



# SUBJECT PROGRESSION: Science- Skills.

The National Curriculum for science aims to ensure that all pupils:

- develop **scientific knowledge and conceptual understanding** through the specific disciplines of biology, chemistry and physics
- develop understanding of the **nature, processes and methods of science** through different types of science enquiries that help them to answer scientific questions about the world around them
- are equipped with the **scientific skills** required to understand the **uses and implications** of science, today and for the future. We understand that it is important for lessons to have a skills-based focus, and that the knowledge can be taught through this.

| Questioning and enquiry  |   |        |  |        |   |        |
|--|---|--------|--|--------|---|--------|
| EYFS   | Year 1  | Year 2 | Year 3   | Year 4 | Year 5  | Year 6 |
| Ask questions about objects, events and animals observed in their environment (Nursery).   | Ask <b>simple</b> questions about the world around us.<br><br><b>Begin to</b> recognise that they can be answered in different ways.  |        | Ask <b>some</b> / <b>relevant</b> questions and use different types of scientific enquiries to answer them.<br><br><b>Begin to</b> explore everyday phenomena and the relationships between living things and familiar environments.<br><br>Begin to develop their ideas about functions, relationships, and interactions.<br><br><b>Begin to</b> raise their own questions about the world around them.<br><br><b>Begin to</b> make some decisions about which types of enquiry will be the best way of answering questions.  |        | <b>Begin to</b> plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.<br><br><b>Begin to</b> explore and talk about ideas, ask their own questions about scientific phenomena, analyse functions, relationships, and interactions more systematically.<br><br>Begin to recognise <b>some</b> more abstract ideas and begin to recognise how these ideas help them to understand how the world operates.<br><br>Begin to recognise scientific ideas change and develop over time.<br><br><b>Begin to</b> select the most appropriate ways to answer science questions using different types of scientific enquiry |        |
| Observing and measuring / Pattern seeking  |   |        |  |        |   |        |
| EYFS   | Year 1  | Year 2 | Year 3   | Year 4 | Year 5  | Year 6 |
| Make observations about objects, events and animals and answer questions.<br><br>Find out how things work by observations and experimentation. | <b>Begin to</b> observe closely, using simple equipment.<br><br>Use <b>simple</b> observations and ideas to suggest answers to questions.<br><br>To observe <b>simple</b> changes over time and, with guidance, begin to notice patterns and relationships.<br><br>To say what I am looking for and what I am measuring.<br><br>To know how to use simple equipment safely.<br><br>Use simple measurements and equipment <b>with support</b> / <b>with increasing independence</b> (e.g. hand lenses and egg timers). |        | <b>Begin to</b> make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.<br><br>Begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them.<br><br>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.<br><br>Learn to use some new equipment appropriately (eg data loggers).<br><br><b>Begin to</b> see a pattern in my results. |        | <b>Begin to</b> take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate.<br><br><b>Begin to</b> identify patterns that might be found in the natural environment.<br><br><b>Begin to</b> 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.<br><br>Choose the most appropriate equipment and explain how to use it accurately.<br><br><b>Begin to</b> interpret data and find patterns.  |        |



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| Begin to progress from non-standard units, reading mm, cm, m, cl, l, °C. | Begin to choose from a selection of equipment. | Select equipment on my own. |
|--|--|-----------------------------|

|   |  |        |   |        |   |        |
|---|--|--------|---|--------|---|--------|
|   |  |        | Begin to observe and measure accurately using standard units including time in minutes and seconds.   |        | Can make a set of observations and say what the interval and range are.<br><br>Begin to take accurate and precise measurements – N, g, kg, mm, cm, mins, seconds, cm <sup>2</sup> V, km/h, m per sec, m/ sec<br>Graphs – pie, line, bar.  |        |
| Investigating   |  |        |   |        |   |        |
| EYFS  | Year 1   | Year 2 | Year 3  | Year 4 | Year 5  | Year 6 |
| Find out how things work by observations and experimentation.<br><br>Sort a variety of objects into groups – size, colour, texture, function. | Perform simple tests with support.<br><br>To begin to discuss my ideas about how to find things out.<br><br>To begin to say what happened in my investigation.   |        | Set up some simple practical enquiries, comparative and fair tests.<br><br>Begin to recognise when a simple fair test is necessary and help to decide how to set it up.<br><br>Begin to think of more than one variable factor.   |        | Begin to use test results to make predictions to set up further comparative and fair tests.<br><br>Begin to recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why.<br><br>Begin to suggest improvements to my method and give reasons.<br><br>Begin to decide when it is appropriate to do a fair test. |        |
| Recording and reporting findings  |  |        |   |        |   |        |
| EYFS  | Year 1   | Year 2 | Year 3  | Year 4 | Year 5  | Year 6 |
|   | Gather and record data with some adult support, to help in answering questions.<br><br>Begin to record simple data.<br><br>Begin to record and communicate their findings in a range of ways.<br><br>Can show my results in a simple table that my teacher has provided. |        | Gather, record, and begin to classify and present data in a variety of ways to help in answering questions.<br><br>Begin to record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.<br><br>Begin to report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.<br><br>Begin to use notes, simple tables and standard units and help to decide how to record and analyse their data.<br><br>Begin to record results in tables and bar charts. |        | Begin to record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables and bar and line graphs.<br><br>Begin to report and present findings from enquiries.<br><br>Begin to decide how to record data from a choice of familiar approaches.<br><br>Begin to choose how best to present data.                       |        |
| Identifying, grouping, and classifying  |  |        |   |        |   |        |
| EYFS  | Year 1   | Year 2 | Year 3  | Year 4 | Year 5  | Year 6 |



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|  |   |  |  |        |   |        |
|--|---|--|--|--------|---|--------|
| Sort a variety of objects into groups – size, colour, texture, function. | Identify and classify <b>with some support.</b><br><b>To begin</b> to observe and identify, compare, and describe.  | <b>Begin to</b> identify differences, similarities or changes related to simple scientific ideas and processes.  | <b>Begin to</b> use and develop keys and other information records to identify, classify and describe living things and materials.   |        |   |        |
|  | <b>To begin to</b> use simple features to compare objects, materials and living things and, with help, decide how to sort and group them.   | <b>Begin to</b> talk about criteria for grouping, sorting, and classifying and use simple keys.<br><br><b>Begin to</b> compare and group according to behaviour or properties, based on testing. |  |        |   |        |
| Research   |   |  |  |        |   |        |
| EYFS   | Year 1  | Year 2   | Year 3   | Year 4 | Year 5  | Year 6 |
|  | <b>To begin to</b> use simple secondary sources to find answers.<br><br><b>To begin to</b> find information to help me from books and computers with help.  |  | Begin to recognise when and how secondary sources might help to answer questions that cannot be answered through practical investigations.   |        | <b>Begin to</b> recognise which secondary sources will be most useful to research their ideas.  |        |
| Conclusions  |   |  |  |        |   |        |
| EYFS   | Year 1  | Year 2   | Year 3   | Year 4 | Year 5  | Year 6 |
|  | <b>Begin to</b> talk about what they have found out and how they found it out<br><br><b>To begin</b> to say what happened in my investigation.<br><br>To <b>begin to</b> say whether I was surprised at the results or not.<br><br>To <b>begin to</b> say what I would change about my investigation. |  | <b>Begin to</b> use results to draw simple conclusions, make predictions for new values, suggest improvements, and raise further questions.<br><br><b>Begin to</b> use straightforward scientific evidence to answer questions or to support their findings.<br><br>With help, begin to look for changes, patterns, similarities, and differences in their data to draw simple conclusions and answer questions.<br><br>With support, <b>begin to</b> identify new questions arising from the data, make new predictions and find ways of improving what they have already done.<br><br><b>Begin to</b> see a pattern in my results.<br><br><b>Begin to</b> say what I found out, linking cause and effect.<br><br><b>Begin to</b> say how I could make it better.<br><br><b>Begin to</b> answer questions from what I have found out. |        | <b>Begin to</b> 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.<br><br><b>Begin to</b> identify scientific evidence that has been used to support or refute ideas or arguments.<br><br><b>Begin to</b> draw conclusions based on their data and observations, use evidence to justify their ideas, use scientific knowledge and understanding to explain their findings.<br><br><b>Begin to</b> use test results to make predictions to set up further comparatives and fair tests.<br><br><b>Begin to</b> look for different causal relationships in their data and identify evidence that refutes or supports their ideas.<br><br>Use their results to identify when further tests and observations are needed.<br><br><b>Begin to</b> separate opinion from fact.<br><br><b>Begin to</b> draw conclusions and identify scientific evidence.<br><br>Can use simple models.<br><br>Know which evidence proves a scientific point.<br><br><b>Begin to</b> use test results to make predictions to set up further comparative and fair tests. |        |

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| Vocabulary  |  |        |   |        |  |
|---|--|--------|---|--------|--|
| EYFS  | Year 1   | Year 2 | Year 3  | Year 4 | Year 5   |
| Use descriptive terms such as 'smooth', 'rough' 'boiling' and 'freezing', 'floating and sinking'. | <p>Use some simple scientific language</p> <p><b>Begin to</b> use some science words.</p> <p>Use comparative language <b>with support</b> e.g. bigger, faster.</p> |        | <p><b>Begin to</b> use some scientific language to talk and, later, write about what they have found out.</p> <p><b>Begin to</b> use relevant scientific language.</p> <p><b>Begin to</b> use comparative and superlative language.</p> |        | <p><b>Begin to</b> read, spell, and pronounce scientific vocabulary correctly.</p> <p><b>Begin to</b> use relevant scientific language and illustrations to discuss, communicate and justify scientific ideas.</p> <p><b>Begin to</b> confidently use a range of scientific vocabulary.</p> <p><b>Begin to</b> use conventions such as trend, rogue result, support prediction and -er word generalisation.</p> <p><b>Begin to</b> use scientific ideas when describing simple processes.</p> <p><b>Begin to</b> use the correct science vocabulary.</p> |

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