

# Working Scientifically Progression Document



| Nursery  | Reception   | Year 1  | Year 2  | Year 3   | Year 4  | Year 5  | Year 6   |
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| <p>Use discussion with adults to think about what they can see and what is happening. Discuss with adults, who support children to think of an Is it...? question.</p> | <p>Use discussion with adults to start to question what is happening/what might change? Begin to ask their own Is it...? questions.</p> | <p>Asking simple questions and recognising that they can be answered in different ways. Is it...? Will it...? Can it...? Questions to compare similarities and differences.</p> | <p>Asking simple questions and recognising that they can be answered in different ways. Additional to Year 1 How does it...? Could it...? Questions to compare similarities and differences. Supported questions to start to consider cause and effect. What if...? If we...will it...?</p> | <p>Asking relevant questions and using different types of scientific enquiries to answer them. Asking unit based questions using the question stems. What if...? Where does...? Who can...? How does...? Is there...? With support, begin to identify which of the 5 enquiry types to use.</p> | <p>Asking relevant questions and using different types of scientific enquiries to answer them. Asking questions; some independently and some using the question stems. I wonder whether...? Can we find a way to...? What happens when...? Why does...? Begin to identify they enquiry type most suitable to find the answer.</p> | <p>Planning different types of scientific enquiries to answer questions, <i>including recognising and controlling variables where necessary.</i> Turn an independent simple question – do all planets have the same year? Into a scientific question – Does the distance of a planet change the time it takes to orbit the Sun?</p> | <p>Planning different types of scientific enquiries to answer questions, <i>including recognising and controlling variables where necessary.</i> Independently create a scientific question.</p> |
|  |   | <p><b>Animals including humans</b><br/><b>Everyday materials</b><br/><b>Seasonal changes</b></p>  | <p><b>Plants</b><br/><b>Animals Including Humans</b><br/><b>Everyday materials</b></p>  | <p><b>Plants</b><br/><b>Rocks</b><br/><b>Light</b><br/><b>Forces</b><br/><b>Animals including humans</b></p>   | <p><b>Animals including humans</b><br/><b>States of matter</b><br/><b>Sound</b><br/><b>Electricity</b></p>  | <p><b>Living things and their habitats</b><br/><b>Animals including humans</b><br/><b>Properties and changes of materials.</b><br/><b>Earth and Space Forces</b></p>  | <p><b>Animals including Humans</b><br/><b>Evolution &amp; Inheritance</b><br/><b>Light</b><br/><b>Electricity</b></p>  |
| <p>Introduce magnifying glasses. How does it change what you see?</p>  | <p>To choose use of magnifying glasses appropriately. Chooses a magnifying glass to</p>   | <p>Observing closely using simple equipment. Taking photos and using magnifying glasses. Stating</p>  | <p>Observing closely using simple equipment. Additional to Year 1, use measurements and</p>   | <p>Making systematic and careful observations and, where appropriate, taking accurate measurements</p>   | <p>Making systematic and careful observations and, where appropriate, taking accurate measurements</p>  | <p>Taking measurements, using a range of scientific equipment, with increasing</p>  | <p>Taking measurements, using a range of scientific equipment, with increasing</p>   |

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|   | look at smaller detail.  | what they can see, look at colours and shapes. Make comparisons.   | any other collected data. Additional to Year 1, use measurements using non-standard units and comparisons.                           | using standard units, using a range of equipment, including thermometers and data loggers. Measuring in cms and data loggers.   | using standard units, using a range of equipment, including thermometers and data loggers. In addition to Year 3, measuring temperature using thermometers. | accuracy and precision, taking repeat readings when appropriate. Using force metres and standard units of measure to mms and rounding to the nearest second. With support, decide when repeated measurements are required. | accuracy and precision, taking repeat readings when appropriate. Select measuring equipment to give the most precise results e.g. ruler, tape measure or trundle wheel, force meter with a suitable scale. Decide when repeated measurements are required. |
|   |  | Plants<br>Everyday materials<br>Seasonal changes   | Living things and their habitats<br>Animals including humans<br>Uses of everyday materials<br>Plants                                 | Forces and magnets<br>Light<br>Rocks<br>Plants  | Living Things and their habitats<br>Animals including humans<br>Sound<br>States of matter<br>Electricity  | Properties and changes of materials<br>Forces  | Electricity<br>Light   |
| Work in small groups to perform provided simple tests with adults. With adult support complete a simple test provided by an adult and discuss what/how they are testing and observing | Perform simple tests with adults from pupil - adult conversations discussing their observations. Complete tests planned for through adult discussions. Discuss what they are testing, how and why and talk about their observations. | Performing simple tests<br>Use practical resources provided to gather evidence to answer teachers adaption of children's simple questions to provide tests to classify; comparative tests; pattern seeking enquiries; and make observations over time. | Performing simple tests<br>Additional to Year 1, begin to recognise the benefits of resources provided and use children's questions. | Setting up simple practical enquiries, comparative and fair tests<br>Select from a range of practical resources to gather evidence to answer questions generated by themselves or the teacher. Gather a range of possible variables through class discussion. | Setting up simple practical enquiries, comparative and fair tests<br>Addition to Year 3, more questions to be child generated.                              | Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Independently and in pairs, choose a variable for their chosen enquiry.             | Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Independently and in pairs chose up to 2 variables and decide on the appropriate enquiry to complete.               |

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|   |  |   |   | Pupils choose 1 variable.  |  |   |   |
|   |  | Everyday materials<br>Animals including humans  | Everyday materials<br>Animals including humans<br>Plants  | Plants<br>Animals including humans<br>Rocks<br>Light<br>Forces including magnets | Living Things and their habitats<br>Animals including humans<br>Sound<br>States of matter<br>Electricity | Living things and their habitats<br>Animals including humans<br>Properties and changes of materials.<br>Earth and Space<br>Forces | Living things and their habitats<br>Animals including Humans<br>Evolution & Inheritance<br>Light<br>Electricity |
| With support, group pictures/objects to given criteria.<br>Use 2 columns or 2 sorting rings | Group simple pictures/objects to given criteria.<br>Without adult support, use 2 columns or 2 sorting rings. | Identifying and classifying<br>Observe and test to compare objects, materials and living things.<br>Sort and group things.<br>Choose 2 criteria.<br>Use ID sheets to identify plants. | Identifying and classifying<br>Additional to Year 1, sort and group these things, choose up to 3 criteria for sorting.<br>Use simple secondary sources (such as identification sheets) to name living things.<br>Describe the characteristics they used to identify a living thing. |  |  |   |   |
|   |  | Animals including humans<br>Plants<br>Seasonal changes<br>Everyday materials  | Living things and their habitats<br>Animals including humans<br>Plants<br>Uses of everyday materials  |  |  |   |   |
| Discuss observations.<br>Through adult questioning, begin to identify                       | Discuss and draw observations.<br>Begin to identify similarities independently                               | Gathering and recording data to help in answering questions   | Gathering and recording data to help in answering questions   | Gathering, recording, classifying and presenting data in a variety of ways to    | Gathering, recording, classifying and presenting data in a variety of ways to                            | Recording data and results of increasing complexity using scientific diagrams   | Recording data and results of increasing complexity using scientific diagrams                                   |

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| similarities and differences.               |   | Record observations using photographs, drawings & labelled diagrams. Record measurements using prepared tables in non-standard units. Classify using sorting rings. | Additional to Year 1, record observations using videos. Record measurements using pictograms, tally charts and block graphs. Classify using simple prepared tables. | <b>help in answering questions</b><br>Sometimes decide how to record and present evidence. Record their observations using photographs, videos, pictures, labelled diagrams and writing. Record measurements using tables, tally charts and bar charts from templates with headings. Record classifications using tables & Venn diagrams. | <b>help in answering questions</b><br>Additional to Year 3, record measurements using tables, tally charts and bar charts from templates without headings. Record classifications using Carroll diagrams. Support given to present the same data in different ways in order to help with answering the question. | <b>and labels, classification keys, tables, scatter graphs, bar and line graphs</b><br>Independently & in pairs choose a suitable type of table for their enquiries. Create labelled diagrams to support conclusions and on whiteboards during recap. Independently create bar graphs recognising the required increments. With support, create line and scatter graphs. Support provided to choose suitable increments, plot and interpret results. | <b>and labels, classification keys, tables, scatter graphs, bar and line graphs</b><br>Additional to Year 5 – Independently & in pairs choose suitable graphs between bar, line or scatter graphs. Independently & in pairs, decide on suitable increments, plot accurately and interpret results. |
|   |   | <b>Animals including humans<br/>Plants<br/>Seasonal changes<br/>Everyday materials</b>  | <b>Living things and their habitats<br/>Animals including humans<br/>Plants<br/>Uses of everyday materials</b>  | <b>Plants<br/>Rocks<br/>Light<br/>Forces<br/>Animals including humans</b>   | <b>Living Things and their habitats<br/>Animals including humans<br/>Sound<br/>States of matter<br/>Electricity</b>  | <b>Living things and their habitats<br/>Animals including humans<br/>Properties and changes of materials.<br/>Earth and Space<br/>Forces</b>   | <b>Animals including Humans<br/>Evolution &amp; Inheritance<br/>Light<br/>Electricity</b>  |
| Use their observations to answer questions. | Use their observations to answer questions. | Using their observations and ideas to suggest answers to questions  | Using their observations and ideas to suggest answers to questions  | Recording findings using simple scientific language, drawings, labelled   | Recording findings using simple scientific language, drawings, labelled  |  |  |

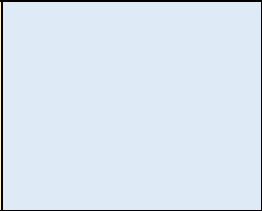
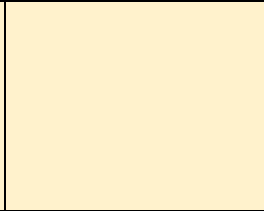
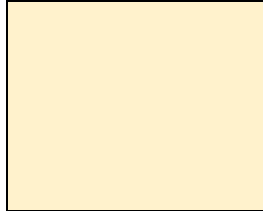
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| <p>Adults to ask about their observations.<br/>It can...</p> | <p>Start to answer the questions they generated. It can...<br/>It changed when...<br/>The biggest....</p> | <p>It can...<br/>It will...<br/>The biggest...<br/>The smallest...<br/>The best...<br/>The worst...</p>            | <p>I think...because...<br/>The biggest is...because<br/>The smallest is...because<br/>The best is...because...<br/>The worst is...because...</p> | <p>diagrams, keys, bar charts, and tables<br/>Year 3-unit vocabulary.<br/>Use photographs, videos, pictures, labelled diagrams and writing.<br/>Use tables, tally charts and bar charts from templates with headings.<br/>use tables &amp; Venn diagrams.</p> | <p>diagrams, keys, bar charts, and tables<br/>Additional to Year 3<br/>Year 4 unit vocabulary.<br/>- Use tables, tally charts and bar charts from templates without headings.<br/>Use Carroll diagrams.<br/>Support given to present the same data in different ways in order to help with answering the question.</p> |   |  |
|  |   | <p><b>Animals including humans</b><br/><b>Plants</b><br/><b>Seasonal changes</b><br/><b>Everyday materials</b></p> | <p><b>Animals including humans</b><br/><b>Plants</b><br/><b>Uses of everyday materials</b></p>  | <p><b>Plants</b><br/><b>Rocks</b><br/><b>Light</b><br/><b>Forces</b><br/><b>Animals including humans</b></p>  | <p><b>Living Things and their habitats</b><br/><b>Animals including humans</b><br/><b>Sound</b><br/><b>States of matter</b><br/><b>Electricity</b></p>   |   |  |
|  |   |  |   | <p>Using straightforward scientific evidence to answer questions or to support their findings.<br/>With support, children use at least 1 piece of evidence from their findings to support their answer.</p>   | <p>Using straightforward scientific evidence to answer questions or to support their findings.<br/>Additional to Year 3, children complete independently &amp; in pairs.</p>   | <p>Identifying scientific evidence that has been used to support or refute ideas or arguments.<br/>With support, use their scientific question to create an answer and compare 2 pieces of data as evidence to identify the effect of the variable.</p> | <p>Identifying scientific evidence that has been used to support or refute ideas or arguments<br/>Independently use their scientific question to create an answer and compare 2 pieces of data as evidence to identify the effect of the variable.</p> |

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|  |  |  |  | <b>Plants</b><br><b>Rocks</b><br><b>Light</b><br><b>Forces</b><br><b>Animals including humans</b>  | <b>Living Things and their habitats</b><br><b>Animals including humans</b><br><b>Sound</b><br><b>States of matter</b><br><b>Electricity</b>  | <b>Living things and their habitats</b><br><b>Animals including humans</b><br><b>Properties and changes of materials.</b><br><b>Earth and Space</b><br><b>Forces</b>   | <b>Living things and their habitats</b><br><b>Animals including Humans</b><br><b>Evolution &amp; Inheritance</b><br><b>Light</b><br><b>Electricity</b>   |
|  |  |  |  | Identifying differences, similarities or changes related to simple scientific ideas and processes.<br>With support, interpret their data or given data to generate simple comparative statements based on their evidence.<br>They begin to identify naturally occurring patterns and causal relationships e.g. the smoother the material means there is less friction. | Identifying differences, similarities or changes related to simple scientific ideas and processes<br>Begin to independently interpret their data or given data to generate simple comparative statements based on their evidence.<br>Identify naturally occurring patterns and causal relationships e.g. the greater the force, the louder the volume. | 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<br>Use conclusion layout support to present their findings.<br>Have at least 2 written conclusions, media presentation, labelled diagrams,<br>With support oral explanations use scientific vocabulary and explain causal relationships e.g. the hotter the water, the quicker the solid dissolves. | 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<br>Independently and in pairs, present their findings.<br>Have at least 2 written conclusions, media presentation, labelled diagrams,<br>Oral explanations use scientific vocabulary and explain causal relationships e.g. the birds with pointy beaks survive better as the shape allows |

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|  |  |  |  |   |   |   | them to eat the seeds easily.  |
|  |  |  |  | <b>Rocks</b><br><b>Light</b><br><b>Forces and magnets</b>   | <b>Sound</b><br><b>States of matter</b><br><b>Electricity</b>   | <b>Living things and their habitats</b><br><b>Animals including humans</b><br><b>Properties and changes of materials.</b><br><b>Earth and Space</b><br><b>Forces</b>  | <b>Living things and their habitats</b><br><b>Animals including Humans</b><br><b>Evolution &amp; Inheritance</b><br><b>Light</b><br><b>Electricity</b>   |
|  |  |  |  | <p>Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</p> <p>With support, use at least 1 piece of data from their findings to support their answer.</p> <p>In groups and whole class discussions, use sentence stems.</p> <p>Use their findings to make predictions for new values and further questions.</p> <p>Use group discussions, to identify and suggest improvements.</p> | <p>Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</p> <p>Independently and in pairs, use at least 1 piece of data from their findings to support their answer.</p> <p>Independently and in pairs, use sentence stems.</p> <p>Use their findings to make predictions for new values and further questions.</p> <p>Use paired discussions, to identify and suggest improvements.</p> | <p>Using test results to make predictions to set up further comparative and fair tests</p> <p>With support and in pairs, use their findings to create further scientific questions, using their data to support a prediction.</p> | <p>Using test results to make predictions to set up further comparative and fair tests</p> <p>Independently and in pairs, use their findings to create further scientific questions, using their data to support a prediction.</p> |
|  |  |  |  | <b>Rocks</b><br><b>Light</b><br><b>Forces and magnets</b>   | <b>Sound</b><br><b>States of matter</b><br><b>Electricity</b>   | <b>Properties and changes of materials.</b><br><b>Forces</b>  | <b>Animals including Humans</b><br><b>Light</b>  |

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|  |  |  |  |   |  |  | <b>Electricity</b> |
|  |  |  |  | <p>Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</p> <p>Use conclusion supported stems and templates for written conclusions<br/>- use at least 1 piece of data from their findings to support their answer. Produce at least 2 written conclusions.</p> <p>Use conclusion supported stems and templates for, at least 2, oral presentations with to the class or recorded on seesaw - use at least 1 piece of data from their findings to support their answer.</p> <p>With support, use their labelled diagrams/graphs to support their presentation.</p> | <p>Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</p> <p>Independently use conclusion stems for written conclusions - use at least 1 piece of data from their findings to support their answer. Produce at least 2 written conclusions. Independently use conclusion stems for, at least 2, oral presentations with to the class or recorded on seesaw - use at least 1 piece of data from their findings to support their answer.</p> <p>Use their labelled diagrams/graphs to support their presentation.</p> |  |                    |





Plants  
Rocks  
Light  
Forces  
Animals including  
humans

Living Things and their  
habitats  
Animals including  
humans  
Sound  
States of matter  
Electricity

