

KPA Science Journey - LTP

		Term 1	Term 2	Term 3	Term 4	Term 5	Term 6	
EYFS	<p style="text-align: center;">Communication & Language</p> <p style="text-align: center;">Personal, Social and emotional Development</p> <p style="text-align: center;">Understanding the World</p>	<p>Let's Investigate Autumn What happens to the leaves? What colours can you see? Have you been to the woods? Why do hedgehogs hibernate? Squirrels Busy Day, The Nutty Nut Chase, Tidy Oliver's Wood What do animals eat? What happens to food when it is left for a long time? What are the differences between pets and wild animals?</p>		<p>Frozen Planet What are the differences in the environment? What/who lives in the Arctic and the Antarctic? A Dot in the Snow, Poles Apart, Lost and Found, Non-Fiction Texts Keeping healthy, Looking after the environment, Seasonal changes, Winter, Ice investigations, Differences in environments</p>	<p>A Trip to Africa Where is Africa? Is Africa like Corby? What's the weather like? Giraffes Can't Dance, Abigail, Handa's Surprise, The Lion Inside Camouflage, Why do zebras have stripes and Cheetahs have spots? Differences in our food</p>	<p>Magical Minibeasts What is a minibeast? What's hiding under the log pile? What is an insect? What is the difference Non-fiction books, What the Ladybird Heard, Ben Plants a Butterfly Garden, Miss Spiders Tea Party Watching a caterpillar grow into a butterfly comparing the differences of a chick growing</p>	<p>Hooray for Summer How to stay safe in the sun? Shall we go to the seaside? What changes do you notice? How shall we relax in the summer? Summer Days and Nights, Sam Plants a Sunflower, The Tiny Seed, Penguin on Holiday Growing sunflowers and vegetables, Why is water important? Hedgerow investigators</p>	<ul style="list-style-type: none"> Make comments about what they have heard and ask questions to clarify their understanding. Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices. Explore the natural world around them, making observations and drawing pictures of animals and plants. 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. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.
Year 1	<p>Working scientifically During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:</p> <ul style="list-style-type: none"> asking simple questions and recognising that they can be answered in different ways observing closely, using simple equipment performing simple tests identifying and classifying using their observations and ideas to suggest answers to questions gathering and recording data to help in answering questions 	<p>Using Our Senses Parts of the body and senses</p>	<p>Everyday Materials Identifying materials and their uses</p>	<p>OCW-Sensing Seasons Weather across the seasons</p>	<p>Animals including Humans Types of animals - fish, amphibians, reptiles, birds and mammals</p>	<p>Plant Detectives Plants in our locality</p>	<p>OCW - Animal Antics Animals around us</p>	<p>The principal focus of science teaching in key stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly constructed world around them. They should be encouraged to be curious and ask questions about what they notice. They should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information. They should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways. Pupils should read and spell scientific vocabulary at a level consistent with their increasing word-reading and spelling knowledge at key stage 1.</p>
Year 2		<p>Materials: Shaping Up How shapes are made from materials</p>	<p>Growing Up How we change from being a baby Parts of the body and senses</p>	<p>Materials: Good Choices Compare materials and suitability for purpose</p>	<p>Take Care Healthy food & hygiene</p>	<p>The Apprentice Gardener Plants and how they grow</p>	<p>What is in your habitat? Habitats</p>	
Year 3	<p>Working scientifically</p> <ul style="list-style-type: none"> asking relevant questions and using different types of scientific enquiries to answer them setting up simple practical enquiries, comparative and fair tests making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers gathering, recording, classifying and presenting data in a variety of ways to help in answering questions recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions identifying differences, similarities or changes related to simple scientific ideas and processes using straightforward scientific evidence to answer questions or to support their findings. 	<p>Amazing Bodies Animal and human nutrition, and skeletons and muscles</p>	<p>Can you see me? Light and dark</p>	<p>The Power of Forces Magnets</p>	<p>Our Changing World What plants need to grow</p>	<p>How does your garden grow? Function of leaves and roots</p>	<p>Rock Detectives Identifying rocks and their properties</p>	<p>The principal focus of science teaching in lower key stage 2 is to enable pupils to broaden their scientific view of the world around them. They should do this through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions. They should ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information. They should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out. Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing word-reading and spelling knowledge.</p>
Year 4		<p>In a State Changing states of matter</p>	<p>Good Vibrations Sound and vibrations</p>	<p>Our Changing World and Who Am I? Classification of plants and animals</p>	<p>Switched On Electricity</p>	<p>Where does all that food go? Human digestive system</p>	<p>Human Impact Positive and negative effects on the environment</p>	
Year 5	<p>Working scientifically</p> <ul style="list-style-type: none"> planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs using test results to make predictions to set up further comparative and fair tests 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 identifying scientific evidence that has been used to support or refute ideas or arguments 	<p>Marvellous Mixtures and Materials: All Change Mixing and separating liquids. Reversible and irreversible changes</p>	<p>The Earth & Beyond Solar system and time</p>	<p>Everyday Materials and Get Sorted Fair tests and uses of materials</p>	<p>Our Changing World and Reproduction in Plants & Animals Life cycles</p>	<p>Feel the Force Measuring forces</p>	<p>Circle of Life Life cycles of mammals, amphibians, insects and birds</p>	<p>The principal focus of science teaching in upper key stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They should do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. At upper key stage 2, they should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They should also begin to recognise that scientific ideas change and develop over time. They should select the most appropriate ways to answer science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information. Pupils should draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings. Pupils should read, spell and pronounce scientific vocabulary correctly.</p>
Year 6		<p>Light and Dark How light travels</p>	<p>The Nature Library Characteristics of and classifying of micro-organisms, plants and animals</p>	<p>Body Pump Human circulatory system</p>	<p>Everything Changes! Reproduction and adaptation</p>	<p>Danger - Low Voltage? Circuits and switches</p>	<p>Body health Diet and exercise</p>	
KS3	<p>The principal focus of science teaching in key stage 3 is to develop a deeper understanding of a range of scientific ideas in the subject disciplines of biology, chemistry and physics. Pupils should begin to see the connections between these subject areas and become aware of some of the big ideas underpinning scientific knowledge and understanding. Examples of these big ideas are the links between structure and function in living organisms, the particulate model as the key to understanding the properties and interactions of matter in all its forms, and the resources and means of transfer of energy as key determinants of all of these interactions. They should be encouraged to relate scientific explanations to phenomena in the world around them and start to use modelling and abstract ideas to develop and evaluate explanations.</p> <p>Pupils should understand that science is about working objectively, modifying explanations to take account of new evidence and ideas and subjecting results to peer review. Pupils should decide on the appropriate type of scientific enquiry to undertake to answer their own questions and develop a deeper understanding of factors to be taken into account when collecting, recording and processing data. They should evaluate their results and identify further questions arising from them.</p> <p>'Working scientifically' is described separately at the beginning of the programme of study, but must always be taught through and clearly related to substantive science content in the programme of study. Teachers should feel free to choose examples that serve a variety of purposes, from showing how scientific ideas have developed historically to reflecting modern developments in science. Pupils should develop their use of scientific vocabulary, including the use of scientific nomenclature and units and mathematical representations.</p> <p>Working scientifically Through the content across all three disciplines, pupils should be taught to:</p> <p><i>Scientific attitudes</i></p> <ul style="list-style-type: none"> pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review evaluate risks 				<p><i>Experimental skills and investigations</i></p> <ul style="list-style-type: none"> ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience make predictions using scientific knowledge and understanding, select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements apply sampling techniques <p><i>Analysis and evaluation</i></p> <ul style="list-style-type: none"> apply mathematical concepts and calculate results present observations and data using appropriate methods, including tables and graphs interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions present reasoned explanations, including explaining data in relation to predictions and hypotheses evaluate data, showing awareness of potential sources of random and systematic error identify further questions arising from their results <p><i>Measurement</i></p> <ul style="list-style-type: none"> understand and use SI units and IUPAC (International Union of Pure and Applied Chemistry) chemical nomenclature use and derive simple equations and carry out appropriate calculations undertake basic data analysis including simple statistical techniques 			