

Working Scientifically at Wortham Primary School – Progression of Skills



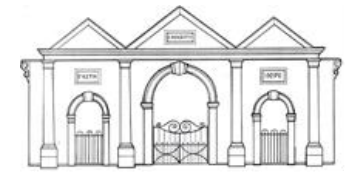
Working Scientifically	Bumblebees (Years R & 1)	Hedgehogs (Years 2 & 3)	Barn Owls (Years 4 & 5)	Otters (Year 6)
<p>Asking Questions and Planning Investigations</p>	<p>Ask simple questions and recognise that they can be answered in different ways.</p> <p>Children explore the world around them and develop their ability to ask questions. Children answer questions with support from the teacher and are introduced and encouraged to use scientific vocabulary. Children begin to plan how to use the resources available to answer questions.</p>	<p>Ask relevant questions and use different types of scientific enquiry to answer them.</p> <p>Children begin to make decisions about how they might answer a research question, with some scaffolding from the teacher. Children use sentence stems and appropriate vocabulary increasingly independently. Using resources children begin to decide how they might answer a question.</p>	<p>Raise their own relevant questions using previous knowledge and use different types of scientific enquiry to answer them.</p> <p>Children consider their prior knowledge when asking questions. They independently use sentences and scientific vocabulary. Children should answer questions posed by the teacher. Children begin to make their own decisions about the most appropriate type of scientific enquiry to answer the questions raised. Children identify when secondary sources can be used to answer questions that cannot be answered through practical work.</p>	<p>Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</p> <p>Children raise their own scientific questions. Using a wide range of resources, the children decide for themselves how to gather evidence to answer their scientific questions. They can choose a type of enquiry to carry out and justify their choice. Children identify how secondary sources can be used to answer questions that cannot be answered through practical work.</p>
<p>Measuring and Recording</p>	<p>Observe closely, using simple equipment.</p> <p>Children make careful observations as they explore the world around them. With support, they identify, compare and notice change. They use their senses and simple equipment (e.g. magnifying glasses) to make their observations.</p>	<p>Make careful observations and accurate measurements. Using standard units, where appropriate, using a range of equipment.</p> <p>Children continue to make careful observations. They use a range of equipment appropriately and they use standard units for the measurements.</p>	<p>Take accurate measurements using standard units. Using an increasing range of equipment, such as thermometers and data loggers.</p> <p>They use a range of equipment for measuring length, time, temperature and capacity. They use standard units for the measurements. Children collect and record data from their own measurements and</p>	<p>Take measurements using a range of scientific equipment, with increasing accuracy and precision, taking repeated readings when appropriate.</p> <p>Children select measuring equipment to give the most precise results, e.g. ruler, tape measure or trundle wheel. They make decisions e.g. whether they need to take repeat readings (fair</p>

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	<p>Children begin to record simple data: using photographs, drawings, labelled diagrams.</p> <p>They record measurements: using prepared tables, tally charts.</p> <p>They classify using simple prepared tables and sorting hoops.</p>	<p>Children collect and record data from their own measurements and observations in a variety of ways: photographs, notes, bar charts and tables, standard units, drawings, labelled diagrams.</p> <p>They record classifications using venn diagrams.</p> <p>Children are supported to record data in different ways to answer the same question.</p>	<p>observations in a variety of ways: notes, bar charts and tables, standard units, drawings, labelled diagrams, keys.</p> <p>Children begin to record data in different ways to answer the same question.</p> <p>Children help to make decisions about how to analyse this data.</p>	<p>testing), increase sample size (pattern seeking), adjust observation period and frequency (observing over time) or use secondary resources (researching).</p> <p>Children decide how to record data and results of increasing complexity from a choice of familiar approaches: scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</p>
Concluding	<p>Use their observations and ideas to suggest answers to questions.</p> <p>Children talk about what they have found out and how they found it out. With support, children begin to record and communicate in a variety of ways and begin to use simple scientific vocabulary.</p>	<p>Use scientific evidence to answer questions. With support identify difference and similarities, patterns and change.</p> <p>With support, children look for changes, patterns, similarities and differences in their data in order to draw simple conclusions. Children can communicate their findings, both orally and written using key scientific vocabulary.</p>	<p>Use scientific evidence to answer questions. Identify difference and similarities, patterns and change. Use results to draw simple conclusions and make predictions.</p> <p>Children should look for changes, patterns, similarities and differences in their data in order to answer questions and draw simple conclusions. Children should use relevant simple scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences, including oral and written explanations, displays or presentations of results and conclusions.</p>	<p>Identify scientific evidence that has been used to support or refute ideas or arguments. Report and present findings, including conclusions, casual relationships and explanations.</p> <p>Children will identify scientific evidence that has been used to support or refute ideas or arguments. Children should use relevant simple scientific language and illustrations to discuss, communicate and justify their scientific ideas, use oral and written forms such as displays and other presentations to report conclusions, casual relationships and explanations of degree of trust in results.</p>
Evaluation		<p>Use results to draw conclusions and make predictions based on these. Identify new questions arising from the findings.</p>	<p>Use results to draw conclusions, make predictions, suggest improvements and raise further questions.</p>	<p>Use test results to make predictions to set up further comparative and fair tests.</p> <p>Children use their results to make predictions and identify when further</p>

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		With support, children can begin to identify new questions arising from the data and consider ways that we might be able to answer these.	Children should identify new questions arising from the data, making predictions for new values within or beyond the data they have collected and find ways of improving what they have already done.	observations, comparative and fair tests might be needed.
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