Working Scientifically Progression and what this means

	KS1 (where pupils have come from)	Year 3 and 4	Year 5 and 6
PLAN			
(National Curriculum areas)	ask simple questions and recognise that they can be answered in different ways	ask relevant questions and use different types of scientific enquiries to answer them set up simple practical enquiries, comparative and fair tests	plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
Explained further for teachers		*Give pupils a range of scientific experiences so they can raise their own questions about the world around them.* *By Y4, start to make their own decisions about what type of enquiry will answer questions* *Recognise a simple fair test and how to set it up*	*These older pupils should be able to raise questions, give a hypothesis, and then select and plan the most appropriate type of investigation/experiment to answer them. Support would be gradually taken away across the year.* *They should recognise how to set up comparative and fair tests and explain what variables need to be controlled and why*
DO			
(National Curriculum areas)	observe closely, using simple equipment perform simple tests identify and classify	Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, use a range of equipment, including thermometers and data loggers	take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
Explained further for teachers		*Give pupils experience of different scientific equipment to collect data. Definitely include thermometers and data loggers.*	*Give pupils experience of different scientific equipment to collect data. They should be able to use more complicated equipment and be more accurate*
RECORD			
(National Curriculum areas)	gather and record data to help in answering questions	gather, record, classify and present data in a variety of ways to help in answering questions record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
Explained further for teachers		*Data can be gathered through notes, for example* *Use the different ways of presenting data above to record findings*	*Data and results are recorded much more scientifically* *Children should be deciding increasingly for themselves what observations to make, what measurements to take, how long for and whether it should be repeated*

			They should be able to make equipment choices for recording and explain how to use this equipment *They should increasingly be able to choose the best way to record their data* *They should be able to find the relationships and patterns and judge whether this supports of refutes ideas*
REVIEW			
(National Curriculum areas)	use their observations and ideas to suggest answers to questions	Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions Identify differences, similarities or changes related to simple scientific ideas and processes Use straightforward scientific evidence to answer questions or to support their findings	use test results to make predictions to set up further comparative and fair tests 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 ¬ identify scientific evidence that has been used to support or refute ideas or arguments
Explained further for teachers		*With support, children should look for changes and patterns, similarities and differences in their data to draw simple conclusions* *Pupils should then be able to report on what they have found in other ways than just writing it, including oral and presentations and displays* *Pupils should then identify any new questions that come from the results of their experiment, make predictions linked to this based on what they now know, and identify how they could have improved their experiment* *They should understand that sometimes they can't find out the answer themselves and may need to use secondary sources of evidence (books, articles, internet etc)*	*From these results, what others test should we do? What questions has this raised?* *Identify any causal relationships (where one thing causes another – cause and effect)* *Pupils should then be able to report on what they have found in other ways than just writing it, including oral and presentations and displays* *Separate Scientific opinion from scientific fact and scientific evidence. This would be linked to something they can't prove themselves in school*
		Be able to use scientific vocabulary in their speech and writing	**Be able to use scientific vocabulary in their speech and writing**