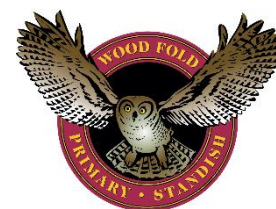




Working Scientifically Progression



	EYFS	KS1	LKS2	UKS2
<p>PLAN Ask questions, make predictions, decide on the method and equipment. Recognise enquiry types.</p>	<p>Listen attentively and respond to what they hear with relevant questions.</p> <ul style="list-style-type: none"> - While exploring, the children ask 'I wonder...' questions. - With support, the children develop their ideas for answering their questions. 	<p>Ask simple questions and recognise that they can be answered in different ways.</p> <ul style="list-style-type: none"> - Explore the world around them and raise their own questions. Where appropriate, they answer these questions. - Answer questions developed with the teacher through a scenario. - Plan how to use the resources provided to answer the questions using different types of enquiry and recognise ways in which they might answer scientific questions. 	<p>Ask relevant questions and use different types of scientific enquiries to answer them.</p> <ul style="list-style-type: none"> - Children to consider their prior knowledge when asking questions and raise their own questions about the world around them. Independently use a range of question stems. Where appropriate, they answer these questions. - Given a range of resources, the children make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions, including using secondary sources. <p>Set up simple practical enquiries, comparative and fair tests.</p> <ul style="list-style-type: none"> - Recognise when a simple fair test is necessary and help decide how to set it up. - They follow their plan to carry out: observations and tests to classify; comparative and simple fair tests; observations over time; and pattern seeking. - Help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used. 	<p>Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</p> <ul style="list-style-type: none"> - Explore ideas and raise different kinds of scientific questions. - Select and plan the most appropriate type of scientific enquiry to use to answer scientific questions and justify their choices. - Recognise when and how to set up comparative and fair tests and explain when variables need to be controlled and why. - The children select from a range of practical resources to gather evidence to answer their questions. - Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact.
<p>DO</p>	<p>Show an ability to follow instructions involving several ideas or actions.</p>	<p>Observe closely, using simple equipment.</p>	<p>Make systematic and careful observations and, where appropriate, take accurate</p>	<p>Take measurements, using a range of scientific equipment, with increasing accuracy</p>

<p>Carry out an enquiry using equipment</p>	<ul style="list-style-type: none"> - Explore the natural world and made world around them using their senses, describing what they see, hear, and feel whilst outside. <p>Be confident to try new activities.</p> <ul style="list-style-type: none"> - Show resilience and perseverance in the face of challenge. (Personal, social and emotional development) <p>Use a range of small tools competently, safely and confidently.</p> <p>Safely use and explore a variety of materials, tools and techniques.</p> <ul style="list-style-type: none"> - The children use magnifying glasses to make observations and smaller pieces of equipment such as syringes and pipettes. -With support, make comparisons and test things out to make comparisons using non-standard measures e.g. building blocks and beakers. -While playing and exploring, the children, try out using resources to answer a question. - They identify and name objects by matching them with pictures. - The children sort and group objects, sometimes using their own criteria. 	<ul style="list-style-type: none"> - Make careful observations to support identification, comparison and noticing change over time. - Take and use simple measurements by comparison then using non-standard units. Use equipment including the senses, hand lenses and egg timers to gather data, carry out simple tests and record simple data. <p>Perform simple tests.</p> <ul style="list-style-type: none"> - Experience different types of scientific enquiry, including practical activities and use resources provided to gather evidence to answer questions. <p>Identify and classify.</p> <ul style="list-style-type: none"> - Use observations of simple features to compare objects, materials and living things. - With help decide how to sort and group these living things. -Use simple secondary sources (such as identification sheets) to name living things. 	<p>measurements using standard units, use a range of equipment, including thermometers and data loggers.</p> <ul style="list-style-type: none"> - The children collect data from their own careful observations and measurements using notes and simple tables. They use standard units for their measurements. -They use a range of equipment, including data loggers, for measuring length, time, temperature and capacity. 	<p>and precision, taking repeat readings when appropriate.</p> <ul style="list-style-type: none"> - Choose the most appropriate equipment to make measurements and give the most precise results and explain how to use it accurately. - Make their own decisions about what observations to make, what measurements to use and how long to make them for, and whether to repeat them. - The children select measuring equipment to give the most precise results e.g. ruler, tape measure or trundle wheel, force meter with a suitable scale. - During an enquiry, they make decisions e.g. whether they need to: take repeat readings (fair testing); increase the sample size (pattern seeking); adjust the observation period and frequency (observing over time); or check further secondary sources (researching); in order to get accurate data (closer to the true value)
<p>RECORD Use drawings, tables or graphs to note observations and measurements</p>	<p>Explore the natural world around them, making observations and drawing pictures of animals and plants.</p> <ul style="list-style-type: none"> - The children sometimes draw and write simple labels to record their observations. - With support, they record their observations and comparisons e.g. using simple prepared tables, taking 	<p>Gather and record data to help in answering questions.</p> <ul style="list-style-type: none"> - With help they should record and communicate their findings in a range of ways and begin to use simple scientific language. - Record observations e.g. using photographs, videos, drawings, labelled diagrams or in writing. 	<p>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, keys, bar charts, and tables.</p> <ul style="list-style-type: none"> - Talk about criteria for grouping, sorting and classifying; and use simple keys. 	<p>Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</p> <ul style="list-style-type: none"> - Use and develop keys and other information records to identify, classify and describe living things and materials and identify patterns that might be found in the natural environment.

	<p>photographs, using sorting rings and boxes.</p>	<ul style="list-style-type: none"> - Record measurements e.g. using prepared tables, pictograms, tally charts and block graphs. - Classify using simple prepared tables, sorting hoops, venn diagrams and tally charts. 	<ul style="list-style-type: none"> - Children to help make decisions about how to record, present and analyse data including presenting the same data in different ways. - They record their observation e.g. using photographs, videos, pictures, labelled diagrams or writing. They record their measurements e.g. using tables, tally charts and bar charts (given templates, if required, to which they can add headings). They record classifications e.g. using tables, Venn diagrams, Carroll diagrams. 	<ul style="list-style-type: none"> - The children will decide how to record data from a choice of familiar approaches and how to present their evidence. - Record observations e.g. using annotated photographs, videos, labelled diagrams, observational drawings, labelled scientific diagrams or writing. - Record measurements e.g. using tables, tally charts, bar charts, line graphs and scatter graphs. - Record classifications e.g. using tables, Venn diagrams, Carroll diagrams and classification keys. - Children present the same data in different ways in order to help with answering the question.
<p>REVIEW Interpret, communicate and evaluate results</p>	<p>Participate in discussions, offering their own ideas, using recently introduced vocabulary.</p> <p>Offer explanations for why things might happen.</p> <p>Express their ideas and feelings about their experiences.</p> <p>Know some similarities and differences, drawing on their experiences.</p> <ul style="list-style-type: none"> - Talk about what they have observed. - The children demonstrate and talk about what they have found out. - They sometimes talk about what they have found out from secondary sources, including non-fiction texts. - The children make direct comparisons or use or use their recorded 	<p>Use their observations and ideas to suggest answers to questions.</p> <ul style="list-style-type: none"> - Use experiences of the world around them to suggest appropriate answers to questions. - Ask people questions and use simple secondary sources to find answers. - With guidance, begin to notice patterns and relationships. - Talk about what they have found out and how they found it out. 	<p>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p> <p>Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</p> <ul style="list-style-type: none"> - They draw conclusions based on their evidence and current subject knowledge. - With support, they should identify and ask new questions arising from the data, making predictions for new values within or beyond the data they have collected and finding ways of improving what they have already done. - Children use their evidence to suggest values for different items tested using the same method e.g. the distance 	<p>Use test results to make predictions to set up further comparative and fair tests.</p> <ul style="list-style-type: none"> - Children use the scientific knowledge gained from enquiry work to make predictions. They can investigate using comparative and fair tests and use their results to identify when further tests and observations might be needed. <p>Report and present 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> <ul style="list-style-type: none"> - Look for causal relationships in their data and identify evidence that refutes or supports their ideas. - Use relevant scientific language and illustrations to discuss, communicate

	<p>observations to communicate what they have found out and answer the question, where appropriate.</p>		<p>travelled by a car on an additional surface.</p> <ul style="list-style-type: none"> - Use relevant scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences. <p>Identify differences, similarities or changes related to simple scientific ideas and processes.</p> <ul style="list-style-type: none"> - Children to look for changes, patterns, similarities, and differences in their data in order to draw simple conclusions and answer questions. <p>Use straightforward scientific evidence to answer questions or to support their findings.</p> <ul style="list-style-type: none"> - Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations. - Children answer questions based on observations they have made, measurements they have taken or information they have gained from secondary sources. 	<p>and justify their scientific ideas.</p> <ul style="list-style-type: none"> - Identify results that do not fit the overall pattern; and explain their findings using their subject knowledge. - They evaluate, for example, the choice of method used, the control of variables, the precision and accuracy of measurements and the credibility of secondary sources used. <p>Identify scientific evidence that has been used to support or refute ideas or arguments.</p> <ul style="list-style-type: none"> - Children answer their own and others' questions based on observations they have made, measurements they have taken or information they have gained from secondary sources. When doing this, they discuss whether other evidence e.g. from other groups, secondary sources and their scientific understanding, supports or refutes their answer. - They talk about how their scientific ideas have developed over time.