

# Farsley Westroyd: Working Scientifically Skills Progression Map

## Comparative / fair testing

Changing one variable to see its effect on another, whilst keeping all others the same.



## Research

Using secondary sources of information to answer scientific questions.



## Observation over time

Observing changes that occur over a period of time ranging from minutes to months.



## Pattern-seeking

Identifying patterns and looking for relationships in enquiries where variables are difficult to control.



## Identifying, grouping and classifying

Making observations to name, sort and organise items.



## Problem-solving

Applying prior scientific knowledge to find answers to problems.



# Farsley Westroyd: Working Scientifically Skills Progression Map

| Comparative/Fair Testing   |   |  |   |   |  |
|--|---|--|---|---|--|
| KS1  |   | KS2  |   |   |  |
| Year 1   | Year 2  | Year 3   | Year 4  | Year 5  | Year 6   |
| <p>Perform simple tests</p> <p>Use simple equipment</p> <p>Ask science questions</p> <p>Test out ideas with help</p> <p>Talk about what might happen and what they found out</p> | <p>Perform simple comparative and fair tests</p> <p>Measure using non-standard, then standard units</p> <p>Plan a simple fair test, with help</p> <p>Test out their own/someone else's ideas</p> <p>Explain why (in a simple way)</p> <p>Talk about what might happen and compare it to what did happen</p> | <p>Set up simple practical enquiries, comparative and fair tests</p> <p>Ask scientific questions and use information/collect data to answer them</p> <p>Predict what might happen and begin to explain why using everyday ideas</p> <p>Test out their own/someone else's ideas</p> <p>Plan a fair test with help</p> | <p>Set up simple practical enquiries, comparative and fair tests</p> <p>Collect evidence/find information to test out an idea/prediction or answer a question</p> <p>Predict what might happen and begin to explain why using everyday ideas and scientific facts/ideas</p> <p>Select equipment, with help</p> <p>Plan ways to test out their own/someone else's ideas</p> <p>Set up a fair test and explain why it is important to do so</p> | <p>Set up simple practical enquiries, comparative and fair tests</p> <p>Set up an investigation when it is appropriate - set up an enquiry based Investigation</p> <p>Know what variables are in a given enquiry</p> <p>Make predictions and explain why</p> <p>Plan how to collect evidence/information/data to test out an idea/prediction or answer a question</p> <p>Select the most suitable equipment for the task</p> <p>Plan ways to test out their own/someone else's ideas</p> <p>Explain what the evidence shows and whether it supports any predictions</p> <p>Begin to identify scientific evidence that has been used to support or refute ideas or arguments</p> | <p>Know which type of investigation is needed to suit a particular scientific enquiry</p> <p>Set up a fair test when needed</p> <p>Know how to set up an enquiry based investigation</p> <p>Know what variables are in a given enquiry</p> <p>Make predictions based on scientific facts and ideas</p> <p>Select the most suitable equipment for the task</p> <p>Plan ways to test out their own/someone else's ideas</p> <p>Independently set up and carry out fair tests</p> <p>Explain what the evidence shows and whether it supports any predictions</p> <p>Identify scientific evidence that has been used to support or refute ideas or arguments</p> |



# Farsley Westroyd: Working Scientifically Skills Progression Map

| Research   |  |   |  |   |  |
|--|--|---|--|---|--|
| KS1  |  | KS2   |  |   |  |
| Year 1   | Year 2   | Year 3  | Year 4   | Year 5  | Year 6   |
| Ask simple questions and recognise that they can be answered in different ways | Ask simple questions and recognise that they can be answered in different ways including use of scientific language from the national curriculum | Ask relevant questions and use different types of scientific enquiries to answer them<br><br>Use research to find out a range of things | Ask relevant questions and use different types of scientific enquiries to answer them<br><br>Collect evidence/find information to test out an idea/prediction or answer a question | Find things out using a wide range of secondary sources of information<br><br>Plan how to collect evidence/information/data to test out an idea/prediction or answer a question<br><br>Begin to identify scientific evidence that has been used to support or refute ideas or arguments | Find things out using a wide range of secondary sources of information<br><br>Collect evidence/information/data to test out an idea/prediction or answer a question from a wide range of sources |



# Farsley Westroyd: Working Scientifically Skills Progression Map

| Observation Over Time   |  |  |   |  |  |
|---|--|--|---|--|--|
| KS1   |  | KS2  |   |  |  |
| Year 1  | Year 2   | Year 3   | Year 4  | Year 5   | Year 6   |
| <p>Observe, describe, and compare using simple science words</p> <p>Use their own senses to describe</p> <p>Talk about what they have found out and how they found out</p> <p>Observe closely with support and scaffolding, using simple equipment.</p> | <p>Observe, describe, and compare using science words</p> <p>Sort and order observations</p> <p>Observe closely, using simple equipment.</p> | <p>Observe, describe, and compare using Key Stage 2 scientific vocabulary</p> <p>Group and order observations giving scientific reasons</p> <p>Form decisions about what observations to make and how long to make them for</p> <p>Write about what has been found out</p> | <p>Observe, describe, and compare using Key Stage 2 scientific vocabulary</p> <p>Group and order observations giving scientific reasons</p> <p>Form decisions about what observations to make and how long to make them for</p> <p>Write about what has been found out</p> <p>Help to make decisions about the type of simple equipment that might be used.</p> | <p>Observe, describe, and compare in careful detail</p> <p>Write about what has been found out</p> <p>Help to make decisions about the type of simple equipment that might be used</p> <p>Make decisions about what observations to make, what measurements to use, and how long make them for</p> | <p>Observe, describe, and compare in careful detail using the correct language</p> <p>Write about what has been found out</p> <p>Help to make decisions about the type of simple equipment that might be used.</p> <p>Make decisions about what observations to make, what measurements to use, and how long make them for</p> |



# Farsley Westroyd: Working Scientifically Skills Progression Map

| Pattern Seeking   |  |  |  |   |  |
|---|--|--|--|---|--|
| KS1   |  | KS2  |  |   |  |
| Year 1  | Year 2   | Year 3   | Year 4   | Year 5  | Year 6   |
| <p>With help, record in a range of ways and begin to use simple scientific language</p> <p>Write and draw about science</p> | <p>Observe, describe, and compare using science words</p> <p>Explain why (in a simple way)</p> <p>Talk, write and draw about science</p> | <p>Explain observations/results using cause and effect and scientific facts and ideas</p> <p>Explain what the evidence shows and whether it supports any predictions</p> <p>Identify and explain simple trends and patterns in results</p> | <p>Explain observations/results using cause and effect and scientific facts and ideas</p> <p>Explain what the evidence shows and whether it supports any predictions</p> <p>Identify and explain simple trends and patterns in results</p> | <p>Explain observations/results using cause and effects and scientific facts and ideas</p> <p>Explain what the evidence shows and whether it supports any predictions</p> <p>Begin to identify scientific evidence that has been used to support or refute ideas or arguments</p> | <p>Interpret and predict from bar charts and line graphs</p> <p>Explain observations/results using cause and effects and scientific facts and ideas</p> <p>Explain what the evidence shows and whether it supports any predictions</p> <p>Identify trends and patterns in data that do not fit and explain using scientific facts and ideas</p> <p>Identify scientific evidence that has been used to support or refute ideas or arguments</p> |





# Farsley Westroyd: Working Scientifically Skills Progression Map

| Identifying, Grouping, and Classifying                    |   |  |  |  |  |
|---|---|--|--|--|--|
| KS1   |   | KS2  |  |  |  |
| Year 1  | Year 2  | Year 3   | Year 4   | Year 5   | Year 6   |
| Observe, describe, and compare using simple science words | Observe, describe, and compare using science words          | Observe, describe, and compare using Key Stage 2 scientific vocabulary                 | Observe, describe, and compare using Key Stage 2 scientific vocabulary                 | Observe, describe, and compare using Key Stage 2 scientific vocabulary                 | Observe, describe, and compare using Key Stage 2 scientific vocabulary                 |
| Sort things   | Sort and order observations                                 | Group and order observations giving scientific reasons                                 | Group and order observations giving scientific reasons                                 | Group and order observations giving scientific reasons                                 | Group and order observations giving scientific reasons                                 |
|   | Identify, group, and classify according to a given criteria | Group information according to common factors e.g., using Venn Diagrams/carol diagrams | Group information according to common factors e.g., using Venn Diagrams/carol diagrams | Group information according to common factors e.g., using Venn Diagrams/carol diagrams | Group information according to common factors e.g., using Venn Diagrams/carol diagrams |
|   |   |  | Use and design simple keys   | Use simple models to describe scientific ideas   | Use and design classification keys   |



# Farsley Westroyd: Working Scientifically Skills Progression Map

| Problem Solving and Measuring   |  |  |  |   |   |
|---|--|--|--|---|---|
| KS1   |  | KS2  |  |   |   |
| Year 1  | Year 2   | Year 3   | Year 4   | Year 5  | Year 6  |
| <p>Use simple equipment</p> <p>Measure using non-standard units</p> <p>Write and draw about science</p> <p>Record on a simple table</p> <p>Make a simple written explanation about what has been learned from an investigation or what conclusions have been found.</p> | <p>Use simple equipment such as thermometers and rain gauges to observe closely changes over time</p> <p>Measure using non-standard, then standard units</p> <p>Record information on tables and bar charts</p> <p>Talk, write and draw about science</p> <p>Communicate ideas<br/>In a variety of ways e.g., simple written reports or write ups.</p> | <p>Measure in standard units</p> <p>Draw simple tables and bar charts to record their own observations/data</p> <p>Communicate findings in a variety of ways</p> <p>Talk about how to improve their own work</p> <p>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</p> | <p>Measure in standard units</p> <p>Select equipment, with help</p> <p>Draw tables and bar charts to record observations/data</p> <p>Communicate findings in a variety of ways</p> <p>Talk about how to improve their own work</p> <p>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</p> | <p>Measure precisely in standard units</p> <p>Select the most suitable equipment for the task</p> <p>Repeat observations and measurements</p> <p>Draw tables, bar charts and simple line graphs to record observations/data</p> <p>Select the most appropriate way to communicate findings, evaluating the evidence as well as describing it</p> <p>Talk about how to improve their own work giving reasons</p> <p>Report and present Findings including conclusions/ causal relationships and explanations of degree of trust in results</p> | <p>Measure precisely in standard units</p> <p>Select the most suitable equipment for the task</p> <p>Decide when to repeat observations and measurements</p> <p>Choose the most appropriate way to record and present results</p> <p>Select the most appropriate way to communicate findings, evaluating the evidence as well as describing it.</p> <p>Report and present findings including conclusions/ causal relationships and explanations of degree of trust in results</p> |

