



Oliver Goldsmith Primary School
 'Inspiring a love of learning'
Working Scientifically Progression Map



	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Planning and predicting	<ul style="list-style-type: none"> Looking at objects and pictures, discussing what they can see Ask questions about aspects of their familiar world Generate a variety of ideas for testing Prediction- simply guess what might happen and explore. 	<ul style="list-style-type: none"> With help Suggest what might happen next. Suggest simple ways to test ideas using equipment around them. 	<ul style="list-style-type: none"> Suggest some ideas and questions. Think about how to collect evidence Suggest what might happen Think about and discuss whether comparisons tests and are fair and unfair 	<ul style="list-style-type: none"> Respond to suggestions With help put forward ideas about testing Make predictions With help consider what constitutes a fair test With help plan and carry out fair tests 	<ul style="list-style-type: none"> Recognise why it is important to collect data to answer questions Suggest questions that can be tested Put forward ideas about testing and making predictions With help, consider what constitutes to fair testing. 	<ul style="list-style-type: none"> Recognise that scientific ideas are based on evidence and creative thinking Make predictions based on scientist knowledge Suggest methods of testing including a fair test Suggest how to collect evidence Independently select appropriate equipment. 	<ul style="list-style-type: none"> Consider how scientists have combined evidence from observations & measurements with creative thinking to suggest new ideas and explanations for phenomena Make predictions based on scientific knowledge and understanding Suggest methods of testing including fair tests and how to collect evidence-ensuring that it is a sufficient and systematic approach.
		<p>Greater Depth:</p> <ul style="list-style-type: none"> Understand that scientific questions can be answered in numerous ways. Organise a group of others to carry out an investigation or an observation. 	<p>Greater Depth:</p> <ul style="list-style-type: none"> Choose own equipment which can be used and explain their choices 	<ul style="list-style-type: none"> Greater Depth: Plan out how to perform a task, varying one factor while keeping others the same 	<ul style="list-style-type: none"> Greater Depth Decide on an appropriate approach in their own investigations to answer questions 	<p>Greater Depth</p> <ul style="list-style-type: none"> Explain predictions in writing using scientific knowledge 	<p>Greater Depth</p> <ul style="list-style-type: none"> Explain predictions in writing using scientific knowledge and understanding



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INVESTIGATING AND OBSERVING	<ul style="list-style-type: none"> General sensory observations of animal's plants and seasons Simple descriptions of the world around them 	<ul style="list-style-type: none"> Make observations using appropriate senses. Explore using the five senses Make simple comparisons and groupings. 	<ul style="list-style-type: none"> Make observations and comparisons using simple equipment following simple instructions 	<ul style="list-style-type: none"> Make observations and comparisons comparing and contrasting two or more known concepts Use first-hand experience and simple information sources to answer questions. 	<ul style="list-style-type: none"> Making systematic and careful observations, Begin to think about when measurements of length should be repeated. With help carry out a fair test-recognising and explaining why it's fair. 	<ul style="list-style-type: none"> Carry out a fair test explaining why it is a fair test using controlled variables Understand why observations and measurements need to be repeated Select information from previous sources 	<ul style="list-style-type: none"> Carry out fair tests, identifying key factors to be considered. Make a variety of relevant observations and measurements using simple apparatus correctly Decide when observations and measurements need to be checked by repeating to give more reliable data Select information from a range of sources
		<p>Greater Depth:</p> <ul style="list-style-type: none"> Communicate observations orally, in drawing, labelling simple writing and using ICT 	<p>Greater Depth:</p> <ul style="list-style-type: none"> Begin to recognise when a test or comparison is unfair 	<p>Greater Depth:</p> <ul style="list-style-type: none"> Explain when a test or comparison is unfair Show in the way they perform their tasks how to vary one factor while keeping others the same. 	<p>Greater Depth</p> <ul style="list-style-type: none"> Explain which result should be chosen from a set of repeated results 	<p>Greater Depth</p> <ul style="list-style-type: none"> Use averages to gain one representative result from a set of repeated results 	<p>Greater Depth</p> <ul style="list-style-type: none"> Understand the difference in how to investigate quantitative and interpretative data



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MEASURING AND RECORDING		<ul style="list-style-type: none"> Communicate findings in simple ways. Collect evidence to answer specific questions. Say whether what happen was expected. 	<ul style="list-style-type: none"> Record findings in simple ways including tables and graphs etc. Explain whether what happened was what they expected. Use scientific vocabulary to present their findings and analyse observations. 	<ul style="list-style-type: none"> Communicate findings in a variety of ways. Measure length column of liquid and time in standard measures using simple measuring equipment 	<ul style="list-style-type: none"> where appropriate taking accurate measurements using thermometers and data loggers. Make measurements of temperature, time and force as well as measurements of length recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions 	<ul style="list-style-type: none"> Carry out a fair test explaining why it is a fair test using controlled variables Understand why observations and measurements need to be repeated Select information from previous sources Carry out a fair test explaining why it is a fair test using controlled variables 	<ul style="list-style-type: none"> Communicate findings in tables, bar charts and line graphs whilst making appropriate use of ICT. Identify trends and patterns and results that do not appear to fit the pattern.
		<p>Greater Depth</p> <ul style="list-style-type: none"> Use charts to communicate findings Link learning and understanding of concepts to the outdoor learning. 	<p>Greater Depth</p> <ul style="list-style-type: none"> Present data correctly in a graph or diagram. Use comparative adjectives to explain patters e.g. bigger, smaller, Greater, and higher. 	<ul style="list-style-type: none"> Identify simple patterns and suggest explanations based on the knowledge they have learnt. Lead a group to communicate findings to the rest of the class, using a variety of resources. 	<p>Greater Depth:</p> <ul style="list-style-type: none"> Provide a variation of evidence to support scientific findings. With reasons, suggest improvements’ in their work 	<p>Greater Depth</p> <ul style="list-style-type: none"> Use averages to gain one representative result from a set of repeated results Use averages to gain one representative result from a set of repeated results 	<p>Greater Depth</p> <ul style="list-style-type: none"> Explain anomalous data with a variety of reasons Show how interpretation of evidence leads to new ideas.



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CONCLUDING	<ul style="list-style-type: none"> To simply talk and listen to others about objects and events 	<ul style="list-style-type: none"> To know that there are various ways to find answers modeled by teacher and other students experience of practices. To begin to use observations as a means of reference for new understandings. 	<ul style="list-style-type: none"> To use topic related scientific language when recording or communicating their findings. To be able to use their observations and ideas to suggest answers to questions 	<ul style="list-style-type: none"> Say whether what has happened and what was expected to draw simple conclusions. Using scientific evidence to support findings. 	<ul style="list-style-type: none"> Explain what the evidence shows in a scientific way, and whether its supports predictions, 	<ul style="list-style-type: none"> Understand why observations and measurements need to be repeated 	<ul style="list-style-type: none"> Provide explanations for differences in observations and measurement. Draw conclusions and communicate them in appropriate scientific language,



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EVALUATING	<ul style="list-style-type: none"> To simply talk about objects and events 	<ul style="list-style-type: none"> To know that there are various ways to find answers 	<ul style="list-style-type: none"> To use scientific vocabulary when writing a conclusion to a test or observation 	<ul style="list-style-type: none"> With help identify simple patterns and suggest explanations To reflect and begin to suggest improvements and raise further questions To start to recognize when and how secondary sources might help them to answer questions that cannot be answered through practical investigations 	<ul style="list-style-type: none"> Suggest improvements in their work To make predictions and further hypothesis for new values, suggest improvements and raise further questions To recognize when and how secondary sources help them to answer questions that cannot be answered through practical investigations 	<ul style="list-style-type: none"> Select information from previous sources To use test results to make predictions and hypothesis To set up further comparative and fair tests To recognize that scientific ideas change and developed over time. To identify scientific evidence that has been used to support or refute ideas or arguments. 	<ul style="list-style-type: none"> Make practical suggesting for improving methods in their work giving suggestions. To use test results and scientific knowledge to make predictions. To set up further comparative and fair tests independently. To independently recognize and understand that scientific ideas change over time