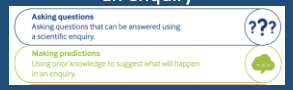
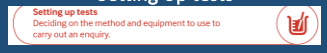
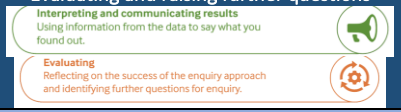
Science Progression of Skills – Woodford Valley Primary Academy

At Woodford Valley, we teach science skills alongside the substantive science knowledge taught in each year group. Scientific skills are taught, practised and assessed through a range of experiences. Children are familiar with the TAPS enquiry skills logos.

More detail on each year group's skills statements can be found on the PLAN and TAPS documents.

	Plan	Do			Review
National Curriculum / PLAN skills heading	Asking questions and recognising they can be answered in different ways	Engaging in practical enquiry to answer questions	Making observations and taking measurements	Recording and presenting evidence	Evaluating and raising further questions and predictions Answering questions and concluding Communicating their findings
TAPS Enquiry skills (including logo)	Asking questions and planning an enquiry 	Setting Up tests 	Observing and Measuring 	Recording Data 	Interpreting and Communicating Evaluating and raising further questions 
Reception	Show curiosity and ask questions	Make observations using their senses and simple equipment. Make Direct comparisons Use equipment to measure Record their observations by drawing, taking photographs, using sorting rings or boxes and in Reception on simple tick sheets			Use their observations to help them to answer questions Talk about what they are doing and have found out Identify, sort and group
Year 1	Ask simple questions and recognise that they can be answered in different ways	Perform simple tests with support to classify, compare, pattern seek and make observations over time Identify and classify with some support. Begin to observe and identify, compare and describe.	Observe objects, materials and living things and describe what is seen, noting key features. Begin to use simple, non-standard equipment and measurements in a practical task as well as make comparisons	Record observations through drawing, writing, making a model, photographing, using labelled diagrams. Classify using sorting rings. Talk about findings	Children can make simple records and evaluations of work, discussing their observations of changes and comparisons. With support and prompts, children begin to suggest answers to questions
Year 2	Ask simple questions and recognise that they can be answered in different ways showing some awareness of the types of enquiry	Perform simple tests showing an understanding of classifying, pattern seeking and making observations over time Identify and classify. Observe and identify, compare and describe.	Observe closely, using simple equipment e.g. hand lenses, identification charts, metre stick	Gather and record data to help in answering questions *-Record observations with photos, videos, drawings, labelled diagrams and writing.* *-Record measurements in prepared tables, pictograms, tally charts and block diagrams (Y2 mathematical level)* *-They classify using simple prepared tables and sorting rings*	Begin to use observations and ideas to suggest answers to questions independently
Year 3	With support, children can develop relevant, testable questions and show an awareness of the type of enquiry needed to answer it	Make simple decisions about what to observe and perform simple practical enquiries. Create a plan to carry out: observations and tests to classify; comparative and simple fair tests;	Begin to make systematic and careful observations, take accurate measurements using standard units and use a range of equipment -length, time, temperature, capacity	Record observations and measurements using simple scientific language, photographs, videos, pictures, labelled diagrams or writing Record measurements using tables – given templates, if required, to which they can add headings.	Use results and evidence to draw simple conclusions and begin to make predictions. Begin to identify differences, similarities changes or relationships related to simple scientific ideas and processes

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	Begin to make predictions by saying what might happen in an investigation and why	observations over time; and pattern seeking.		Draw a bar chart to represent data	Present simple answers to a question based on observations they have made, measurements they have taken or info they have gained from secondary sources Comment verbally on whether their findings are consistent with the evidence Identify ways in which they changed their planned method and how they would do it differently next time
Year 4	Ask their own, relevant, testable questions and use different types of scientific enquiries to answer them Children consider their prior knowledge when asking questions and making predictions	Set up simple practical enquiries, comparative and fair tests Follow their plan to carry out: observations and tests to classify; comparative and simple fair tests; observations over time; and pattern seeking	Make systematic and careful observations, take accurate measurements using standard units (related to the Y4 maths programme) and use a range of equipment. -length, time, temperature, capacity	Gather, record, classify and present data in a variety of ways to help answer questions *Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, Carroll diagrams, Venn diagrams tables (Y4 maths curriculum)* *Children sometimes decide how to present their own evidence, and are supported to present data in different ways in order to help answer the question*	Identify differences, similarities or changes related to simple scientific ideas and processes. Use results and evidence to draw simple conclusions, make predictions and raise further questions. Report on findings from enquiries including oral and written explanations, displays or presentations of results and conclusions. Identify ways in which they changed their planned method and how they would do it differently next time
Year 5	Begin to plan different types of scientific enquiry to answer questions, including recognising and controlling variables where necessary Make predictions and give a reason using scientific vocabulary showing an awareness of why this is important	With support, Identify the variables that need to be controlled and recognise the variables when performing the tests Children select from a small range of practical resources to gather evidence to answer their questions. With support, children decide what observations and measurements to make over time and suggest for how long.	Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. Use equipment accurately and precisely such as ruler, tape measure, trundle wheel, force meters Children begin to make their own decisions with regards to how to carry out a variety of scientific enquiries	Gather, record, classify and present data in a variety of ways of increasing complexity to help answer questions using: scientific diagrams and labels, tables, graphs, bar and line graphs. Decide how data and evidence can be best presented.	Report and present findings from enquiries including conclusions, causal relationships and explanations of and degree of trust in results. Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions Report on findings from enquiries including oral and written explanations, displays or presentations of results and conclusions Learn to identify whether scientific evidence supports or refutes ideas or arguments
Year 6	Plan different types of scientific enquiry to answer questions, including recognising and controlling variables where necessary. Make predictions and give a reason using scientific vocabulary. Base predictions on	Conduct tests using different types of scientific enquiries through their own choice to answer questions: including recognising and controlling variables where necessary. Children select from a range of practical resources to gather evidence to answer their questions.	Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate Children make their own decisions with regards to how to carry out a variety of scientific enquiries	Record data and results of increasing complexity using scientific diagrams and labels, classification keys, scatter graphs, bar and line graphs *-Decide how to record and present evidence* *-Present the same data in different ways to help answer questions*	Report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations. Identify scientific evidence that has been used to support or refute ideas or arguments

	findings from previous investigations	Children decide what observations and measurements to make over time and for how long.			Use test results to make predictions to set up further comparative and fair tests