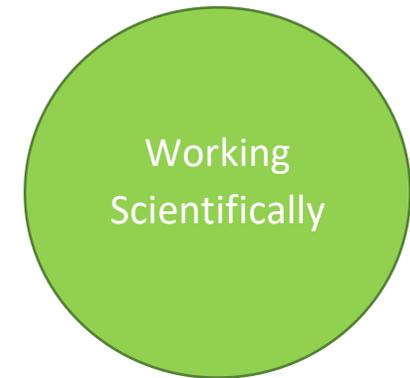
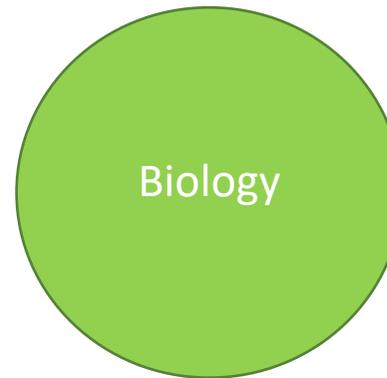
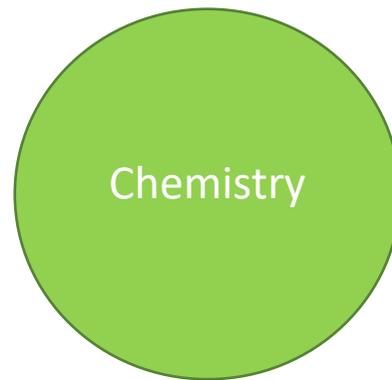
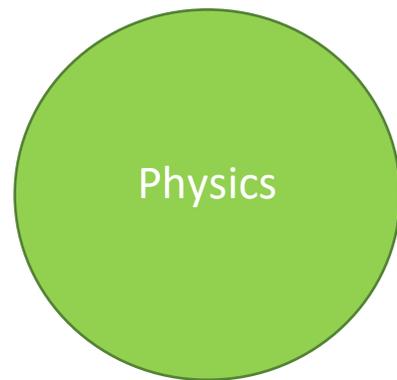




Science

Key Concepts and Breadth of Study



	Physics	Chemistry	Biology	Working Scientifically
<p>Autumn 1 ‘We are Unique’</p> <p>Autumn 2 ‘We are Inquisitive’</p> <p>Spring 1 ‘We are Explorers’</p> <p>Spring 2 ‘We can be Heroes’</p>	<ul style="list-style-type: none"> Talks about how forces they feel e.g. push, pull etc (e.g. using cars and ramps in the continuous provision) <i>Explores toys that use push and pull forces</i> Observing how different objects fall e.g. scarves, feathers Explore how toys travel through the air with and without parachutes 	<ul style="list-style-type: none"> Talks about some differences in the materials they use (discussions in continuous provision when creating with materials e.g. clay, salt dough to make Diva lamps and hedgehogs or exploring gloop/slime/ cooking – making pumpkin soup, making pizza). 	<ul style="list-style-type: none"> Explores and describes what they can see, hear and feel outside.(<i>Bulb planting, Autumn walk</i>) Develops an understanding of growth and changes over time.(<i>Growing from babies to children and growth of an Amaryllis bulb</i>) Recognises that some environments that are different to the one in which they live. Name and describe animals that live in different habitats. Describes different habitats (Woodland and Arctic animals, <i>Animals Native to the UK and Africa</i>) Identify similarities and differences in relation to living things.(<i>Hibernation, nocturnal animals</i>) Begin to understand the effect of changing seasons on the natural world around them. (<i>Autumn / Winter walks and discussions</i>) Can name the seasons and some of the changes that happen during them. (<i>Autumn / Winter walks and discussions</i>) 	<ul style="list-style-type: none"> Begin to observe changes overtime. (<i>Melting ice, growth of an Amaryllis bulb, how the sky changes throughout the day – linked to Space</i>) Begin to observe change in materials and how materials change when they are heated or cooled. (<i>exploring gloop/ slime/ cooking – making pumpkin soup / using clay and salt dough, melting ice, making pizza</i>) <i>Comparative testing (Make and testing air-propelled rockets to find out which is the ‘best’.</i> <i>Pattern seeking (Find simple patterns in how light levels and temperature change with the movement, or obscuring of, the Sun</i> Classification <i>Sort images of people according to their characteristics.</i> Researching using secondary sources <i>Find out information from visitors (dentist, nurse etc.).</i> Pattern seeking <i>Are taller children faster? Are taller children stronger? Do taller children have larger feet?</i>
<p>Year 1 <i>Who lives here? Let’s celebrate! Back in the Day</i></p>	<p>To distinguish between an object and the material from which it is made</p> <p>To discuss the differences between an object and the material it’s made from properties’</p> <p>To discuss the properties of metal objects and why some metals stick to magnets</p>		<p>To explore the basic parts of the human body.</p> <p>To explore our 5 senses.</p> <p>To have a clear understanding of our 5 senses and how we utilise them daily.</p> <p>To explore a variety of common animals.</p> <p>To discover the differences between carnivores, herbivores and omnivores.</p>	<p>To discover our 5 senses.</p> <p>To ask open questions to develop their understanding.</p> <p>To Predict which material will be the most successful and why</p>

	<p>To sort objects in the classroom according to these criteria: hard, soft, stretchy, stiff, bendy/floppy</p> <p>To predict which material will be the most successful and why before recreating the pigs' houses.</p>			
<p>Year 2</p> <p>Everyday materials</p> <p>Animals</p>	<p>To discover a range of materials.</p> <p>To explore the properties of materials.</p> <p>To explore uses and suitability of materials</p> <p>To discover how solid materials can be changed.</p>		<p>To identify and name a variety of animals.</p> <p>To discover animals and their offspring.</p> <p>To explore the basic needs of animals.</p> <p>To explore life cycles.</p> <p>To explore animal food chains.</p> <p>To discover habitats around the world.</p> <p>To explore local and micro habitats.</p> <p>To explore and compare the differences between living things, dead things and those which have never been alive.</p>	<p>To explore the experimental process.</p> <p>To make predictions.</p> <p>To achieve an experiment.</p> <p>To sort and classify animals into different categories.</p> <p>To observe and enquire into a microhabitat.</p> <p>To record findings using charts and tables.</p>
<p>Year 3</p> <p>Rocks and Soils</p> <p>Light and shadows</p> <p>Plants</p>	<p>To identify sources of light.</p> <p>To explore how mirrors reflect light.</p> <p>To discover how shadows can change in different conditions.</p>	<p>To discover different types of rocks.</p> <p>To explore the properties of rocks.</p> <p>To explore how fossils are formed.</p> <p>To explore the life of Mary Anning.</p> <p>To discover that soils are made from rocks and organic matter.</p>	<p>To name the parts of a flower.</p> <p>To know the parts and functions of a flower.</p> <p>To understand the process of seed dispersal.</p> <p>To understand the steps of flowering and pollination.</p> <p>To explore how plants adapt to their environment.</p>	<p>To explore the permeability of soil.</p> <p>To investigate reflective surfaces.</p> <p>To explore how shadows are formed.</p> <p>To investigate conditions for plant growth.</p> <p>To carry out a scientific investigation.</p> <p>To investigate how water is transported through plants.</p> <p>To explain the results of an investigation.</p>

<p>Year 4 States of Matter Living Things and Their Habitats Electricity</p>	<p>To compare and group solids, liquids and gasses. To explore how materials can change state. To discover what a solute, solvent and soluble are. To discover role of evaporation and condensation. To achieve a description of the water cycle. To name appliances that run on electricity. To identify and name cells, wires, bulbs, switches and buzzers on a circuit. To identify whether or not a lamp will light in a simple series circuit. To discover that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. To name some common conductors and insulators, and associate metals with being good conductors.</p>		<p>To discover that living things can be grouped in a variety of ways. To explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. To recognise that environments can change and that this can sometimes pose dangers to living things.</p>	<p>To observe and research the temperature at which substances change state. To explore and identify plants and animals in the school grounds. To report on findings from enquiries, including oral and written explanations. To use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</p>
<p>Year 5 Earth and Space Forces Properties of Materials Changes of Materials</p>	<p>To explore and describe the movement of the Earth, and other planets, relative to the Sun in the solar system. To explore and describe the movement of the Moon relative to the Earth. To achieve being able to describe the Sun, Earth and Moon as approximately spherical bodies. To use the idea of the Earth's rotation to discover and explain day and night, and the apparent movement of the sun across the sky.</p>	<p>To explore everyday materials achieving a comparison and grouping on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets To discover that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</p>		<p>To explore planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. To explore scientific evidence that has been used to support or refute ideas or arguments. To achieve planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p>

	<p>To discover and explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</p> <p>To explore and identify the effects of air resistance, water resistance and friction, that act between moving surfaces</p> <p>To explore and recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</p>	<p>To give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</p> <p>To use knowledge of solids, liquids and gases to explore how mixtures might be separated, including through filtering, sieving and evaporating</p> <p>To achieve being able to demonstrate that dissolving, mixing and changes of state are reversible changes</p> <p>To discover 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>To explore taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</p> <p>To accurately record results using scientific diagrams and label.</p> <p>To use test results to make predictions to set up further comparative and fair tests. reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations</p> <p>identifying scientific evidence that has been used to support or refute ideas or arguments</p> <p>To plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p> <p>To take measurements, using a range of scientific equipment, with increasing accuracy and precision</p> <p>To record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, and bar and line graphs</p> <p>To use test results to make predictions to set up further comparative and fair tests</p> <p>To report and present findings from</p>
--	---	---	--

				<p>enquiries, including conclusions, causal relationships and explanations of results, in oral and written forms such as displays and other presentations</p> <p>To identify scientific evidence that has been used to support or refute ideas or arguments.</p> <p>To plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p> <p>To take measurements, using a range of scientific equipment, with increasing accuracy and precision</p> <p>To record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, and bar and line graphs</p> <p>To use test results to make predictions to set up further comparative and fair tests</p> <p>To report and present findings from enquiries, including conclusions, causal relationships and explanations of results, in oral and written forms such as displays and other presentations</p> <p>To identify scientific evidence that has been used to support or refute ideas or arguments.</p>
--	--	--	--	--

<p>Year 6</p> <p>Living things</p> <p>Animals including Humans</p> <p>Light</p>	<p>To understand what light is and where it comes from</p> <p>To understand how light travels</p> <p>To understand how eyes detect light</p> <p>To investigate shadows</p> <p>To understand reflection</p> <p>I can understand the light spectrum</p> <p>I know light travels in straight lines</p>		<p>To discover what micro-organisms are</p> <p>To explore the history of Edward Jenner and the impact on his work</p> <p>To explore and discover how microbes spread</p> <p>To achieve a deep understanding of microbes</p> <p>To discover who Linnaeus was and his impact on classification systems</p> <p>To explore classification systems and use them</p> <p>To discover the similarities and difference between living things in order to determine their classification</p> <p>To explore unusual living creatures and use the vocabulary they learn to achieve their own descriptions of unusual living things.</p> <p>To apply all their learning to create their own creature, scenically describe it, classify it and label it.</p> <p>To explore the components of blood, describe their functions, and understand the different blood groups</p> <p>To discover the three types of blood vessel and name them</p> <p>To explore the structure and function of the human heart</p> <p>To investigate and understand how heart size and speed relates to age, fitness & activity</p> <p>To discover how nutrients and water are transported around the body</p> <p>To discover how diffusion and osmosis are processes that move nutrient & water</p>	<p>To investigate shadows</p>
---	---	--	--	-------------------------------

			<p>in the body</p> <ul style="list-style-type: none">To investigate diffusion and osmosisTo demonstrate how blood transports nutrients, water, gases and waste around the bodyTo discover and demonstrate how the circulatory system works including the role of the heartTo explore a healthy diet and the impact diet can have on the bodyTo explore how drugs impact on the way the human body functionsTo achieve an understanding that certain drugs can be used for positive effect in the form of medicine	
--	--	--	--	--