The Orchard Lea Federation – Progression of Disciplinary Skills

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Knowledge of Scientific Methods	**Testing**	I can perform simple practical tests, using simple equipment.	I can perform simple comparative tests. Children can make their own suggestions about how to ensure a fair test when planning with a teacher.	With shared planning, I can set up simple practical enquiries, and suggest how to ensure a fair test.	With some independence, I can set up simple practical enquiries, and suggest how to ensure a fair test.	I can plan and set up simple practical enquiries, comparative and fair tests, recognising and controlling variables where necessary.	I can identify which type of investigation is needed. I can plan and set up simple practical enquiries, comparative and fair tests, recognising and controlling variables where necessary.
	Observing	I can observe closely using simple equipment.	I can use simple equipment to observe changes over time.	I can make systematic and careful observations.	I can make systematic and careful observations.	I can make careful and focused observations.	I can make careful and focused observations.
	Classifying	I can use simple features to compare objects, materials and living things.	I can decide how to sort and classify objects or things into simple groups (basic tables or Venn diagrams).	I can talk about criteria for grouping, sorting and classifying. I can classify and group objects.	I can group and classify information according to common factors e.g. venn diagrams or carrol diagrams.	I can independently group and classify things and recognise patterns using appropriate ways of presenting e.g. classification keys.	I can independently group and classify things and recognise patterns using appropriate ways of presenting e.g. classification keys.
	Questioning	I can ask simple questions and recognise that they can be answered in different ways.	I can ask simple questions and recognise that they can be answered in different ways, including use of scientific language.	I can ask relevant questions and use different types of scientific enquiries to answer them.	I can ask relevant questions and use different types of scientific enquiries to answer them.	I can plan different types of scientific enquiries to answer given questions.	I can plan different types of scientific enquiries to answer my own or others' questions.

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Knowledge of Apparatus and Techniques	**Measuring**	I can use simple equipment to observe closely.	I can use simple equipment, such as thermometers, to observe closely changes over time.	I can make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.	I can make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.	I can take measurements using a range of scientific equipment, with increasing accuracy and precision. I can take repeat recordings where appropriate.	I can take measurements using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. I can take repeat recordings where appropriate.
	Gathering and recording	With support, I can record simple data in prepared tables, pictorially or by taking photographs.	With support, I can begin to record data data in different ways.	I can record data in a variety of ways (including scientific diagrams and tables).	I can record data in a variety of ways (including scientific diagrams and tables).	I can record data in increasingly more complex scientific ways (including tables, scientific diagrams and classification keys). I can construct my own table to record data, including columns for repeat recordings.	I can record data in increasingly more complex scientific ways. I can construct my own table to record data, including columns for repeat recordings. I can decide how to record my data from a range of familiar approaches.

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Knowledge of Data Analysis and Presentation	**Communicating findings**	I can record and communicate findings in a range of ways with support.	I can communicate my findings using simple write ups.	I can begin to communicate my findings in written and oral forms, presentations and visual displays.	I can use scientific language to communicate my findings in written and oral forms, presentations and visual displays.	I can use scientific language to provide oral or written explanations for my findings with increasing confidence.	I can use scientific language to communicate and justify my scientific findings.
	Conclusions	I can begin to notice patterns and relationships with support.	I can notice links between cause and effect with support.	I can use results to draw simple conclusions.	I can use results to draw simple conclusions and make predictions for new values.	I can use results to draw conclusions.	I can use results to draw conclusions, justifying them using scientific evidence and concepts.
	Presenting data	I can present what I have learnt verbally, using pictures or diagrams.	I can present what I have learnt verbally, using pictures or diagrams.	I can present data in a variety of ways (bar charts, tables, labelled diagrams).	I can present data in a variety of ways (bar charts, tables, labelled diagrams).	I can present data in increasingly more complex scientific ways (line or scatter graphs, charts, tables, diagrams).	I can present data in increasingly more complex scientific ways (line or scatter graphs, charts, labelled diagrams).

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Knowledge of How Science Uses Evidence to Develop Explanations	**Using scientific evidence**			. I can make links between my results and other scientific evidence. I can use straightforward scientific evidence to answer questions or support my findings.	I can identify similarities, differences, patterns and changes relating to simple scientific evidence and processes.	I can identify evidence that refutes or supports ideas.	I can identify evidence that refutes or supports idea or arguments. I can discuss and explain how scientific ideas have developed over time.
	Use of secondary sources			I can use research to find out about a range of scientific concepts.	I can use research to find out about a range of scientific concepts.	I can research scientific concepts using a wide range of secondary sources.	I can research scientific concepts using a wide range of secondary sources. I can use primary and secondary sources to justify ideas.
	Posing further questions	I can ask a simple scientific question related to a topic.	I can ask a simple scientific question related to a topic. I can ask a question about what might happen in the future based on an observation.	I can ask relevant scientific questions related to a topic. I can use results from an investigation to make a prediction about a further test.	I can ask relevant scientific questions related to a topic. I can use results from an investigation to make a prediction about a further test.	I can ask relevant scientific questions and identify the type of enquiry needed to answer them. I can use results from an investigation to make a prediction about a further test.	I can ask relevant scientific questions and identify the type of enquiry needed to answer them. I can use results from an investigation to make a prediction about a further test.
	Improvements to procedures		I can discuss how successful my scientific method was.	I can suggest improvements to an enquiry e.g. method of taking measurements.	I can suggest improvements to an enquiry e.g. method of taking measurements.	I can explain the degree of trust in my results e.g. precision in taking measurements, variables that may not have been controlled, and accuracy of results.	I can explain the degree of trust in my results e.g. precision in taking measurements, variables that may not have been controlled, and accuracy of results.