8.1 Progression in KS1 & KS2 – Working scientifically (Observations)

Year 1	• Use simple scientific language to talk about or record what they have noticed • Use observations to make suggestions and/or ask questions • Look/observe closely and communicate changes over time • Observe closely using their senses about features or properties of things in the real world
Year 2	• Use simple scientific language from the Year 2 pos to talk about/record what they have noticed • Observe and describe simple processes/cycles/changes with several steps (e.g. growth cycle, simple food chain etc) • Observe closely and communicate with increasing accuracy, the features or properties of things in the real world
Year 3	• Observe and record relationships between structure and function (linked to Y3 pos) • Observe/record changes over time, making appropriate comments/findings • Explore/observe things in the local environment/real contexts and record observations
Year 4	• Use observations to suggest what to do next • Discuss ideas & develop descriptions from their observations using relevant scientific language and vocabulary (Y4 pos) • With support, observe and record relationships between structure and function or between different parts of a process
Year 5	• Discuss ideas & develop descriptions from their observations using relevant scientific language and vocabulary (Y5 pos) • With increasing independence, observe and record relationships between structure and function or between different parts of a process
Year 6	• Discuss ideas & develop descriptions from their observations using relevant scientific language and vocabulary (Y6 pos) • Observe and record relationships between structure and function or between different parts of a process

8.2 Progression in KS1 & KS2 – Working scientifically (Grouping and classifying)

Year 1	• Name/identify common examples and features of objects, materials or living things • With help, decide how to sort and group objects, materials and living things • Compare & contrast simple observable features/characteristics of objects, materials and living things
Year 2	• Name/identify common examples, common features or different uses of a objects, materials or living things • Sort and group objects, materials or living things by observable and/or behavioural features • Compare and contrast a variety of things (objects/materials/living things) - focusing on the similarities as well as the differences
Year 3	• Decide ways and give reasons for sorting, grouping, classifying, identifying things, objects, living things, processes or events based on specific characteristics • Compare/contrast & begin to consider the relationships between different things (e.g structures of plants, functions of plant parts, diets, skeletons of humans & other animals etc) • Record similarities as well as differences (e.g. what do all skeletons have? As well as the differences between skeletons)
Year 4	• Use guides or simple keys to classify/identify a variety of objects/materials/living things • Use own observations to identify and classify • With support, record similarities as well as differences and/or changes related to simple scientific ideas or processes or more complex groups of objects/living things/events (e.g. evaporation & condensation, different food chains, different electrical circuits etc)
Year 5	• With increasing independence, develops own guides or simple keys to classify/identify a variety of objects/materials/living things • With increasing independence, record similarities as well as differences and/or changes related to simple scientific ideas or processes or more complex groups of objects/living things/events (e.g. evaporation & condensation, different food chains, different electrical circuits etc)
Year 6	• Develops own guides or simple keys to classify/identify a variety of objects/materials/living things • Record similarities as well as differences and/or changes related to simple scientific ideas or processes or more complex groups of objects/living things/events (e.g. evaporation & condensation, different food chains, different electrical circuits etc)

8.3 Progression in KS1 & KS2 – Working scientifically (Questioning)

Year 1	• Ask simple questions about what they notice about the world around them • Demonstrate curiosity by the questions they ask
Year 2	• Raise their own questions based on or linked to things they have observed • With help/scaffolds, begin to ask questions with appropriate question stems (e.g. What will happen if……..?
Year 3	• Ask questions such as “what if we tried” or “what if we changed” • Begin to understand that some questions can be tested in the classroom and some cannot • With help, suggest/sort questions that can be explored, observed, tested or investigated further) • Ask relevant questions with appropriate questions stems
Year 4	• Ask/raise own relevant questions, with increasing confidence and independence, that can be explored, tested, observed or investigated further • Choose and select relevant questions that can be answered by research, or test)
Year 5	• Independently ask relevant questions that can be answered through different scientific enquiries • Recognise which questions cannot be answered in the classroom and those that can
Year 6	• Independently ask relevant questions that can be answered through different scientific enquiries • Use knowledge of familiar situations or scientific understanding to suggest further questions for investigation

8.4 Progression in KS1 & KS2 – Working scientifically (Communicating)

Year 1	• Use simple primary and secondary sources (such as objects, books & photographs) to find things out • Complete a pre-constructed table/chart using picture records or simple words • Record simple visual representations of observations made • Begin to use simple scientific language from Y1 pos
Year 2	• With support, record and communicate their findings in a range of ways to a variety of different audiences • Use simple scientific language with increasing accuracy in discussions (year 2 pos) • Record simple data with some accuracy to help in answering questions • With support/frameworks, make decisions about how to complete a variety of tables/charts
Year 3	• Record and present findings using simple scientific language and vocabulary (Y3 pos) (drawing, annotations, oral discussions, notes, pictorial representations, labelled diagrams, tables, charts, displays, presentations) • With support/scaffold, record and present data in a variety of ways to help in answering questions • Communicate findings in ways that are appropriate for different audiences
Year 4	• Record findings using relevant scientific language and vocabulary (Y4 pos), including discussions, oral & written explanations, notes, drawings, pictorial representations, labelled diagrams, tables, charts (scales agreed through discussion) • With help, select the most useful ways to collect, record, present, classify data from a range of choices
Year 5	• Record findings using relevant scientific vocabulary and language (Y5 pos), including discussions, oral & written explanations, notes, drawings, pictorial representations, labelled diagrams, tables, charts (scales beginning to be decided independently on more complex graphs) • With increasing independence, decide on the most suitable ways to collect, record, present, classify data • Chn prepare and produce line graphs based around simple data gathered
Year 6	• Record findings using relevant scientific vocabulary and language (Y6 pos), including discussions, oral & written explanations, notes, drawings, pictorial representations, labelled diagrams, tables, charts (scales decided independently on more complex graphs) • Decide on the most suitable ways to collect, record, present, classify data • Chn prepare and produce line graphs based around increasingly more complex data

8.5 Progression in KS1 & KS2 – Working scientifically (Using equipment and measures)

Year 1	• Measure using non-standard units • Use simple equipment accurately (egg timers, hand lenses)
Year 2	• Measure using non-standard and simple standard measures (e.g. cm, time) with increasing accuracy • Begin to make decisions about which equipment to use • Correctly and safely use equipment provided to make observations and/or take simple measurements
Year 3	• Collect data from their own observations & measurements using notes/simple tables/standard units • With support, decide what observations to make, how long to make them for, type of equipment to use • Make simple accurate measurements using whole number standard units, using a range of equipment
Year 4	• With increasing independence, make decisions about what observations to make, how long for, type of equipment used to make them • Learn & use new equipment, such as data loggers/measure in˚C with thermometers etc • Collect data from own observations and measurements, using notes/simple tables/standard units • Make accurate measurements using standard units, using a range of equipment and scales
Year 5	• Independently, make decisions about what observations to make, how long for, type of equipment used to make them • Use a variety of measuring equipment independently and accurately, and begins to deal with equipment failure independently • With increasing independence, decide when repeat readings are necessary and when to take them
Year 6	• Use a variety of measuring equipment independently and accurately, deals with equipment failure independently • Decide when repeat readings are necessary and when to take them

8.6 Progression in KS1 & KS2 – Working scientifically (Planning and testing)

Year 1	• With help, carry out a simple test/comparative test • With help, make a simple prediction
Year 2	• Carry out simple comparative tests, following a method with some independence • Make a simple prediction and give a reason why (even though it may not be correct) • With support, make suggestions on a method for setting up a simple comparative test
Year 3	• Make a prediction, with reasons, based on everyday experiences/scientific understanding • With support, set up simple practical enquiries, inc comparative and fair tests (e.g. make a choice from a list of variables to change when conducting a fair test) • With support, decide on the best way to answer their own questions
Year 4	• Carry out simple fair tests with increasing confidence investigating the effect of something on something else • With help, decide the most appropriate type of science enquiry they might use to answer scientific questions • Make a prediction based on the knowledge acquired from previous explorations/observations and apply it to a new situation • Explain planning decisions, including decisions about what to change/measure/observe (variables)
Year 5	• With increasing independence, decide on the most appropriate type of science enquiry they might use to answer scientific questions • Independently decide on and manage variables in a fair test, plan steps of an investigation
Year 6	• Decide on the most appropriate type of science enquiry they might use to answer scientific questions • Independently decide on and manage variables in a fair test and begin to recognise those which are not easy to manage, plan steps of an investigation

8.7 Progression in KS1 & KS2 – Working scientifically (Describing patterns/results)

Year 1	• Talk about and describe what has happened, using drawings, recordings, photos etc.
Year 2	• With support, begin to notice patterns in their data (e.g. order their findings, sequence best to worst etc.) • Recognise if results matched predictions • Use their recordings to talk about/describe what happened
Year 3	• With support/scaffold, describe and compare the effect of different factors on something • With support, look for changes and simple patterns in their observations, data, chart or graph • Use results to consider whether they match their prediction
Year 4	• Notice/find patterns in their observations/data (describe the effect of something on something else e.g. as I lengthen the ruler I notice the pitch gets lower)
Year 5	• With increasing independence, notice patterns in results. (e.g. explaining effect of something on something else, using increasingly accurate scientific understanding)
Year 6	• Notice patterns in results. (e.g. explaining effect of something on something else, using increasingly accurate scientific understanding)

8.8 Progression in KS1 & KS2 – Working scientifically (Explaining results)

Year 1	• Begin to use scientific language (from Y1 pos) to talk about what they have found out or why something happened
Year 2	• Begin to use simple scientific language to explain what they found out (Year 2 pos) • Give a simple, logical reason why something happened (e.g. I think……because……)
Year 3	• Use experience, some evidence or results to draw a simple conclusion to answer their original question • Write simple explanations of why things happened using simple scientific language and vocabulary (Y3 pos)
Year 4	• Begin to develop their ideas about relationships and interactions between things and explain them • Use relevant scientific language and vocabulary (Y4 pos) to begin to explain/say why something happened
Year 5	• Use relevant scientific language and vocabulary (Y5 pos) to begin to explain/say why something happened • With increasing independence, develop ideas about relationships and interactions between things and explain them
Year 6	• Use relevant scientific language and vocabulary (Y6 pos) to begin to explain/say why something happened • Develop ideas about relationships and interactions between things and explain them