Skills Progression Document Science: Working Scientifically	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Sort /group/ compare / classify /identify	▪ Name/identify common examples and some common features (Y1/2). ▪ With help, decide how to sort and group objects, materials or living things. ▪ Say/identify how different things change objects, materials or living things. ▪ Make comparisons between simple observable features/characteristics of objects, materials and living things. ▪ Say how things are similar or different. ▪ Recognise basic features of objects, materials and living things.	▪ Compare and contrast... a variety of things - focusing on the similarities as well as the differences] including how different things change over different periods of time [objects, materials or living things]. ▪ Sort and classify things according to a variety of different features (e.g. "I know it is living because it .. and it..."). ▪ Decide how to sort and group objects, materials or living things. ▪ Name/identify a variety of common features and/or uses for objects, materials or living things ▪ Name/Identify common examples and some common features.	▪ Compare and contrast functions, diets, teeth, changes over time. ▪ Record similarities and differences. ▪ Decide ways and give reasons for sorting, grouping, classifying, identifying things/objects, living things, processes or events based on specific characteristics.	▪ Make a simple guide to local living things. ▪ Use guides or simple keys to classify / identify [local small invertebrates]. ▪ Use their observations] to identify and classify. ▪ Record similarities, differences or changes related to simple scientific ideas or processes or more complex groups of objects/living things/events and begin to give reasons for these.	▪ Compare and contrast things beyond their locality. ▪ Compare more complex processes, systems, functions (e.g. life cycles of different living things, organ systems of different animals). ▪ Suggest reasons for similarities and differences.	▪ Compare and contrast things beyond their locality and analyse advantages/disadvantages, pros/cons of their findings. ▪ Use and develop classification systems, keys and other information records [databases] to classify or identify. ▪ Compare and contrast more complex processes, systems, functions (e.g. sexual and asexual reproduction).
Research *finding things out using a wide range of secondary sources of information and recognising that scientific ideas change and develop over time*	▪ Find out about the work of famous scientists (historical & modern day) (Y1/2). ▪ Use simple and appropriate secondary sources (such as books, photographs and videos) to find things out / find answers. (Y1/2).	▪ Find out about the work of famous scientists - historical & modern day (Y1/2). ▪ Use simple and appropriate secondary sources (such as books, photographs and videos) to find things out / find answers. (Y1/2).	▪ Create/invent design something based on what they have found out applying both research and/or practical experiences (Y3/4). ▪ Find out about the work of famous scientists historical and modern day (Y3/4).	▪ Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations. ▪ Create/invent/ design something based on what they have found out applying both	▪ Research the work of famous scientists (historical and modern day) and use this to find out how scientific ideas have changed over time. ▪ Find things out using a wide range of secondary sources of information.	▪ [Research the work of famous scientists (historical & modern day) and use this to] explain how scientific ideas have developed over time and had an impact on our lives.

	• Ask people questions (Y1/2).	• Ask people questions (Y1/2).	• Finding things out using secondary sources of information (Y3/4).	research and/or practical experiences. (Y3/4). • Find out about the work of famous scientists (historical & modern day) (Y3/4).		• Interview [people to find out information and collect data]. • Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact.
Modelling			• Act out something to represent something else about the world around us.	• Make a visual representation or a model of something to represent something they have seen or a process that is difficult to see. • Suggest their own ideas on a concept and compare these with models or images.	• Create simple models to describe scientific ideas (e.g. circulatory system). • Use simple models to describe scientific ideas (e.g. of movements of the Sun and Earth, solar system, shadow clocks, magnetic compasses for navigation).	• [Identify some positives and some limitations of models used to describe/explain scientific ideas]. • Use and make own versions of simple models to describe and explain scientific ideas (e.g. periscopes, simple lever, burglar alarm).
Recording of 'Explore / Observe' *developing a deeper understanding of a wide range of scientific ideas encountering more abstract ideas*	• Begin to communicate and record their findings using simple scientific language. • Begin to use simple scientific language to talk about what they have. • Use their own ideas to offer answers to questions. • Observe and discuss / talk about / draw/ keep records of changes over different periods of time. • Observe closely and discuss / talk about / draw /record the features/properties of things in the real world.	• Record and communicate their findings using simple scientific language. • Use their own ideas and their observations to offer answers to questions. • Observe and describe simple processes/cycles with several steps e.g. growth cycle, simple food chain, saying how living things depend on one another. • Recognise and describe a series of changes over time (e.g. growth). • Observe, and record make drawings to represent things in the real world with some accuracy.	• Observe and record relationships between structure and function (Y3/4). • Observe and record changes /stages over time (Y3/4). • Explore / observe things in the local environment / real contexts and record observations (Y3/4). • Record observations/explorations/ processes using simple scientific language.	• Suggest their own ideas on a concept and compare these with what they observe / find out. • Develop simple descriptions from their observations use relevant scientific language to discuss their ideas. • Observe and record relationships between structure and function (Y3/4). • Observe and record changes /stages over time (Y3/4). • Explore / observe things in the local environment / real contexts and record observations (Y3/4).	• Read, spell and pronounce scientific vocabulary correctly (Y5/6). • Use their developing scientific knowledge and understanding and relevant scientific language to discuss, communicate and explain their findings. • Explore more abstract systems/functions/changes and record their understanding of these (e.g. circulatory system). • Observe changes over different periods of time.	• Encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. • Use correct scientific knowledge and understanding and relevant scientific language to explain their findings and justify their scientific ideas. • Explore more abstract systems/functions /changes/behaviours and record their understanding of these (e.g. the relationship between diet, exercise, drugs, lifestyle and health; evolutionary changes; burning, rusting; reflection and refraction of light;

						friction, air resistance, gravity). ▪ Read, spell and pronounce scientific vocabulary correctly.
Questioning *asking their own questions about scientific phenomena*	▪ Ask simple questions stimulated by the world around them. ▪ Demonstrate curiosity by the questions they ask.	▪ Raise their own questions based on or linked to things they have observed.	▪ Explore their own ideas about 'what if….?' scenarios e.g. humans did not have skeletons. ▪ Begin to understand that some questions are testable/ can be tested in the classroom and some cannot. ▪ Within a group suggest relevant questions about what they observe and about the world around them.	▪ Choose/select a relevant question that can be answered [by research or experiment/test]. ▪ Ask/raise their own relevant questions with increasing confidence and independence about what they observe and about the world around them.	▪ Raise different kinds of questions (Y5/6) ▪ Refine a scientific questions so that it can be investigated. ▪ Ask their own pertinent questions.	▪ Recognise scientific questions that do not yet have definitive answers. ▪ Use observations/data gathered to construct a further (testable or research) question. ▪ Raise different kinds of questions (Y5/6).
Planning *using different types of scientific enquiry making decisions about and explaining choices for testing*	▪ Begin to choose/suggest ways to find answers. ▪ Perform simple tests/comparative tests. ▪ Talk about ways of answering their questions. ▪ Use different types of scientific enquiry. ▪ Experiment with a wide variety of things.	▪ Set up a comparative test. ▪ In a group choose/suggest ways in which they might answer scientific questions. ▪ Suggest a [practical way] to find answers to their questions [and listen to the suggestions of others. ▪ Use different types of scientific enquiry to answer their own questions.	▪ Help to decide about how to set up a simple fair test and begin to recognise when a test is not fair. ▪ As a group, begin to make some decisions about the best way of answering their questions. ▪ With support/as a group, set up simple practical enquiries incl. comparative and fair tests e.g. make a choice from a list of at least one variable that needs to be kept the same when conducting a fair test. ▪ Find/suggest a way to compare things e.g. materials, magnets.	▪ Investigate the effect of something on something else. ▪ Start to make their own decisions about the most appropriate type of science enquiry they might use to answer scientific questions [is a fair test the best way to investigate their question]. ▪ Recognise when a test is necessary. ▪ Carry out simple fair tests [with increasing confidence and make some of the planning decisions about what to change and measure/observe].	▪ Explain which variables need to be controlled and why. ▪ Make most of the planning decisions about] and carry out fair tests. ▪ Recognise when it is appropriate to carry out a fair test and plan how to set it up.	▪ Plan enquiries, including recognising and controlling variables where necessary. ▪ Select and plan the most appropriate type of science enquiry to use to answer scientific questions.

| Equipment and measurement
increasing complexity with increasing accuracy and precision make their own decisions about the data to collect | | | | | | |
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| **Equipment and measurement**

increasing complexity with increasing accuracy and precision make their own decisions about the data to collect | • Observe using non-standard units e.g. how many lolly sticks/cubes/handfuls, etc.
• Observe closely, using simple equipment (e.g. hand lenses, egg timers).
• Observe closely using their senses (Y1). | • Observe more accurately by measuring non-standard and standard units.
• Use their senses, simple measurements and equipment to gather data with increasing independence.
• Gather data to help in answering questions. | • Collect data from their own observations and measurements, using notes/ simple tables/standard units.
• Help to make some decisions about what observations to make, how long to make them for and the type of simple equipment that might be used.
• Make simple accurate measurements using whole number standard units, using a range of equipment.
• Gathering data in a variety of ways to help in answering questions.
• Learn how to use new equipment, e.g. data loggers.
• Explore observe with increased accuracy using a hand lens or microscope. | • Begin to identify where patterns might be found and use this to begin to identify what data to collect.
• Make more of the decisions about what observations to make, how long to make them for and the type of equipment that might be used.
• Learn how to use new equipment, such as data loggers & measure temperature in degrees Celsius (°C) using a thermometer.
• Understand precautions for working safely.
• Collect and record data from their own observations and measurements, using notes/simple tables/standard units, to help to make decisions.
• Make accurate measurements using standard units [and more complex units and parts of units] using a range of equipment. | • Recording data and results of increasing complexity (Y5/6).
• Follow safety guidelines (Y5/6).
• Make their own decisions about what observations to make or measurements to use and how long to make them for [recognising the need for repeat readings on some occasions].
• Decide how to record data from a choice of familiar approaches.
• Choose the most appropriate equipment to make measurements.
• Explain how to use equipment accurately. | • Recognise that data might be unreliable and describe how to make it more reliable.
• Make their own decisions about what measurements to take [and identify the ranges and intervals used].
• Take measurements, using a range of equipment, with increasing accuracy and precision.
• Choose and use the most appropriate equipment to support observation, make measurements, collect data.
• Record data and results of increasing complexity (Y5/6)
• Follow [and suggest] safety guidelines. |
| **Communicating Recording**

recording data, reporting findings, presenting findings | • Present their findings in a range of ways using templates where necessary e.g. talk/discuss; write/describe; draw pictures; annotated photographs; video; make/construct tables, charts and displays. | • Record and communicate their findings in a range of ways with increasing independence e.g. talk/discuss; write/describe; draw pictures; take photographs; video; make/construct a variety of tables, charts [including simple, bar | • Record and present findings using simple scientific language and vocabulary, including discussions, oral and written explanations, notes, drawings annotated, pictorial representations, labelled diagrams, simple tables, bar charts [using ranges and intervals (scales) | • Notice/find patterns in their observations and data.
• Describe the effect of something/different factors on something else.
• Help to make decisions about how to analyse their data. | • Record data and results of increasing complexity using tables, bar and line graphs, and models.
• Report findings from enquiries using discussion, drawings [annotated], oral and written explanations of results, and conclusions.
• Present findings in written form, displays | • Make decisions on the most appropriate format to present scientific data.
• Record data and results of increasing complexity using scientific diagrams and labels, recognised symbols, classification keys, tables, bar and line graphs, and models.
• Report findings from enquiries using |

		▪ Communicate their ideas to a range of audiences in a variety of ways. ▪ Begin to use some simple scientific language.	charts produced as a group and displays. ▪ Make some choices on how to communicate their ideas to a range of audiences in a variety of ways. ▪ Use simple scientific language in their recording. ▪ Record simple data with some accuracy. ▪ Record data to help in answering questions.	chosen for them] displays or presentations. ▪ Record, classify and present data in a variety of ways to help in answering questions. ▪ Communicate their findings in ways that are appropriate for different audiences. (Y3/4).		and other presentations (Y5/6)	discussion, drawings [annotated], oral and written explanations of results, explanations involving causal relationships, and conclusions. ▪ Present findings in written form, displays and other presentations (Y5/6).
Considering the results of an investigation / writing a conclusion	**Describe results** *Looking for patterns analysing functions, relationships and interactions more systematically*	▪ Sequence photographs of an event/observation. ▪ Observe changes over different periods of time and discuss/talk/record about what has happened. ▪ Talk/ discuss/ describe/record about what they have seen/ what has happened.	▪ With guidance, begin to notice patterns and relationships. ▪ Order their findings. ▪ Recognise if results matched predictions. ▪ Talk/ discuss/ describe/record with some accuracy what they have seen/ what has happened.	▪ Describe and compare the effect of different factors on something. ▪ With help, look for changes and patterns in their observations and data. ▪ Use their results to consider whether they meet predictions.	▪ Record findings using simple scientific language and vocabulary, including discussions, oral and written explanations, notes, drawings (annotated), pictorial representations, labelled diagrams, tables and bar charts [where intervals and ranges agreed through discussion], displays or presentations. ▪ Begin to select the most useful ways to record, classify and present data from a range of choices. ▪ Make decisions on how best to] communicate their findings in ways that are appropriate for different audiences. (Y3/4)	▪ Identify patterns that might be found in the natural environment. ▪ Look for patterns and notice relationships between things [and describe these].	▪ Look for different causal (cause and effect) relationships in their data (something effecting something else) and (describe the pattern succinctly). ▪ Identify patterns that might be found in the natural environment over long periods of time and describe how these have been used to develop scientific theories (e.g. evolution).
	Explain results *Draw conclusions based on evidence*	▪ Read and spell scientific vocabulary (Y1/2). ▪ Suggest how things happen. ▪ Use their observations and ideas to suggest answers to questions.	▪ Begin to explain how they know…use the word because "it is because…." (Y2) / suggest how and/or why things happen.	▪ Read and spell scientific vocabulary correctly and with confidence (Y3/4). ▪ Use their own experience and some evidence or results to draw simple	▪ Begin to develop their ideas about relationships and interactions. ▪ Reporting on findings from enquiries [beginning to identify the	▪ Use their developing scientific knowledge and understanding and relevant scientific language to explain their findings.	▪ Identify evidence that refutes or supports their ideas (Y5/6). ▪ Use their evidence to justify their ideas. ▪ Use correct scientific knowledge and

		▪ Begin to use simple scientific language to talk about what they have found out. ▪ Talk about what they have found out.	▪ Draw on use their results and their own experience to answer their questions. ▪ Begin to use simple scientific language to describe or explain what they have found out. ▪ Read and spell scientific vocabulary.	conclusions and answer questions. ▪ Talk about and record their findings using simple scientific language. ▪ Explain why things have happened.	scientific facts in their data]. ▪ Use relevant scientific language to discuss, communicate, report their findings. ▪ Read and spell scientific vocabulary correctly and with confidence (Y3/4).	▪ Draw conclusions based on their data and observations. ▪ Read, spell and pronounce scientific vocabulary correctly (Y5/6).	understanding and relevant scientific language to explain their findings. ▪ Read, spell and pronounce scientific vocabulary correctly (Y5/6).
	Trusting my results			▪ Say whether what happened was what they expected and notice any odd results that seem odd. ▪ Begin to recognise when a test is not fair and suggest improvements.	▪ Use results to suggest improvements, new questions and predictions for setting up further tests. ▪ With help, pupils should look for similarities and differences in their data [between different groups of results].	▪ Use test results to make predictions to set up further comparative and fair tests. ▪ Comment on how reliable their data is.	▪ Use their results to identify when further comparative tests and observations might be needed. ▪ Be able to explain differences in repeated measurements/readings or unexpected results. ▪ Recognise the limitations of some data.
Collaborating			▪ .Listen to the suggestions of others.	▪ Act out something to represent something else about the world around us.	▪ Make a visual representation or a model of something to represent something they have seen or a process that is difficult to see. ▪ Suggest their own ideas on a concept and compare these with models or images.		