Working Scientifically Progression Map- end points

	End of Reception	End of Year 2	End of Year 4	End of Year 6
Ask scientific questions	Begin to ask questions about the world around them	Answer yes/no questions to aid sorting Ask one/2 simple research questions linked to a topic Choose a question to undertake a fair test Ask a question about what is happening over time or that is looking for a pattern	Answer yes/no questions to aid sorting Ask a range of research questions linked to a topic Ask a range of questions to undertake a fair test Ask a range of questions about what might happen over time or that is looking for a pattern	Answer yes/no questions to aid sorting and decide which ways of sorting will give useful information Ask a range of research questions recognising that some can be answered using research and some not Ask a range of questions and identify the type of enquiry needed that will help to answer some questions. Ask further questions based on results
Make a prediction			Use results from an investigation to make a prediction about a further result.	Use test results to make predictions for further investigations.
Plan an enquiry		Identify the headings for the two classification groups (it is…, it is not…) Choose equipment to use and decide what to do and what to observe or measure in order to answer the question.	Put appropriate headings onto intersecting Venn and Carroll diagrams. Choose a research source from a range provided. Decide what to change and what to measure or observe.	Identify specific clear questions that will help to sort without ambiguity. Choose suitable sources to use. Recognise and independently control variables where necessary.

			Decide how often to take a measurement.	Decide how often to take a measurement.
Observe closely	Observe the natural world around them - drawing pictures of animals and plants	Compare objects based on obvious, observable features, e.g. size, shape, colour, texture etc. Make observations linked to answering the question.	Compare objects based on more sophisticated, observable features and present observations in labelled diagrams. Make a range of relevant observations linked to the question.	Compare not only based on physical properties but also on knowledge gained through previous enquiry. Make a range of relevant observations linked to their question.
Take measurements		When appropriate, measure using standard units where all the numbers are marked on the scale.	Measure using standard units (according to age related mathematics) where not all the numbers are marked on the scale (YR4 and take repeat readings) Use dataloggers to measure over time.	Measure using standard units using equipment that has scales involving decimals (according to age related mathematics), and take repeat readings where necessary. Use dataloggers to measure over time.
Record results	Record what they see within pictures or by taking photographs	Record data in simple prepared tables, tally charts, pictorially or by taking photographs.	Prepare own tables to record data.	Prepare own tables to record data, including columns for taking repeated readings.
Present results		Sort objects and living things into two groups using a basic Venn diagram or simple table.	Sort objects and living things into groups using intersecting Venn and Carroll diagrams.	Create branching databases (tree diagrams) and keys to enable others to name living things and

		Present what they have learnt verbally, using pictures or block diagrams.	Present what they have learnt verbally or using labelled diagrams, bar charts, or time graphs.	objects. Present what they have learnt in a range of ways e.g. different graphic organisers, line graphs and scatter graphs.
Interpret results		Talk about the number of objects in each classification group i.e. which has more or less. Answer their questions using simple sentences using their observations or measurements.	Spot patterns in the classification data, particularly two criteria with no examples e.g. there are no living things with wings and no legs. Answer questions using simple scientific language and refer directly to their evidence when answering their question.	Talk about the features that items share and do not share based on the information in the key etc. Answer questions using scientific evidence gained from a range of sources. Describe causal relationships, change over time and identify patterns.
Draw conclusions			Draw simple conclusions, when age appropriate, for patterns e.g. a flying insect with no legs might always crash land. Where appropriate provide oral or written explanations for their findings.	Use data to show that items grouped together have more things in common than with things in other groups. Provide detailed oral or written explanations for their findings.
Evaluate an enquiry			Suggest improvement (e.g. a wider range of objects) and suggest new questions arising from the investigation. Suggest limitations to research (e.g. only had one book) and	Explain using evidence that the branching database or classification key will only work for the livings things or materials it was created for. Talk about their degree of trust in

| | | | suggest new questions arising from the investigation.

Suggest improvements (e.g. measurement method) and suggest new questions arising from the investigation. | the sources they used.

Explain their degree of trust in their results (e.g. precision in measurements, variables that may not have been controlled, and accuracy of results) |
|---|---|---|---|---|