

Working Scientifically Progression

| Skills Progression | EYFS | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|---|---|--|---|--|---|--|---|
| Five types of experimental skills 1. Observe over time 2. Pattern seeking 3. Identifying, classifying and grouping 4. Comparative and Fair test 5. Research using secondary sources | 1. I can observe changes over time 2. I can observe changes and patterns 3. I can identify and classify 4. I can perform simple tests 4. I can perform a fair test with adult support | 1. I can observe changes over time 2. I can observe changes and patterns 3. I can identify and classify 4. I can perform simple tests 4. I can perform a fair test with adult support | 1. I can use simple equipment to observe closely including changes over time 2. I can use observations and ideas to suggest answers to questions noticing similarities, differences and patterns 3. I can identify, group and classify 4. I can perform simple comparative tests 5. I can gather and record data to help in answering questions including from secondary sources of information | 1. I can make systematic and careful observations over time 2. I can ask questions surrounding patterns I have found in data. 3. I can gather, record, classify and present data in a variety of ways 4. I can set up simple practical enquiries, comparative and fair tests 5. I can use secondary sources with adult support to help clarify results seen. | 1. I can make systematic and careful observations over time, looking at similarities and differences. 2. I can ask questions surrounding patterns I have found in data. 3. I can gather, record, classify and present data in a variety of ways to help in answering questions 4. I can set up simple practical enquiries, comparative and fair tests 5. I can use secondary sources with adult support to help clarify results seen. | 1. I can observe over time, asking pertinent questions about similarities and differences. 2. I can ask questions surrounding patterns I have found in data as to why something I have observed has happened. 3. I can classify, group and present data in a series of ways to help in answering questions 4. I can take measurements, using a range of scientific equipment, with increasing accuracy and precision. 5. I can use secondary sources to help interpret results seen. | 1. I can recognise things change over time, and can ask pertinent questions and suggest reasons for similarities and differences over time 2. I can ask questions surrounding patterns I have found in data as to why something I have observed has happened. 3. I can develop and use keys and other information to classify and describe objects in ways to help answer questions 4. I can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate 5. I can use secondary sources to help interpret results seen. |
| Questions | I can ask simple questions | I can ask simple questions and recognise that they can be answered in different ways I can use my observations and ideas to suggest answers to questions I can communicate my ideas, what I can do and what I can find out in different ways | I can ask simple questions and recognise that they can be answered in different ways including use of scientific language from the national curriculum I can communicate my ideas, what I can do and what I can find out in different ways | I can ask relevant questions to answer my questions in different ways using scientific language from the national curriculum. I can ask questions surrounding patterns I have found in data. | I can ask relevant questions and use different types of scientific enquiries to answer them using scientific language from the national curriculum I can ask questions surrounding patterns I have found in data. I can develop a deeper understanding through talk, asking questions about scientific phenomena, analysing functions and interactions more systematically. | I can plan different types of scientific enquiries to answer questions, including recognising variables where necessary I can ask questions surrounding patterns I have found in data as to why something I have observed has happened. I can observe over time, asking pertinent questions about similarities and differences. | I can plan different types of scientific enquiries to answer my own or others' questions, including recognising and controlling variables where necessary I can recognise things change over time, and can ask pertinent questions and suggest reasons for similarities and differences over time |
| Using scientific equipment | I can use magnifying glasses to look at objects in more detail I can measure out ingredients using scientific and mathematic equipment | I can use simple equipment to observe closely I can use hand lenses and egg timers | I can use simple equipment to observe closely including changes over time I can ask my own questions about what I notice I can use hand lenses and egg timers | I can set up simple practical enquiries, comparative and fair tests I can make systematic and careful observations over time. I can take measurements using standard units, using a range of equipment including the use of dataloggers and stopwatches. | I can set up simple practical enquiries, comparative and fair tests I can take measurements, using a range of scientific equipment, with increasing accuracy and precision. I can use thermometers and dataloggers . I can use decimal notation to 1 decimal place. | I can make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers, , taking repeat readings when appropriate I can use decimal notation to 2 decimals places. | I can take measurements, using a range of scientific equipment, including thermometers and data loggers, with increasing accuracy and precision, taking repeat readings when appropriate I can make my own decisions and select the most appropriate type of scientific enquiry to use and recognise how to set up a comparative and fair test. I can use decimal notation to 3 decimal places. |
| Recording data | I can record observations in ways that are important and meaningful to me. | I can gather and record data to help in answering questions I can use simple scientific language such as: with help I can use non-standard units of measure | I can gather and record data to help in answering questions including from secondary sources of information I can record findings using simple scientific language , pictograms, tally charts, block diagrams and simple tables. | I can gather, record, classify and present data in a variety of ways. I can record findings using simple scientific language, drawings, labelled diagrams, keys, scaled bar charts, tally charts, block diagrams and simple tables. | I can gather, record, classify and present data in a variety of ways to help in answering questions I can record findings using simple scientific language, drawings, labelled diagrams, keys, scaled bar charts, line graphs and tables | I can record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar graphs, line graphs and combination charts. I can use test results to set up further comparative and fair tests | I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs I can record results in a variety of ways including line graphs and pie charts. I can use test results to make predictions to set up further comparative and fair tests |
| Reporting on findings | | | | I can report on findings from enquiries, using presentations of results and conclusions I can use results to draw simple conclusions. I can use secondary sources with adult support to help clarify results seen. | I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions I can use results to draw simple conclusions, make predictions for new values and suggest improvements. I can use secondary sources with adult support to help clarify results seen. I can classify, group and present data in a series of ways to help in answering questions | I can report and present findings from enquiries in oral and written forms such as displays and other presentations. I can use results to draw more complex conclusions, make predictions for new values and suggest improvements. I can use secondary sources to help interpret results seen. I can classify, group and present data in a series of ways to help in answering questions | I can 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 I can use results to draw more complex conclusions, make predictions for new values and suggest improvements and raise further questions. I can use secondary sources to help interpret results seen. I can develop and use keys and other information to classify and describe objects in ways to help answer questions |
| Using scientific evidence | | | | I can identify differences, similarities or changes related to simple scientific ideas and processes I can use straightforward scientific evidence to answer questions or to support my findings | I can identify differences, similarities or changes related to simple scientific ideas and processes I can use straightforward scientific evidence to answer questions or to support my findings | I can identify scientific evidence that has been used to support or refute ideas or arguments | I can justify and evaluate my own and other people's scientific ideas related to topics in the national curriculum (including ideas that have changed over time), using evidence from a range of sources |