

Progression in Working Scientifically at Haddenham Community Junior School.

	PATTERN SEEKING	OBSERVATION OVER TIME	COMPARATIVE & FAIR TEST	IDENTIFY & CLASSIFY	RESEARCH
UKS2 Years 5/6	Decide how detailed data needs to be, and which equipment to use, to make data as accurate as possible	Decide how detailed observations will need to be, and what equipment to use, to make measurements as accurate as possible	Plan a fair test, selecting the most suitable variables to measure, change and keep the same	Decide what equipment, tests and secondary sources of information to use to identify and classify things	How rich scientific questions are used to develop scientific ideas How limits of current evidence leads to new understanding
	Use equipment accurately to collect observations recognise the effect of sample size on reliability	Use equipment accurately without support Recognise the effect of changing the time and the number of observations	Use equipment accurately to collect observations	Use a series of tests to sort and classify materials use secondary sources to identify and classify things	Understand the sources of data and consider if it is biased or opinion based.
	Talk about and explain cause and effect patterns using scientific knowledge and understanding	Draw valid conclusions about data from changes Talk about and explain changes using scientific knowledge and understanding	Draw valid conclusions based on the data recognise the significance of the results of fair tests	Draw valid conclusions when sorting and classifying talk about what has been done using scientific knowledge	Link my research to other sources of research Evaluate how well the evidence has answered the questions
Year 4	Talk about where patterns might be found and decide when questions can be investigated by pattern seeking	Talk about things changing and decide when questions can be answered by observing over time	Decide what equipment to use to make measurements as accurate as possible Talk about links between cause and effect and pose a fair test question	Talk about what criteria to use to sort or classify things Talk about things that can be grouped and decide when questions can be answered by sorting and grouping things	Select appropriate questions that can be scientifically investigated. Analyse and select a range of sources of evidence to answer scientific questions.
	Record data appropriately and accurately Present data in scatter graphs and frequency charts Recognise the patterns in results	Record data appropriately Present data in line graphs Interpret changes in the data Use a range of equipment to collect data using standard measures	Record data appropriately and accurately present data in line graphs Identify causal relationships Use a range of equipment to collect data using standard measures	Make keys and branching databases using 4 or more items Use Carroll diagrams, Venn diagrams and more complex tables to sort things	Select appropriate evidence from multiple sources to draw appropriate conclusions

	Evaluate how well patterns were identified draw conclusions about simple patterns between two sets of data	Evaluate how well observations/measurements were made draw simple conclusions from the changes observed	Evaluate the effectiveness of fair testing, recognising variables that were difficult to control. Draw simple conclusions from fair tests Talk about, and explain, simple causal relationships using some scientific language	Evaluate how well keys worked Draw simple conclusions about things that were sorted or classified	Analyse the sources of evidence for validity and reliability and how it has answered my questions
Year 3	Decide on which sets of data to collect, what observations to make and what equipment to use	Decide what observations to make, how often, and what equipment to use.	Help to plan a fair test Decide what data to collect Decide what equipment to use and how to make observations	Decide what equipment to use to sort and classify things Ask questions about how and why things are similar or different	Select appropriate questions for investigation Explain what secondary sources you can use to answer your question
	Use a range of equipment to collect data using standard measures Make records using bar charts or simple scatter graphs Begin to use and interpret data collected through dataloggers	Make records using tables and bar charts begin to use and interpret graphs produced by dataloggers	Make records using tables and bar charts begin to use and interpret data collected through dataloggers	Carry out simple tests to sort and classify according to properties or behaviour Use simple keys and branching databases to identify things Record observations in words or pictures, or simple tables	Use evidence from different sources to explain answers to your questions
	Talk about patterns using some scientific language Suggest improvements to the way patterns were identified	Talk about changes using some scientific language Suggest improvements to the way observations were made	Suggest ways that the fair test could be improved Use simple scientific language to identify and describe simple causal relationships	Talk about the similarities and differences identified using some scientific language Suggest improvements to the way things were sorted or classified Use scientific language to talk about how things are similar of different	Explain how to use other sources to improve/ triangulate my answers.