

Progression of Science Skills and Vocabulary in Winterbourne Primary

End of EYFS	End of Year 1	End of Year 2	End of Year 3	End of Year 4	End of Year 5	End of Year 6
Asking and Answering Questions						
<p>What, Why, How, When, where, which one</p> <p>question, ask, answer</p>	<p>Use everyday language/begin to use simple scientific words to ask or answer a scientific question.</p> <p>I can ask a few simple questions about the world around us.</p> <p>I wonder, what if, maybe (creative lead-ins)</p>	<p>Suggest ideas, ask simple questions and know that they can be answered/ investigated in different ways including simple secondary sources, such as books and video clips.</p> <p>I can ask simple questions about the world around us.</p> <p>Let's investigate, explore</p>	<p>Use ideas to pose questions, independently, about the world around them.</p> <p>I can ask some relevant questions about the world around us.</p> <p>which, change, if, What happens when ...</p>	<p>Suggest relevant questions and know that they could be answered in a variety of ways, including using secondary sources such as ICT. Answer questions using straight forward scientific evidence.</p> <p>I can ask relevant questions about the world around us.</p> <p>Does affect</p>	<p>Raise different types of scientific questions, and hypotheses.</p> <p>I am beginning to explore ideas and ask my own questions about scientific phenomena.</p> <p>How does changing affect</p>	<p>Pose/select the most appropriate line of enquiry to investigate scientific questions.</p> <p>I can explore ideas and ask my own questions about scientific phenomena.</p> <p>How does changing affect</p>
Planning and Predicting						
	<p>Listen to and test ideas suggested to them.</p> <p>Say what they think will happen.</p> <p>I can say what I think will happen in an investigation.</p> <p>I think ...</p> <p>Identify,</p>	<p>Begin to put forward ideas about how to answer a question.</p> <p>With help, use different types of enquiry to answer a question.</p> <p>Begin to recognise when a test or comparison is unfair.</p> <p>Say what they think will happen, using basic reasoning.</p> <p>Suggest how data could be collected.</p> <p>When directed, I can use different types of</p>	<p>Put forward ideas about how to find the answers to questions.</p> <p>Recognise the need to collect data to answer questions.</p> <p>With help, begin to realise that scientific ideas are based on evidence.</p> <p>Carry out a fair test with support.</p> <p>Recognise and explain why it is a fair test.</p> <p>Predict what they think will happen, giving a reason based</p>	<p>Decide on an appropriate approach to answer questions.</p> <p>Understand that scientific ideas are based on evidence.</p> <p>Describe which factors they are varying and which will remain the same and say why.</p> <p>Predict what they think will happen, using basic scientific knowledge.</p> <p>I am beginning to decide which type of enquiry is best to answer my question.</p>	<p>With some support, plan a range of science enquiries, including comparative and fair tests.*</p> <p>Recognise the key factors to be considered in carrying out a fair test.</p> <p>Give a hypothesis, using reasoning about the science involved.</p> <p>Begin to recognise scientific ideas change and develop over time.</p> <p>I am beginning to plan different types of</p>	<p>Select and plan the most suitable line of enquiry, explaining which variables need to be controlled and why, in a variety of comparative and fair tests.</p> <p>Give a hypothesis, showing a developing understanding of the scientific concept.</p> <p>Begin to recognise more abstract ideas and begin to recognise how these ideas help them to understand</p>

		<p>enquiry to answer questions. I can say what I think will happen, using 'because'.</p> <p>Perhaps</p> <p>Identify, observe, classify, record, diagram, chart, data, compare contrast describe</p>	<p>on everyday experiences. I can use some different types of scientific enquiry to answer questions. I can predict what I think might happen using my past experiences.</p> <p>I predict that ... because</p> <p>scientific enquiry, comparative and fair test, systematic, accurate, explanation, conclude, predict, evidence, construct and interpret, observe, compare, vary, relevant, test, variables</p>	<p>I can predict what I think will happen, supporting my idea with some scientific reasoning.</p> <p>In a fair test, I predict that... because</p> <p>scientific enquiry, comparative and fair test, systematic, accurate, explanation, conclude, predict, evidence, construct and interpret, controlled variables</p>	<p>scientific enquiry to answer questions. I am beginning to decide which variables to control. I can hypothesise using some scientific reasoning.</p> <p>I hypothesise that ... because ...</p> <p>Hypothesis, variables, precision, repeat readings, causal relationships, patterns, systematic, quantitative measurements, independent variable, controlled variables</p>	<p>how the world operates. Use the results of an investigation to plan a new one or test further.</p> <p>I can plan different types of scientific enquiry to answer questions. I can decide which variables to control. I can hypothesise using scientific reasoning.</p> <p>I hypothesise that ... because ...</p> <p>Evidence would suggest ...</p> <p>Hypothesis, variables, precision, repeat readings, causal relationships, patterns, systematic, quantitative measurements, independent variable, controlled variables, dependent variable</p>
Investigating						
	<p>Follow instructions to complete a simple test individually or in a group. To begin to discuss my ideas about how to find things out.</p>	<p>Do things in the correct order when performing a simple test and begin to recognise when something is unfair.</p>	<p>With help, conduct a fair test and begin to understand why it is fair. Begin to think of more than one controlled variable.*</p>	<p>When investigating, show an understanding of how to vary one factor while keeping others the same. Identify an independent variable and some controlled variables.*</p>	<p>Begin to recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why.</p>	<p>Recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why.</p>

	<p>I can begin to perform simple tests. I can begin to discuss my ideas. I think we should ... Record, diagram, chart, data, compare, contrast, describe</p>	<p>Discuss their ideas about how to find things out. I can perform simple tests. I can discuss my ideas. I think we should ... We could ... Perhaps ... Observe, Record, diagram, chart, data, compare, contrast, describe</p>	<p>I can set up some simple practical enquiries. I am beginning to help decide which variables to keep the same and which to change. Fair test, the same, change, variables Fair test, comparative test, accurate, collect evidence, predict, vary, test, variables</p>	<p>I can set up simple practical enquiries. Including comparative and fair tests. I can help decide which variables to keep the same and which to change. Vary, fair test, independent variable, controlled variables Fair test, comparative test, accurate, collect evidence, predict, vary, test, variables, controlled variables</p>	<p>Begin to decide when it is appropriate to do a fair test. With help, identify independent, dependent and controlled variables.* Begin to use test results to make predictions to set up further comparative and fair tests. Begin to suggest improvements to their method and give reasons. I can sometimes set up a range of comparative and fair tests. I am beginning to explain which variables need to be controlled and why. I am beginning to suggest improvements to my test, giving reasons Independent variables, controlled variables, dependent variables, fair test, comparative test, improve Trust, reliability, quantitative measurements</p>	<p>With increasing independence, identify independent, dependent and controlled variables.* Use test results to make predictions to set up further comparative and fair tests. Suggest improvements to their method and give reasons. I can set up a range of comparative and fair tests. I can explain which variables need to be controlled and why. I can suggest improvements to my test, giving reasons. Independent variables, controlled variables, dependent variables, fair test, comparative test, improve Trust, reliability, quantitative measurements, support-refute, repeat readings,</p>
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					support-refute, repeat readings,	
Observing						
I saw	Observe objects, materials and living things using the senses. Communicate observations orally, in drawings, labelling, simple writing and using ICT To begin to say what happened in my investigation. I noticed observe,	Observe something closely and describe changes over time. With help, collect and record data. I can observe changes over time. I am beginning to notice patterns. I observed Identify, observe, record	Make decisions about what to observe during an investigation. Make relevant observations. Begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them. 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. I can make systematic and careful observations. I can look for patterns and relationships. systematic, accurate, observe, compare, relevant,	Make systematic and careful observations. Make a series of observations, comparisons and measurements adequate for the task. I can make systematic and careful observations. I can decide what to observe and how long to collect observations. I can look for patterns and relationships systematic, accurate, observe, compare, relevant,	Make a series of systematic and careful observations. Begin to make repeat observations and measurements I can decide what to observe, how long to observe for and whether to repeat them. repeat readings, causal relationships, , patterns, systematic, quantitative measurements, independent variable, controlled variables	Make their own decisions about which observations to make, using test results and observations to make predictions or set up further comparative or fair tests. Select and use information effectively Make enough measurements or observations for the required task I can decide what to observe, how long to observe for and whether to repeat them. repeat readings, causal relationships, , patterns, systematic, quantitative measurements, independent variable, controlled variables, dependent variables
Measuring						
	Use simple, nonstandard	Use simple equipment, such as	Learn to use some new equipment	Choose from a selection of equipment.	Select equipment independently.	Choose the most appropriate

	<p>measurements in a practical task.</p>	<p>hand lenses or egg timers to take measurements, make observations and carry out simple tests. Say what they are looking for and what they are measuring. Know how to use simple equipment safely. Begin to progress from non-standard units, reading mm, cm, m, ml, l, °C</p> <p>I can say what I am looking for and what I am measuring.</p> <p>I can measure with non-standard units and can begin to use simple standard units eg, mm, cm, m, ml, l, °C</p> <p>I can safely use simple equipment.</p> <p>mm, cm, m, ml, l, °C</p>	<p>appropriately (eg data loggers). Begin to see a pattern in results. Begin to choose from a selection of equipment. Begin to observe and measure accurately using standard units, including time in minutes and seconds.</p> <p>I can decide what to observe and how long to collect observations.</p> <p>I can take accurate measurements using standard units eg. mm, cm, m, ml, l, °C, seconds, minutes, I can decide which equipment to use and can use new equipment eg. data loggers.</p> <p>mm, cm, m, ml, l, °C Minutes, seconds</p>	<p>Observe and measure accurately using standard units.</p> <p>I can take accurate measurements using standard units eg. mm, cm, m, ml, l, °C, seconds, minutes, mm, cm, m, ml, l, °C Minutes, seconds</p>	<p>Begin to take accurate and precise measurements – N, g, kg, mm, cm, mins, seconds, cm²V, km/h, m per sec, m/ sec Graphs – pie, line</p> <p>I can take accurate and precise measurements using standard units N, g, kg, mm, cm, mins, seconds, cm²V, km/h, m per sec, m/ sec.</p> <p>I can select equipment on my own and can explain how to use it accurately.</p> <p>N, g, kg, mm, cm, mins, seconds, cm²V, km/h, m per sec, m/ sec.</p>	<p>equipment and explain how to use it accurately. Accurate and precise measurements – N, g, kg, mm, cm, mins, seconds, cm², V, km/h, m per sec, m/ sec Graphs – pie, line, bar (Year 6)</p> <p>I can make accurate and precise measurements.</p> <p>I can take accurate and precise measurements using standard units N, g, kg, mm, cm, mins, seconds, cm²V, km/h, m per sec, m/ sec.</p> <p>I can select equipment on my own and can explain how to use it accurately.</p> <p>N, g, kg, mm, cm, mins, seconds, cm², V, km/h, m per sec, m/ sec.</p>
Identifying and Classifying						
	<p>Sort and group objects, materials and living things, with help, according to simple observational features.</p>	<p>Decide, with help, how to group materials, living things and objects. Notice changes over time and begin to see patterns.</p>	<p>Talk about criteria for grouping, sorting and categorising, beginning to see patterns and relationships.</p>	<p>Identify similarities/ differences/changes when talking about scientific processes. Use and begin to create simple keys.</p>	<p>Use and develop keys to identify, classify and describe living things and materials.</p> <p>I am beginning to use keys and other information records</p>	<p>Identify and explain patterns seen in the natural environment.</p> <p>I can use keys and other information records to classify and describe living things,</p>

	<p>Begin to compare some living things. I can begin to identify a variety of objects, materials and living things. I can begin to compare, sort and group a range of objects, materials and living things. Compared, sorted, grouped Identify, observe, classify,</p>	<p>I can identify a variety of objects, materials and living things. I can compare, sort and group a range of objects, materials and living things Compared, sorted, grouped, classified Identify, observe, classify,</p>	<p>I am beginning to talk about and identify differences and similarities in the properties or behaviour of living things, materials and other scientific phenomena. I am beginning to identify simple changes related to simple scientific phenomena. I am beginning to discuss criteria for grouping and sorting and can classify using simple keys. Classify, identify, similar, different, criteria, key observe, compare, relevant,</p>	<p>I can talk about and identify differences and similarities in the properties or behaviour of living things, materials and other scientific phenomena. I can identify simple changes related to simple scientific phenomena. I can discuss criteria for grouping and sorting and can classify using simple keys. observe, compare, relevant,</p>	<p>to classify and describe living things, materials and other scientific phenomena. I am beginning to develop my own keys and other information records to classify and describe. I am beginning to identify changes related to scientific phenomena. patterns, observe, compare, relevant,</p>	<p>materials and other scientific phenomena. I can develop my own keys and other information records to classify and describe. I can identify changes related to scientific phenomena. patterns, observe, compare, relevant,</p>
Recording and Reporting						
	<p>Gather and record data with adult support, to help in answering questions. Begin to record simple data. Talk about their findings and explain what they have found out. communicate observations orally, in</p>	<p>Gather and record data to help in answering questions, with some adult support. Record simple data. I can collect simple data. I can record data in a table my teacher has provided.</p>	<p>Gather, record, and begin to classify and present data in a variety of ways (with support) to help in answering questions. Begin to record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.</p>	<p>Gather, record, classify and present data in a variety of ways to help in answering questions. Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. Report on findings from enquiries, including oral and written</p>	<p>Begin to record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables and bar and line graphs. Begin to decide how to record and present data from a choice of familiar approaches.</p>	<p>Choose the most appropriate equipment in order to take measurements, explaining how to use it accurately. Decide how long to take measurements for, checking results with additional readings. Record data and results of increasing</p>

	<p>drawing, labelling, simple writing and using ICT</p> <p>Show their results in a simple table designed by an adult.</p> <p>I can begin to collect simple data.</p> <p>I can begin to record data in a table my teacher has provided.</p> <p>I can begin to communicate my findings in a variety of ways.</p> <p>I found out ...</p> <p>Record, diagram, chart, data</p>	<p>I can communicate my findings in a variety of ways.</p> <p>My results show that ...</p> <p>Record, diagram, chart, data</p>	<p>Begin to report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p> <p>Begin to record results in tables and bar charts.</p> <p>I am beginning to collect data in a variety of ways, including labelled diagrams, bar charts and tables.</p> <p>I am beginning to help decide how to record data.</p> <p>I am beginning to communicate findings using simple scientific language.</p> <p>The data suggests ...</p> <p>This table/bar chart shows that ...</p> <p>Evidence in recording, language of drawings, labelling diagrams, keys, bar charts, tables</p>	<p>explanations, displays or presentations of results and conclusions.</p> <p>Can record results in tables and bar charts.</p> <p>I can collect data in a variety of ways, including labelled diagrams, bar charts and tables.</p> <p>I can help decide how to record data.</p> <p>I can communicate findings using simple scientific language</p> <p>The data suggests ...</p> <p>This table/bar chart shows that ...</p> <p>Evidence in recording, language of drawings, labelling diagrams, keys, bar charts, tables</p>	<p>I am beginning to record data and results of increasing complexity using – scientific diagrams and labels, classification keys , tables ,bar graphs, line graphs</p> <p>I am beginning to choose how best to present data.</p> <p>I am beginning to communicate findings using detailed scientific language.</p> <p>The data suggests ...</p> <p>My findings show ...</p> <p>Looking at ...</p> <p>The diagram/ chart/graph shows ...</p> <p>Scientific diagrams, scatter graphs, repeat readings, causal relationships, patterns, quantitative measurements,</p>	<p>complexity using scientific diagrams and labels, classification keys, tables and bar and line graphs.</p> <p>Decide how to record data from a choice of familiar approaches.</p> <p>Choose how best to present data.</p> <p>I can record data and results of increasing complexity using – scientific diagrams and labels</p> <p>classification keys tables bar graphs line graphs</p> <p>I can choose how best to present data.</p> <p>I can communicate findings using detailed scientific language.</p> <p>The data suggests ...</p> <p>My findings show ...</p> <p>Looking at ...</p> <p>It has transpired that...</p> <p>The diagram/ chart/graph shows ...</p> <p>Scientific diagrams, scatter graphs, repeat readings, causal relationships, patterns, quantitative measurements,</p>
<p>Analysing Data and Drawing Conclusions</p>						

	<p>Begin to talk about what they have found out and how they found it out. Begin to say whether they were surprised at the results or not. I can begin to talk about what I have found out. I can begin to explain how I carried out my enquiry. Compare, contrast, describe</p>	<p>Talk about what they have found out and how they found it out. Say what happened in the investigation. Say whether they were surprised at the results or not. Begin to suggest improvements for the investigation. I can talk about what I have found out. I can explain how I carried out my enquiry. I can suggest simple changes to my enquiry. compare contrast describe</p>	<p>Begin to offer explanations for what they see, and communicate in a scientific way what they have found out. With help, use results to make new predictions. Find ways of improving what they have already done. With help, begin to look for changes, patterns, similarities and differences in their data. Begin to recognise if they conducted their investigation in a fair manner. I am beginning to answer my questions using the results of my enquiry. I am beginning to use my findings to make new predictions and suggest improvements. I am beginning sometimes to think of cause and effect in my explanations. I am beginning to recognise whether I conducted a fair investigation.</p>	<p>Use results to draw simple conclusions. Begin to relate their conclusions to scientific knowledge and understanding. Suggest improvements in their work, giving reasons. Look for changes, patterns, similarities and differences in their data. With support, identify new questions, make new predictions and find ways of improving what they have already done. Recognise whether they conducted their investigation in a fair manner. I can draw simple conclusions based on the results of my enquiry. I can answer my questions using the results of my enquiry. I can use my findings to make new predictions, suggest improvements and think of new questions. I can begin to think of cause and effect in my explanations.</p>	<p>Begin to draw conclusions based on their data and observations. Use evidence to justify their ideas. Use scientific knowledge and understanding to explain their findings. Begin to identify scientific evidence that has been used to support or refute ideas or arguments. Begin to use test results to make predictions to set up further comparatives and fair tests. Use their results to identify when further tests and observations are needed. Begin to separate opinion from fact. Begin to explore the reliability of their results, with support. I am beginning to draw scientific conclusions using the results of an enquiry to justify my ideas. I am beginning to explain my conclusion using scientific</p>	<p>Draw conclusions based on their data and observations. Use evidence to justify their ideas. Use scientific knowledge and understanding to explain their findings. Identify scientific evidence that has been used to support or refute ideas or arguments. Use test results to make predictions to set up further comparative and fair tests. Use their results to identify when further tests and observations are needed. Separate opinion from fact. Explore the reliability of their results. I can draw scientific conclusions using the results of an enquiry to justify my ideas. I can explain my conclusion using scientific knowledge and understanding. I can distinguish opinion and facts.</p>
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			scientific enquiry, comparative and fair test, systematic, accurate, explanation, conclude, evidence, construct and interpret, observe, compare,	I can say whether I conducted a fair investigation. scientific enquiry, comparative and fair test, systematic, accurate, explanation, conclude, evidence, construct and interpret, observe, compare,	knowledge and understanding. I am beginning to distinguish opinion and facts. I am beginning to use my findings to make predictions and set up further enquiries. I am beginning to say whether my results are reliable. variables, precision, repeat readings, causal relationships, degree of trust and reliability, support-refute, patterns, systematic, quantative measurements, independent variable, controlled variables	I can use my findings to make predictions and set up further enquiries I can begin to use abstract models to explain my ideas. I can say how reliable my results are. variables, precision, repeat readings, causal relationships, degree of trust and reliability, support-refute, patterns, systematic, quantative measurements, independent variable, controlled variables
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Year 7 Criteria – for information

<p>Interpret data from a variety of formats and recognise inconsistencies.</p> <p>Give explanations for differences in repeated results.</p> <p>Draw valid conclusions that use more than one piece of supporting evidence.</p> <p>Evaluate work and make suggestions for improvement.</p> <p>Identify several variables and select the best one/s to investigate.</p> <p>Say why equipment is appropriate to the task.</p> <p>Make suggestions to control risk.</p> <p>Decide which format is best to present data.</p> <p>Use scientific conventions to explain abstract ideas.</p> <p>Know the difference between scientific evidence and opinion.</p> <p>Understand that people have different ideas about science.</p>

	Say how science affects me and other people in different ways. Understand that science can be used in a positive and ways. Use more than one step to describe a process. Explain scientific ideas in a clear and detailed way. Identify strengths and weaknesses in science models and thoughts.
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Writing in black: Success criteria from the National Curriculum

Writing in blue: Success criteria in child's speak

Writing in red: model sentences/ prompts for children to use in books

Writing in green: vocabulary for children to hear/ use