Science Skills Progression

Christleton Primary School

	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
Context For Learning	**A Toy Story**	**Marvellous Medicines**	**Digging through Time**	**The Rotten Romans**	**A wave of Invasions**	**We'll Meet Again**
	Up and down the Andes	**Giants and where to find them**	**The Place Between**	**Imaginary Worlds**	**Journeys**	**Fantastical Worlds / King Kong**
	We're All Going on a Summer Holiday	**A Japanese Journey**	**Secrets of the Rainforest**	**Great British Icons**	**Exploring; Coast to Coast**	**An adventure of exploration**

Progression in fair-test, pattern seeking and observation/measurement over time

	By the End of Year Two	By the End of Year Four	By the end of Year Six
Plan	**asking simple questions and recognising that they can be answered in different ways and using different types of scientific enquiries to answer them** - with help begin to choose ways to try and answer a question -take a few guided planning decisions - recognise when simple test are unfair -make own suggestions on how to collect data once the data needed has been outlined -make simple prediction if appropriate (based on something they have observed before but without an explanation)	▪ **ask relevant questions** ▪ **set up simple practical enquiries, comparative and fair tests** -begin to choose ways to try and answer a question - put forward own ideas and make some planning decisions - suggest ways of making the test fair or if it can't be fair how they will answer it by looking for a pattern - from a selection say what equipment is needed - suggest the type of data needed to be collected - make simple predictions based on everyday experience and knowledge	▪ **planning different types of scientific enquiries, including recognising and controlling variables where necessary to answer questions** -ask a variety of types of scientific questions -choose the most appropriate scientific enquiry method to answer a question and outline the method -list all the equipment needed -decide what data to collect and how much of it is needed - make predictions based on scientific knowledge
Do	▪ **observe closely, using simple equipment** ▪ **perform simple tests** - make observations related to the task or test - use simple equipment provided -measure using uniform non- standard units (e.g. straws) or simple standard units and measuring equipment - metre stick , cm, kg masses, l, jugs & second timer -compare 3 or more things -read scales to nearest labelled division.	▪ **Making systematic and careful observations and where appropriate taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers** - carry out a fair test or pattern seeking enquiry with help -compare 3 or more things -use simple standard measures; m, cm, mm, kg, g, minutes, seconds, Newton. -measure to the nearest whole or half unit or mixed units. -read scales to the nearest division labelled and unlabelled.	▪ **Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate** - make a series of measurements adequate for the task - select appropriate measuring equipment - use standard measures as in including use of fractions and mixed units and decimals to one place. -read scales with increased accuracy -compare 5 or more things - select apparatus and use with care -read scales with precision and accuracy appropriate to the task -repeat readings & find averages
Record	▪ **gather and record data to help in answering questions (Year 2 only)** - draw pictures of results/ take photos - help teacher make a class table or chart - complete a simple chart or two column table - make practical block graphs/pictograms - make/draw a block graph with a 1:1 scale	▪ **gathering, recording, classifying and present data in a variety of ways to help in answering questions** ▪ **recording findings using simple scientific language, drawings, labelled diagrams, bar charts, and tables** - construct a simple 2 column table - draw bar charts 1:1, 1:2, 1:5 and 1:10 scale & begin to plot line graphs	▪ **recording data and results of increasing complexity using scientific diagrams, labels, classification keys tables, scatter graphs, bar and line graphs, and models** - present information clearly in tables including for repeat readings - record observations and measurements systematically -draw bar graphs more complex scales possibly involving fractions or decimals e.g. 1:2.5 - draw line graphs, possibly involving fractions and decimals

Review	• use their observations and ideas to suggest answers to questions - describe observations - say what they have found out - say whether what happened was what they expected	• reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions, making predictions for new values • using results to draw simple conclusions and suggest improvements, and raise further questions new questions • identifying differences, similarities or changes related to simple scientific ideas and processes - say what they have found out and give an explanation for observations and simple patterns based on everyday experience	• reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of results, explanations of the degree of trust in results, in oral and written forms such as displays and other presentations • using test results to make predictions to set up further comparative & fair tests • identify scientific evidence that has been used to support or refute ideas or arguments. - use graphs to spot and interpret patterns/trends in results - draw conclusions using these patterns and begin to relate conclusions to scientific knowledge and understanding consistent with the evidence - offer simple explanations for differences in repeated measurements/ observations

Progression in identification and classification

By the End of Year Two	By the End of Year Four	By the end of Year Six
- **identifying and classifying** -compare observable and behavioural features of living things, materials and objects -sort and group in own way using both observable and behavioural features even when differences are slight -answer simple yes/no questions about a mystery object they have chosen -sort into two groups in which one group has a feature and the other doesn't -once they have decided sorting criteria explain where further additional items could be placed -use simple Venn diagrams to help sort things and record the groupings	- **gathering, recording, classifying and presenting data in a variety of ways to help in answering questions** -use Carroll and Venn diagrams to help sort things and record the groupings, sometimes re-sorting using different criteria -make simple branching data bases/ classification keys to for a few (3-6) things with easily observable differences and that can be named -use simple classification keys/ branching data bases to identify unknown items that have easily observable differences in their features -carry out simple tests and sort and group based on the evidence of the results found.	**-recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.** -be aware of the term kingdom and know that most scientists classify things into five kingdoms. -through direct observations where possible classify animals into vertebrates and invertebrates. -make keys and branching databases with 4 or more items -evaluate how well keys and databases work and make changes to improve them -explain why it is important to classify and why it is useful to scientists - plan what to test, how to test and collect evidence in order to classify