X X</li> <li>observing closely, using simple equipment X X X</li> <li>performing simple tests X X X</li> <li>identifying and classifying X X X</li> <li>using their observations and ideas to suggest answers to questions X X X</li> <li>gathering and recording data to help in answering questions X X X</li> </ul>	<p>Spring 2 - How flowers grow – Emma Helbrough</p> <p>Summer 2 – Herbivores, carnivores and omnivores – Foxton Primary Science Nicola Tyrrell</p> <p>Animals and their young How animals produce and care for their babies – Pamela Hickman (non-fiction book)</p> <p>Animal parents – Elpeth Graham</p>

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<p><b>Year 2</b></p>	<p><b>X Summer 1 – Why can't all plants grow in the desert?</b></p> <ul style="list-style-type: none"> <li>To observe plants in the local environment and record what I see.</li> <li>To observe and describe how seeds and bulbs grow into mature plants by planting.</li> <li>To set up a test and make a prediction.</li> <li>To observe and describe how seeds and bulbs grow into mature plants and to understand the life cycle of plants.</li> <li>To describe how plants need water, light and a suitable temperature to grow.</li> <li>To gather and record data to answer questions.</li> <li>To understand what crops need to grow and stay healthy.</li> </ul> <p>Snap science not used.</p>	<p><b>X Autumn 2 – How do animals and humans change throughout their lives?</b></p> <ul style="list-style-type: none"> <li>To recognise the needs of a human baby for survival.</li> <li>To compare features of a baby and a child.</li> <li>To investigate whether older children have bigger heads.</li> <li>To sort food into different types.</li> <li>To describe different ways to stay hygienic.</li> </ul> <p>Snap Science used as a basis but adapted as necessary.</p>	<p><b>X Spring 2 – How is a lion's habitat different to that of a penguin?</b></p> <ul style="list-style-type: none"> <li>To recognise and compare the main components of some different habitats.</li> <li>To construct examples of food chains for a selection of habitats</li> <li>To identify ways in which living things are suited to their habitat (penguin and lion).</li> <li>To create an animal's habitat and to show everyone an animal needs using practical resources.</li> </ul> <p>Snap Science used as a basis but adapted as necessary.</p>	<ul style="list-style-type: none"> <li>Pattern seeking X X X</li> <li>Patterns of plants growth in different climates over time</li> <li>Patterns of human and animal growth and development</li> <li>Observation over time X X X</li> <li>Planting seeds and bulb in a range of conditions.</li> <li>Comparative tests X X X</li> <li>Planting seeds and bulb in a range of conditions.</li> <li>Comparing head sizes at different ages Is the tallest person the oldest</li> <li>Identify and classify X X X</li> <li>Food groups</li> <li>Features of a baby and a child</li> <li>Types of plants/trees</li> <li>Food chains</li> <li>Identify ways in which living things are suited to their habitat</li> <li>Research X X X</li> <li>Comparing head sizes at different ages Is the tallest person the oldest</li> <li>A habitat of their choice</li> </ul>	<ul style="list-style-type: none"> <li>asking simple questions and recognising that they can be answered in different ways X X X</li> <li>observing closely, using simple equipment X X X</li> <li>performing simple tests X X X</li> <li>identifying and classifying X X X</li> <li>using their observations and ideas to suggest answers to questions X X X</li> <li>gathering and recording data to help in answering questions X X X</li> </ul>	<p>First Encyclopaedia of Animals</p> <p>Big Book of Animals</p> <p>How Flowers Grow</p> <p>It All Starts with a Seed</p>
<p><b>Year 3</b></p>	<p><b>Why do plants grow?</b></p> <p>Spring 1 &amp; 2 (Plants)</p> <ul style="list-style-type: none"> <li>Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</li> <li>Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant</li> <li>Investigate the way in which water is transported within plants</li> <li>Explore the part that flowers play in the life cycle</li> </ul>	<p><b>Why do most animals have skeletons?</b></p> <p>Summer 2 (skeletons, muscles and nutrition)</p> <ul style="list-style-type: none"> <li>Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat</li> <li>Identify that humans and some other animals have skeletons and muscles for support, protection and movement</li> </ul>		<ul style="list-style-type: none"> <li>Pattern seeking X X X</li> <li>Children plan and complete an investigation to find out how physical attributes affect physical ability.</li> <li>Observation over time X X X</li> <li>Comparative tests X X X</li> <li>Children are investigating how different environments affect the how quickly water moves through the stem</li> <li>Identify and classify X X X</li> <li>Children are able to explore muscles in bodies further and identify which muscles are working</li> <li>Children are able to identify the main parts of a flowering plant and their functions.</li> <li>Research X X X</li> <li>Children are able to identify the main parts of a flowering plant and their functions.</li> <li>Fair testing X X X</li> </ul>	<ul style="list-style-type: none"> <li>asking relevant questions and using different types of scientific enquiries to answer them X X X</li> <li>Children to ask simple questions about how a human could survive on a desert island.</li> <li>setting up simple practical enquiries, comparative and fair tests X X X</li> <li>Children plan and complete an investigation to find out how physical attributes affect physical ability.</li> <li>Children are investigating how different environments affect the how quickly water moves through the stem</li> <li>making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers X X X</li> <li>Children plan and complete an investigation to find out how physical attributes affect physical ability.</li> <li>Children are investigating how different environments affect the how quickly water moves through the stem</li> <li>gathering, recording, classifying and presenting data in a variety of ways to help in answering questions X X X</li> <li>recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables X X X</li> <li>Children plan and complete an investigation to find out how physical attributes affect physical ability.</li> </ul>	

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					<p>Children are able to explore muscles in bodies further and identify which muscles are working</p> <p>Children are able to identify the main parts of a flowering plant and their functions.</p> <p>Children are investigating how different environments affect the how quickly water moves through the stem</p> <ul style="list-style-type: none"> <li>reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions X X X</li> </ul> <p>Children are able to identify the main parts of a flowering plant and their functions.</p> <ul style="list-style-type: none"> <li>using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions X X X</li> </ul> <p>Children plan and complete an investigation to find out how physical attributes affect physical ability.</p> <p>Children are able to explore muscles in bodies further and identify which muscles are working</p> <p>Children are investigating how different environments affect the how quickly water moves through the stem</p> <ul style="list-style-type: none"> <li>identifying differences, similarities or changes related to simple scientific ideas and processes X X X</li> </ul> <p>Children plan and complete an investigation to find out how physical attributes affect physical ability.</p> <p>Children are investigating how different environments affect the how quickly water moves through the stem</p> <ul style="list-style-type: none"> <li>using straightforward scientific evidence to answer questions or to support their findings. X X X</li> </ul> <p>Children plan and complete an investigation to find out how physical attributes affect physical ability.</p> <p>Children are able to explore muscles in bodies further and identify which muscles are working</p> <p>Children are investigating how different environments affect the how quickly water moves through the stem</p>	
<p><b>Year 4</b></p>		<p><b>Autumn 2</b> <i>Why do all animals need to eat?</i></p> <ul style="list-style-type: none"> <li>Describe the simple functions of the basic parts of the digestive system in humans</li> <li>Identify the different types of teeth in humans and their simple functions</li> <li>Construct and interpret a variety of food chains, identifying producers, predators and prey (Snap Science)</li> </ul>	<p><b>Autumn 2</b> <i>Why do living things look different?</i></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> <li>Recognise that environments can change and that this can sometimes pose dangers to living things. (Snap Science)</li> </ul>	<ul style="list-style-type: none"> <li>Pattern seeking X X X</li> <li>Children will identify different groups of living things.</li> <li>Observation over time X X X</li> <li>Comparative tests X X X</li> <li>Identify and classify X X X</li> <li>Identify and classify different animals</li> <li>Children will categorise types of teeth</li> <li>Research X X X</li> <li>Children will research their chosen vertebrates and invertebrates</li> <li>Fair testing X X X</li> </ul>	<ul style="list-style-type: none"> <li>asking relevant questions and using different types of scientific enquiries to answer them X X X</li> <li>setting up simple practical enquiries, comparative and fair tests X X X</li> <li>making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers X X X</li> <li>gathering, recording, classifying and presenting data in a variety of ways to help in answering questions X X X</li> <li>recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables X X X Label diagrams of teeth and digestive systems and their functions.</li> <li>reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions X X X</li> </ul>	

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					<ul style="list-style-type: none"> <li>• using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions X X X</li> <li>• identifying differences, similarities or changes related to simple scientific ideas and processes X X X</li> <li>• using straightforward scientific evidence to answer questions or to support their findings. X X X</li> </ul>	
Year 5	<p><b>Summer 1</b> <i>Changes as humans develop to old age</i></p> <p><i>Why do people get grey/white hair when they get older?</i></p> <ul style="list-style-type: none"> <li>• describe the changes as humans develop to old age.</li> </ul>	<p><b>Spring 2</b> <i>What makes a successful life cycle?</i></p> <ul style="list-style-type: none"> <li>• describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</li> </ul> <p>describe the life process of reproduction in some plants and animals</p>	<ul style="list-style-type: none"> <li>• Pattern seeking X X X</li> </ul> <p>The children look at how taxonomists have used similar characteristics to classify creatures.</p> <p>Children describe the changes as humans develop to old age. <ul style="list-style-type: none"> <li>• Observation over time X X X</li> </ul> <p>The children look at data for the growth of babies in their first year.</p> <ul style="list-style-type: none"> <li>• Comparative tests X X X</li> <li>• Identify and classify X X X</li> </ul> <p>The children classify a broad group of animals according to common observable characteristics.</p> <ul style="list-style-type: none"> <li>• Research X X X</li> <li>• Fair testing X X X</li> </ul> </p>	<ul style="list-style-type: none"> <li>• planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary X X X</li> <li>• taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate X X X</li> <li>• recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs X X X</li> <li>• using test results to make predictions to set up further comparative and fair tests X X X</li> <li>• reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations X X X</li> <li>• identifying scientific evidence that has been used to support or refute ideas or arguments X X X</li> </ul>	None used currently however there must be great books out there about animal habitats across the world	
Year 6	<p><b>Spring 2</b> <i>How does the length of time we exercise affect our heart rate?</i></p> <ul style="list-style-type: none"> <li>• identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</li> <li>• recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</li> <li>• describe the ways in which nutrients and water are transported within animals, including humans</li> </ul> <p><b>Summer 1</b> <i>Can you classify these observations into evidence for the idea of evolution and evidence against?</i></p> <ul style="list-style-type: none"> <li>• recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</li> <li>• recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</li> </ul>	<p><b>Summer 2</b> <i>How can we organise all the zoo animals?</i></p> <ul style="list-style-type: none"> <li>• describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals</li> <li>• Give reasons for classifying plants and animals based on specific characteristics.</li> </ul>	<ul style="list-style-type: none"> <li>• Pattern seeking X X X</li> </ul> <p>In the investigation the children will observe any patterns linking exercised to the rate of their pulse.</p> <p>The children will use the characteristics of a wide range of creatures and use similarities and patterns in features to categorise them.</p> <ul style="list-style-type: none"> <li>• Observation over time X X X</li> </ul> <p>The children will set up an exercise challenge and record their findings noting the impact it has on different variables (pulse) over time.</p> <ul style="list-style-type: none"> <li>• Comparative tests X X X</li> <li>• Identify and classify X X X</li> </ul> <p>The children will identify and classify different species in relation to extinction or risk of extinction.</p> <p>Children will classify a variety of creatures and also create and categorise their own new creature.</p> <ul style="list-style-type: none"> <li>• Research X X X</li> </ul> <p>The children will spend time researching and understanding the effects drugs, exercise and diet have on how a body functions.</p>	<ul style="list-style-type: none"> <li>• planning different types of scientific inquiries to answer questions, including recognising and controlling variables where necessary X X X</li> <li>• taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate X X X</li> <li>• recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs X X X</li> <li>• using test results to make predictions to set up further comparative and fair tests X X X</li> <li>• reporting and presenting findings from inquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations X X X</li> <li>• identifying scientific evidence that has been used to support or refute ideas or arguments X X X</li> </ul>		

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		<ul style="list-style-type: none"> <li>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</li> </ul>		<p>The children will research Mary Anning and Charles Darwin and look at the impact they have had on science.</p> <ul style="list-style-type: none"> <li>Fair testing X X X</li> </ul>	
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States					
	Everyday Materials	States of Matter	Types of enquiry	Working Scientifically skills used	Reading links
<b>EYFS</b>	<p>ELG Understand some important processes and changes in the natural world around including the seasons and changing state of matter</p> <p><b>T3-2 How can I move my treasure?</b></p> <p>Investigating and researching floating &amp; sinking.</p>				
<b>Year 1</b>	<p>Autumn 2</p> <p><i>How do we choose the best material for a job?</i></p> <ul style="list-style-type: none"> <li>To distinguish between an object and the material it is made from.</li> <li>To identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock.</li> <li>Describe the physical properties of a variety of everyday materials.</li> <li>Compare and group together a variety of everyday materials on the basis of their simple physical properties.</li> </ul>		<ul style="list-style-type: none"> <li>Pattern seeking X X X</li> <li>Observation over time X X X</li> <li>Comparative tests X X X Testing if it is waterproof, floats, strength – does it rip?</li> <li>Identify and classify X X X</li> <li>Research X X X</li> </ul>	<ul style="list-style-type: none"> <li>asking simple questions and recognising that they can be answered in different ways X X X</li> <li>observing closely, using simple equipment X X X</li> <li>performing simple tests X X X</li> <li>identifying and classifying X X X</li> <li>using their observations and ideas to suggest answers to questions X X X</li> <li>gathering and recording data to help in answering questions X X X</li> </ul>	
<b>Year 2</b>	<p>X <b>Autumn 1</b> – <i>Why wouldn't you build a house out of rubber?</i></p> <ul style="list-style-type: none"> <li>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</li> <li>To consider whether a material is a good choice for a job.</li> <li>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</li> </ul>		<ul style="list-style-type: none"> <li>Pattern seeking X X X</li> <li>Looking for patterns in properties of materials</li> <li>Observation over time X X X</li> <li>Comparative tests X X X</li> <li>Compare the properties (bendy) of objects</li> <li>Identify and classify X X X</li> <li>Grouping materials according to properties</li> <li>Research X X X</li> <li>Which materials can be recycled</li> </ul>	<ul style="list-style-type: none"> <li>asking simple questions and recognising that they can be answered in different ways X X X</li> <li>observing closely, using simple equipment X X X</li> <li>performing simple tests X X X</li> <li>identifying and classifying X X X</li> <li>using their observations and ideas to suggest answers to questions X X X</li> <li>gathering and recording data to help in answering questions X X X</li> </ul>	The Woolly Saucepan
<b>Year 3</b>					
<b>Year 4</b>		<p><b>Autumn 1</b></p> <p><i>How can water be a solid, liquid and gas?</i></p> <ul style="list-style-type: none"> <li>Compare and group materials together, according to whether</li> </ul>	<ul style="list-style-type: none"> <li>Pattern seeking X X X</li> <li>Observation over time X X X</li> <li>Observing how long it takes an ice hand to melt</li> <li>Comparative tests X X X</li> <li>Identify and classify X X X</li> </ul>	<ul style="list-style-type: none"> <li>asking relevant questions and using different types of scientific enquiries to answer them X X X</li> <li>Children will answer inquiry questions about ice hands melting</li> <li>setting up simple practical enquiries, comparative and fair tests X X X</li> <li>Children will answer inquiry questions about ice hands melting</li> </ul>	

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		<p>they are solids, liquids or gases</p> <ul style="list-style-type: none"> <li>Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C)</li> <li>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</li> </ul>	<p>Identify mediums into solids, liquids and gases.</p> <ul style="list-style-type: none"> <li>Research X X X</li> <li>Fair testing X X X</li> </ul> <p>Children will think about how to make their investigations fair when investigating how long it takes an ice hand to melt.</p>	<ul style="list-style-type: none"> <li>making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers X X X Children will use recording equipment to measure how long an ice hand takes to melt</li> <li>gathering, recording, classifying and presenting data in a variety of ways to help in answering questions X X X Children will present data on a line graph</li> <li>recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables X X X Children will record investigations in tables and draw diagrams of ice hands melting</li> <li>reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions X X X Children will report findings to the rest of the class</li> <li>using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions X X X Children will record their conclusions and discuss improvements/future predictions</li> <li>identifying differences, similarities or changes related to simple scientific ideas and processes X X X Children will have studied the physical changes when changing state</li> <li>using straightforward scientific evidence to answer questions or to support their findings. X X X Children will need to refer to their experiments to explain changes of states</li> </ul>	
Year 5	<p><b>Autumn 1 and 2</b> <i>How can we separate mixtures?</i></p> <ul style="list-style-type: none"> <li>compare and group together everyday materials;</li> <li>know that some materials will dissolve in liquid to form a solution, how to recover a substance from a solution;</li> <li>solids, liquids and gases to decide how mixtures might be separated;</li> <li>uses of everyday materials, including metals, wood and plastic; demonstrate that dissolving, mixing and changes of state are reversible changes, formation of new materials</li> </ul>		<ul style="list-style-type: none"> <li>Pattern seeking X X X</li> <li>Observation over time X X X</li> </ul> <p>The children observe, measure, describe and explain the changes that happen to a mystery material when water is added.</p> <ul style="list-style-type: none"> <li>Comparative tests X X X</li> </ul> <p>Children to investigate the best carrier bag to use to carry shopping (based on material)</p> <ul style="list-style-type: none"> <li>Identify and classify X X X</li> <li>Research X X X</li> <li>Fair testing X X X</li> </ul> <p>Children set up a comparative test of shopping bags from different stores and choose one variable when testing.</p>	<ul style="list-style-type: none"> <li>planning different types of scientific inquiries to answer questions, including recognising and controlling variables where necessary X X X</li> <li>taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate X X X</li> <li>recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs X X X</li> <li>using test results to make predictions to set up further comparative and fair tests X X X</li> <li>reporting and presenting findings from inquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations X X X</li> <li>identifying scientific evidence that has been used to support or refute ideas or arguments X X X</li> </ul>	
Year 6					



Science Curriculum – Categorising knowledge

Earth and Space						
	Seasonal changes	Rocks	Earth and Space	Types of enquiry	Working scientifically skills used	Reading links
EYFS	<p>ELG Understand some important processes and changes in the natural world around including the seasons and changing state of matter</p> <p><b>T1-2</b> <b>Why do we wear coats?</b> Seasonal changes &amp; weather/changing state – water/ice</p>	<p>ELG Understand some important processes and changes in the natural world around including the seasons and changing state of matter</p> <p><b>T3-1 Why aren't they here?</b> Looking at dinosaur fossils</p>	<p><b>What's out there?</b> Research the planets, orbit, light and dark, gravity, space travel</p>			
Year 1	<p>Autumn 1 (start – revisit throughout the year) <i>How can the weather affect our lives?</i></p> <ul style="list-style-type: none"> <li>To observe changes from Autumn to Winter.</li> <li>To observe changes from Winter to Spring.</li> <li>To observe changes from Spring to Summer.</li> <li>To describe how the weather changes across the seasons.</li> <li>To observe and describe how day length varies by exploring the average number of hours of daylight.</li> </ul>			<ul style="list-style-type: none"> <li>Pattern seeking X X X Observing patterns in weather data collected over the year e.g. temperatures – do they rise in the summer, does rainfall decrease in the summer?</li> <li>Observation over time X X X Collecting data on temperature, rainfall, wind direction weekly and general weather</li> <li>Comparative tests X X X</li> <li>Identify and classify X X X</li> <li>Research X X X</li> </ul>	<ul style="list-style-type: none"> <li>asking simple questions and recognising that they can be answered in different ways X X X</li> <li>observing closely, using simple equipment X X X</li> <li>performing simple tests X X X</li> <li>identifying and classifying X X X</li> <li>using their observations and ideas to suggest answers to questions X X X</li> <li>gathering and recording data to help in answering questions X X X</li> </ul>	
Year 2						
Year 3		<p><i>Why are all rocks different?</i></p> <p>Autumn 1 (Rocks)</p> <ul style="list-style-type: none"> <li>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</li> <li>Describe in simple terms how fossils are formed when things that have lived are trapped within rock</li> <li>Recognise that soils are made from rocks and organic matter.</li> </ul>		<ul style="list-style-type: none"> <li>Pattern seeking X X X</li> <li>Observation over time X X X</li> <li>Comparative tests X X X</li> <li>Identify and classify X X X</li> <li>Children will make observations about rocks and group them according to their properties.</li> <li>Children will make observations about different kinds of soils and identify their type.</li> <li>Research X X X</li> <li>Children will make observations about rocks and group them according to their properties.</li> <li>Children will make observations about different kinds of soils and identify their type.</li> <li>Fair testing X X X</li> </ul>	<ul style="list-style-type: none"> <li>asking relevant questions and using different types of scientific enquiries to answer them X X X</li> <li>Children will make observations about different kinds of soils and identify their type.</li> <li>setting up simple practical enquiries, comparative and fair tests X X X</li> <li>making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers X X X</li> <li>gathering, recording, classifying and presenting data in a variety of ways to help in answering questions X X X</li> <li>recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables X X X</li> <li>Children will make observations about rocks and group them according to their properties.</li> <li>reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions X X X</li> </ul>	<p>Stone Girl Bone Girl – Laurence Anholt</p>



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					<p>Children will make observations about rocks and group them according to their properties.</p> <ul style="list-style-type: none"> <li>using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions X X X</li> <li>identifying differences, similarities or changes related to simple scientific ideas and processes X X X</li> </ul> <p>Children will make observations about rocks and group them according to their properties.</p> <p>Children will make observations about different kinds of soils and identify their type.</p> <ul style="list-style-type: none"> <li>using straightforward scientific evidence to answer questions or to support their findings. X X X</li> </ul> <p>Children will make observations about different kinds of soils and identify their type.</p>
<b>Year 4</b>					
<b>Year 5</b>			<p>How can the sun help us tell the time?</p> <p><b>Summer 2</b></p> <ul style="list-style-type: none"> <li>movement of the Earth, and other planets, relative to the Sun in the solar system;</li> <li>movement of the Moon relative to the Earth;</li> <li>describe the Sun, Earth and Moon as approximately spherical bodies;</li> <li>use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky</li> </ul>	<ul style="list-style-type: none"> <li>Pattern seeking X X X</li> <li>The children study the movement of each planet around the sun.</li> <li>Observation over time X X X</li> <li>The children will study the phases of the moon.</li> <li>Comparative tests X X X</li> <li>Identify and classify X X X</li> <li>Research X X X</li> <li>The children look at a variety of books and the internet (interactive websites) to understand the position and movement of planets in relation to the sun and the moon.</li> <li>Fair testing X X X</li> </ul>	<ul style="list-style-type: none"> <li>planning different types of scientific inquiries to answer questions, including recognising and controlling variables where necessary X X X</li> <li>taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate X X X</li> <li>recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs X X X</li> <li>using test results to make predictions to set up further comparative and fair tests X X X</li> <li>reporting and presenting findings from inquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations X X X</li> <li>identifying scientific evidence that has been used to support or refute ideas or arguments X X X</li> <li>identifying scientific evidence that has been used to support or refute ideas or arguments X X X</li> </ul>
<b>Year 6</b>					

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Energy						
	Light and Sound	Forces and Magnets	Electricity	Types of enquiry	Working scientifically skills used	Reading links
Year 1						
Year 2						
Year 3	<p><i>How does light help me to see the world around me?</i></p> <p>Summer 1 (light)</p> <ul style="list-style-type: none"> <li>Recognise that they need light in order to see things and that dark is the absence of light</li> <li>Notice that light is reflected from surfaces</li> <li>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes</li> <li>Recognise that shadows are formed when the light from a light source is blocked by a solid object</li> <li>Find patterns in the way that the size of shadows change.</li> </ul>	<p><i>How can magnets move things?</i></p> <p>Autumn 2 (forces and magnets)</p> <ul style="list-style-type: none"> <li>Compare how things move on different surfaces</li> <li>Notice that some forces need contact between two objects, but magnetic forces can act at a distance</li> <li>Observe how magnets attract or repel each other and attract some materials and not others</li> <li>Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials</li> <li>Describe magnets as having two poles</li> <li>Predict whether two magnets will attract or repel each other, depending on which poles are facing.</li> </ul>		<ul style="list-style-type: none"> <li>Pattern seeking X X X</li> </ul> <p>Children investigate how mirrors work using a range of statements</p> <p>Children will investigate what happens when two magnets are brought near one another.</p> <ul style="list-style-type: none"> <li>Observation over time X X X</li> <li>Comparative tests X X X</li> </ul> <p>Children use opaque, transparent and translucent objects to make shadows</p> <p>Children compare and observe the turning of paper windmills</p> <p>Children compare how objects move over different surfaces.</p> <ul style="list-style-type: none"> <li>Identify and classify X X X</li> </ul> <p>Children sort objects by whether they would be easier or harder to see in a dark room.</p> <p>Children will sort materials into magnetic and non-magnetic (including different types of metal)</p> <ul style="list-style-type: none"> <li>Research X X X</li> <li>Fair testing X X X</li> </ul> <p>Children investigate how mirrors work using a range of statements</p>	<ul style="list-style-type: none"> <li>asking relevant questions and using different types of scientific enquiries to answer them X X X</li> </ul> <p>Children investigate how mirrors work using a range of statements</p> <p>Children will sort materials into magnetic and non-magnetic (including different types of metal)</p> <ul style="list-style-type: none"> <li>setting up simple practical enquiries, comparative and fair tests X X X</li> </ul> <p>Children investigate how mirrors work using a range of statements</p> <p>Children use opaque, transparent and translucent objects to make shadows</p> <p>Children compare and observe the turning of paper windmills</p> <p>Children compare how objects move over different surfaces.</p> <p>Children will investigate what happens when two magnets are brought near one another.</p> <ul style="list-style-type: none"> <li>making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers X X X</li> </ul> <p>Children investigate how mirrors work using a range of statements</p> <p>Children use opaque, transparent and translucent objects to make shadows</p> <p>Children compare how objects move over different surfaces.</p> <ul style="list-style-type: none"> <li>gathering, recording, classifying and presenting data in a variety of ways to help in answering questions X X X</li> <li>recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables X X X</li> </ul> <p>Children investigate how mirrors work using a range of statements</p> <p>Children use opaque, transparent and translucent objects to make shadows</p> <p>Children compare how objects move over different surfaces.</p> <p>Children will sort materials into magnetic and non-magnetic (including different types of metal)</p> <p>Children will investigate what happens when two magnets are brought near one another.</p> <ul style="list-style-type: none"> <li>reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions X X X</li> <li>using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions X X X</li> </ul> <p>Children investigate how mirrors work using a range of statements</p>	

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					<p>Children use opaque, transparent and translucent objects to make shadows</p> <p>Children compare how objects move over different surfaces.</p> <p>Children will investigate what happens when two magnets are brought near one another.</p> <ul style="list-style-type: none"> <li>identifying differences, similarities or changes related to simple scientific ideas and processes X X X</li> </ul> <p>Children investigate how mirrors work using a range of statements</p> <p>Children use opaque, transparent and translucent objects to make shadows</p> <p>Children compare and observe the turning of paper windmills</p> <p>Children compare how objects move over different surfaces.</p> <p>Children will investigate what happens when two magnets are brought near one another.</p> <ul style="list-style-type: none"> <li>using straightforward scientific evidence to answer questions or to support their findings. X X X</li> </ul> <p>Children investigate how mirrors work using a range of statements</p> <p>Children use opaque, transparent and translucent objects to make shadows</p> <p>Children compare how objects move over different surfaces.</p> <p>Children will sort materials into magnetic and non-magnetic (including different types of metal)</p> <p>Children will investigate what happens when two magnets are brought near one another.</p>	
<p><b>Year 4</b></p>	<p><b>Summer 1</b></p> <p><i>How do humans and animals hear sounds and what do they tell us?</i></p> <ul style="list-style-type: none"> <li>Identify how sounds are made, associating some of them with something vibrating</li> <li>Recognise that vibrations from sounds travel through a medium to the ear</li> <li>Find patterns between the pitch of a sound and features of the object that produced it</li> <li>Find patterns between the volume of a sound and the strength of the vibrations that produced it</li> <li>Recognise that sounds get fainter as the distance from the sound source increases.</li> </ul> <p>(Snap Science)</p>		<p><b>Spring 1 &amp; 2</b></p> <p><i>Why is electricity so important?</i></p> <ul style="list-style-type: none"> <li>Identify common appliances that run on electricity</li> <li>Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</li> <li>Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery</li> <li>Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</li> <li>Recognise some common conductors</li> </ul>	<ul style="list-style-type: none"> <li>Pattern seeking X X X</li> <li>Relationship between pitch and type of material.</li> <li>Observation over time X X X</li> <li>Comparative tests X X X</li> <li>Children will compare pitch and volume when the material of the instrument is changed</li> <li>Identify and classify X X X</li> <li>Conductors and insulator and conductivity.</li> <li>Research X X X</li> <li>Fair testing X X X</li> <li>Children will think about how to make their investigations fair when investigating how pitch and volume experiment.</li> </ul>	<ul style="list-style-type: none"> <li>asking relevant questions and using different types of scientific enquiries to answer them X X X</li> <li>Children will answer inquiry questions sound changes</li> <li>setting up simple practical enquiries, comparative and fair tests X X X</li> <li>Comparing pitch and volume across different materials and intensity of hit.</li> <li>making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers X X X</li> <li>Using data loggers to record how sound gets quieter or louder over different distances.</li> <li>gathering, recording, classifying and presenting data in a variety of ways to help in answering questions X X X</li> <li>Use of tables to record times during sound investigations.</li> <li>recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables X X X</li> <li>reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions X X X</li> <li>Written explanations and discussions of findings from volume and pitch lesson.</li> <li>using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions X X X</li> </ul>	

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			and insulators, and associate metals with being good conductors.		<p>Written explanations and discussions of findings from volume and pitch lesson.</p> <ul style="list-style-type: none"> <li>identifying differences, similarities or changes related to simple scientific ideas and processes X X X</li> </ul> <p>Children will change materials in a circuit to investigate how well they conduct electricity</p> <p>Children will change the intensity of hitting instruments and materials of instruments when investigating volume and pitch</p> <ul style="list-style-type: none"> <li>using straightforward scientific evidence to answer questions or to support their findings. X X X</li> </ul> <p>Children will refer back to their original predictions and answer inquiry question based on their findings</p>
Year 5		<p><b>Spring 1</b> <i>Why does an object fall?</i></p> <ul style="list-style-type: none"> <li>explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object <ul style="list-style-type: none"> <li>identify the effects of air resistance, water resistance and friction, that act between moving surfaces</li> <li>recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect</li> </ul> </li> </ul>		<ul style="list-style-type: none"> <li>Pattern seeking X X X</li> <li>Observation over time X X X</li> <li>Comparative tests X X X</li> </ul> <p>The children will choose from a variety of materials and will make a successful parachute. They then compare the materials and make a judgement as to the most successful material.</p> <ul style="list-style-type: none"> <li>Identify and classify X X X</li> <li>Research X X X</li> <li>Fair testing X X X</li> </ul> <p>The children will conduct an experiment where they try to keep a bubble floating for the maximum amount of time using only one variable.</p>	<ul style="list-style-type: none"> <li>planning different types of scientific inquiries to answer questions, including recognising and controlling variables where necessary X X X</li> <li>taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate X X X</li> <li>recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs X X X</li> <li>using test results to make predictions to set up further comparative and fair tests X X X</li> <li>reporting and presenting findings from inquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations X X X</li> <li>identifying scientific evidence that has been used to support or refute ideas or arguments X X X</li> </ul>
Year 6	<p><b>Spring 1 - Snap Science Light</b> <i>Can we bend light around a corner?</i></p> <ul style="list-style-type: none"> <li>recognise that light appears to travel in straight lines</li> <li>use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye</li> <li>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</li> <li>use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them</li> </ul>		<p><b>Autumn 1 – Snap Science</b> <i>How can you make a light brighter?</i> Electricity</p> <ul style="list-style-type: none"> <li>associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</li> <li>compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches</li> <li>use recognised symbols when representing a simple circuit in a diagram</li> </ul>	<ul style="list-style-type: none"> <li>Pattern seeking X X X</li> </ul> <p>The children will investigate the impact of increasing/decreasing the amount of components in a circuit and what the effect of this will be.</p> <ul style="list-style-type: none"> <li>Observation over time X X X</li> </ul> <p>The children will take measurements of their shadow on the playground at different times of the day and not the length and direction.</p> <ul style="list-style-type: none"> <li>Comparative tests X X X</li> </ul> <p>The children investigate different types of circuits using a variety of components.</p> <p>The children will observe shadows at different times in the day and record the findings.</p> <ul style="list-style-type: none"> <li>Identify and classify X X X</li> <li>Research X X X</li> </ul> <p>The children will use interactive websites and books to help with their understanding.</p> <ul style="list-style-type: none"> <li>Fair testing X X X</li> </ul> <p>The children set up a circuit which will change the brightness of a bulb changing variables.</p> <p>The children will set up a fair test to see if light can go round a corner changing one variable.</p>	<ul style="list-style-type: none"> <li>planning different types of scientific inquiries to answer questions, including recognising and controlling variables where necessary X X X</li> <li>taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate X X X</li> <li>recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs X X X</li> <li>using test results to make predictions to set up further comparative and fair tests X X X</li> <li>reporting and presenting findings from inquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations X X X</li> <li>identifying scientific evidence that has been used to support or refute ideas or arguments X X X</li> </ul>

## Science Curriculum – Categorising knowledge

This overview organises the curriculum into our main categories to support the children with making important learning connections and support with building subject schema. The highlights indicate to the teaching staff the terms where these skills will be developed. For further information regarding when topics are taught please see the year groups Curriculum Overviews. If you would like further detail regarding this curriculum area please e-mail your enquiry to: [admin@rivermead.wokingham.sch.uk](mailto:admin@rivermead.wokingham.sch.uk) with the subject “Science Curriculum enquiry FAO Curriculum and Science leader”