Progression Map

Working Scientifically

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Asking Questions	•Looking at objects and pictures and discussing what they can see. •Asks questions about aspects of their familiar world. •Generating a variety of ideas for testing (not always realistic/appropriate) •Prediction - Simple guess - what might happen?	•Looking at objects and pictures and discussing what they can see. •Asks questions about aspects of their familiar world. •Generating a variety of ideas for testing (not always realistic/appropriate) •Prediction - Simple guess - what might happen?	•To be able to ask simple questions (modelled by teacher). •To begin to read and spell scientific vocabulary when asking and answering questions. •To be able to form predictions about what they think the outcomes of an investigation will be.	•To be able to ask simple questions and recognise that they can be answered in different ways, e.g. do all living things have the same life cycle?	•To be able to make decisions, asking relevant questions	•To be able to make decisions, asking relevant questions and using different types of scientific enquiries to answer them	•To be able to plan different types of scientific enquiries to answer questions •To recognise and control variables where necessary. •To be able to explore and talk about their ideas. •To be able to analyse functions, relationships and interactions.	•To be able to plan independently different types of scientific enquiries to answer questions. •To independently recognise and control variables where necessary. •To be able to explore and talk about their ideas using scientific vocabulary. •To ask their own questions about scientific phenomena •To be able to analyse functions, relationships and interactions systematically.

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Observing	•General sensory observations of animals and plants. •Simple descriptions of the world around them.	•General sensory observations of animals and plants. •Simple descriptions of the world around them.	•To observe changes over time and be able to notice patterns in their observations. •To understand that we can use observations to help with answering questions. •To use simple equipment when observing: magnifying glasses, egg timers, sand timers. •To use mostly first-hand experiences (with support) to observe but also begin to use secondary sources: books, photographs, videos.	•To observe closely changes over time using simple equipment to measure. •To recognise patterns and explain their thinking. •To perform simple tests and record results from their observations, eg. changes over time caterpillar to butterfly.	•To set up simple practical enquiries, and begin to understand comparative and fair tests •To work in groups or teacher to model how to make systematic and careful observations using notes and simple tables •To begin to look for naturally occurring patterns and relationships	•To set up simple practical enquiries, comparative and fair tests •To make systematic and careful observations using notes and simple tables •To identify differences, patterns, similarities or changes related to simple scientific ideas and processes	•To be able to take measurements, using a range of scientific equipment. •To take measurements with increasing accuracy •To understand why it might be important to take repeat readings when appropriate. •	•To be able to take measurements, independently, using a range of scientific equipment. •To take measurements accurately and with precision. •To take repeat readings when appropriate. and begin to account for anomalies.

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Measuring and Recording	• To measure by direct comparison • To use non-standard units of measurement • To use simple comparative language e.g. smaller/bigger • To record ideas simply e.g. pictures/images.	• To measure by direct comparison • To use non-standard units of measurement • To use simple comparative language e.g. smaller/bigger • To record ideas simply e.g. pictures/images.	• To know there are different ways to record changes over time. • To explore how to measure and record: whole class charts: bar graphs using multi link cubes, survey, tables. • To begin to understand how science can be used to explain what is occurring. • To sort and group in different topics: animals, plants.	• To use measuring equipment and record their findings on a chart or simple scale. • To use simple scientific equipment including magnifying glasses when measuring and recording. • To be able to gather and record data and present it in different ways including on charts, tables and simple graphs. • To sort and group in different ways eg. materials	• To take accurate measurements using standard units, using a range of equipment • To gather, record, classify and present data to help in answering questions • To record findings using simple scientific language, drawings, labelled diagrams, bar charts, and tables	• To take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • To gather, record, classify and present data in a variety of ways to help in answering questions • To record findings using scientific language, drawings, labelled diagrams, keys, bar charts, and tables	• To understand how to take measurements, using a range of scientific equipment. • To take measurements. • To take repeat readings when appropriate. • To be able to record data and results using scientific diagrams and labels. • To show results using classification keys, tables, bar and line graphs .	• To be able to take measurements, using a range of scientific equipment. • To take measurements with increasing accuracy and precision. • To take repeat readings when appropriate. • To be able to record data and results of increasing complexity using scientific diagrams and labels. • To show results using classification keys, tables, scatter graphs, bar and line graphs.

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Concluding	• To simply talk about objects and events.	• To simply talk about objects and events.	• To know that there are various ways to find answers (modelled by the teacher). • To begin to use recording and observations to answer questions (modelled by teacher).	• To use simple scientific language when recording their findings. • To be able to present and analyse their findings using more sophisticated scientific vocabulary. • To use their observations and ideas to suggest answers to questions. • To predict what might happen	• To use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • To use straightforward scientific evidence to answer questions or to support their findings.	• To report on findings from enquiries, using relevant scientific language, including oral and written explanations, displays or presentations of results and conclusions • To use straightforward scientific evidence to answer questions and to support their findings.	• To report and present findings and make conclusions from enquiries. • To use evidence to justify ideas. • To use scientific knowledge and understanding to explain findings.	• To draw conclusions based on data and observations. • To use scientific knowledge and understanding to explain findings. • To identify causal relationships and explanations. • To recognise 'degree of trust' in result, in oral and written forms.
Evaluating		• To begin to say what went well when they try things out	• To begin to understand the reasons why changes happen. • To begin to analyse what has occurred and use scientific vocabulary to describe.	• To be able to use scientific vocabulary when writing a conclusion to a test.	• To reflect on results and begin to suggest improvements and raise further questions • To start to recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations.	• To make predictions for new values, suggest improvements and raise further questions • To recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations.	• To use test results to make predictions. • To set up further comparative and fair tests. • To recognise that scientific ideas change and develop over time. • To identify scientific evidence that has been used to support or refute ideas or arguments	• To use test results and scientific knowledge to make predictions. • To set up further comparative and fair tests independently. • To independently recognise that scientific ideas change and develop over time. • To independently identify scientific evidence that has been used to support or refute ideas or arguments.