Disciplinary Knowledge and the National Curriculum Statutory Requirements Overview

Year 1/2

Working Scientifically Statement	Disciplinary Knowledge
Asking simple questions and recognising that they can be answered in different ways	What a scientific question is
	How scientific question can be answered
	Using simple secondary sources
	Variables in practical work (change & measure)
Observing closely, using simple equipment	Use of simple equipment
	Observe changes over time
Performing simple tests	Measuring
	Recording of data
Identifying and classifying	Identifying objects
	Classifying
	Sorting objects

Working Scientifically Statement	Disciplinary Knowledge
Identifying and classifying cont.	Comparing objects
	Identify patterns
Using their observations and ideas to suggest answers to questions	What scientific evidence is
	What scientific evidence is not
	What conclusions are used for
	What a scientific conclusion should include
Gathering and recording data to help in answering questions.	What data is
	What a table is
	How to place data into a table
	That data in a table can be clearer when displayed as a graph

Year 3/4

Working Scientifically Statement	Disciplinary Knowledge
Asking relevant questions and using different types of scientific enquiries to answer them	Scientific hypotheses
	Scientific models
	Scientific theories
Setting up simple practical enquiries, comparative and fair tests	Variables in science-change and measure
	Control variables- (keep the same)
Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers	Observing
	Taking accurate measurements
	Awareness of scale and a range of units
	Correct use of apparatus including thermometer
	Safety in science

Working Scientifically Statement	Disciplinary Knowledge
Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	Table design and construction
	Use of secondary sources
	Classifying
	Identify patterns and relationships
Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	Table design and construction
	Creating keys
	Scientific drawing including labels
	Creating bar charts from data
Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	Oral presentations on findings
	Written explanations
	Oral presentations on findings

Year 5/6

Working Scientifically Statement	Disciplinary Knowledge
Planning different types of scientific enquiries to answer questions including recognising and controlling variables where necessary	Scientific hypotheses
	Developing Scientific models
	Scientific theories
	Distinguishing Pseudoscience from science
	Variables in science-change (independent) and measure (dependent)
	Control variables- (keep the same)
Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repat readings where appropriate	Making accurate observations
	Taking accurate measurements
	Awareness of scale and a range of units
	Correct use of a range of apparatus
	Safety in science
	Repeatability
	Awareness of sources of error in investigations

Working Scientifically Statement	Disciplinary Knowledge
Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.	Complex table design and construction
	Use of high quality and reliable secondary sources
	Classifying
	Create classification keys
	Identifying patterns in nature
	Scientific drawing including labels
	Creating bar charts from data
	Creating scatter graphs from data
	Ascertain the level of uncertainty in collected results
Identify scientific evidence that has been used to support or refute ideas or arguments	***Evolution of scientific ideas and models***
	The double-blind methodology
	The placebo effect

Working Scientifically Statement	Disciplinary Knowledge
Using test results to make predictions to set up further comparative and fair tests	***Interpreting relationships from scatter graphs***
	Validity of results
	Posing further questions based on data
	Improvements to procedures
	Reproducibility
Reporting and presenting findings from enquiries, including conclusions, casual relationships and explanations of and degree of trust in results, in oral and written form such as displays and other presentations	***Oral presentations on findings***
	Constructing a scientific conclusion linking collected evidence to substantive knowledge
	Illustrated presentations of research, techniques/methods and findings