Skills Progression Document - Science Working scientifically	**EYFS**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Sort /group/ compare / classify /identify	Look closely at similarities, differences, patterns and change. Develop ideas on how to group different things.	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/disadvantage s, 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). Ask people questions (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). Ask people questions (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) Finding things out using secondary sources of information (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 and/or practical experiences. (Y3/4). Find out about the work of famous scientists (historical & modern day) (Y3/4)	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 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	Create simple representations of events, people and objects			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 compass 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 idea*	Talks about why things happen and how things work Looks closely at similarities, differences, patterns and change. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter Explore and talk about different forces I can feel – gravity, push and pull toys	Begin to communicate and record their findings using simple scientific language. Begin to use simple scientific language to talk about what they have seen 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;

Questioning *asking their own questions about scientific phenomena*	Show curiosity about objects, events and people Ask questions about why things happen Engage in open-ended activity Find ways to solve problems / find new ways to do things / test their ideas Comments and asks questions about aspects of their familiar world such as the natural world, making observations and drawing pictures of animals and plants. Ask questions about the world through using their senses - feeling, hearing, seeing Ask questions about some important processes and changes in the natural world around them, including the seasons and changing states of matter.	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.

Communicating Recording *recording data, reporting findings, presenting findings*	Be able to make observations and communicate their work orally and by drawing pictures	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. Communicate their ideas to a range of audiences in a variety of ways. Begin to use some simple scientific language	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 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	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) 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).	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 and other presentations (Y5/6)	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 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	**Describe** **Results**		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)

CONSIDERING THE RESULTS	**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 improvement	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.		