Progression of skills for Science

Skills	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
enquiry	Show curiosity about objects, events and people (P & E). Engage in open-ended activity (P & E.) Take a risk, engage in new experiences and learn by trial and error (P&E.) Find ways to solve problems/find new ways to do things/test their ideas (C & TC.) Develop ideas of grouping, sequences, cause and effect (C & TC). Develop ideas of grouping, sequences, cause and effect (C & TC) Know about similarities and differences in relation to places, objects, materials and living things (ELG: The World). Use senses to explore the world around them (Playing & Exploring). Make links and notice patterns in their	Explore the world around them and raise their own simple questions. Experience different types of science enquiries, including practical activities. Begin to recognise different ways in which they might answer scientific questions. Carry out simple tests. Use simple features to compare objects, materials and living things and, with help, decide how to sort and group them (Identifying and classifying). Ask people questions and use simple secondary sources to find answers. Observe closely using simple equipment. With help, observe changes over time. With guidance, they should begin to notice patterns and relationships. Use simple measurements and equipment (eg hand lenses, egg timers) to gather data. Record simple data. Use their observations and ideas to suggest answers to questions. Talk about what they have found	Raise their own relevant questions about the world around them. Should be given a range of scientific experiences including different types of science enquiries to answer questions. Start to make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions. Set up simple practical enquiries, and comparative and fair tests. Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations. Make systematic and careful observations. Help to make decisions about what observations to make, how long to make them for and the type of simple equipment that may be used. Begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them. Take accurate measurements using standard units. Learn how to use a range of (new) equipment, such as data loggers / thermometers appropriately. Collect and record data from their own observations / measurements in a variety of ways: notes, bar charts and tables, standard units, drawings, labelled diagrams, keys and help to make decisions about how to analyse	Use their science experiences to explore ideas and raise different kinds of questions. Talk about how scientific ideas have developed over time. Select and plan the most appropriate type of scientific enquiry to use to answer scientific questions. Recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why. Use and develop keys and other information records to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environment. Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact. Make their own decisions about what observations to make, what measurements to use and how long to make them for. Look for different causal relationships in their data and identify evidence that refutes or supports their ideas. Choose the most appropriate equipment to make measurements with increasing precision and explain how to use it accurately. Take repeat measurements where appropriate. Decide how to record data and results of increasing complexity from a choice of familiar approaches: scientific diagrams and labels, classification keys, tables, scatter graphs, bar

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	experience (creative & Thinking Critically) Choose the resources they need for their chosen activities (Self Confidence & Self Awareness).. Develop their own narratives and explanations by connecting ideas or events (Speaking). Builds up vocabulary that reflects the breadth of their experience (Understanding 30-50m)	out and how they found it out. With help, they should record and communicate their findings in a range of ways and begin to use simple scientific language.		this data. With help, pupils should look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions. Use relevant simple scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences, including oral and written explanations, displays or presentations of results and conclusions. With support, they should identify new questions arising from the data, making predictions for new values within/beyond the data they have collected and finding ways of improving what they have already done.		and line graphs. Identify scientific evidence that has been used to support or refute ideas or arguments. Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas, use oral and written forms such as displays and other presentations to report conclusions, causal relationships and explanations of degree of trust in results. Use their results to make predictions and identify when further observations, comparative and fair tests might be needed.	
Working scientifically	Handle equipment and tools effectively (Moving & Handling)	Pupils should be taught to use the following practical scientific methods, processes and skills		Pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme		Pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme	

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		through the teaching of the programme of study content: -asking simple questions and recognising that they can be answered in different ways; -observing closely, using simple equipment; -performing simple tests; -identifying and classifying; -using their observations and ideas to suggest answers to questions; -gathering and recording data to help in answering questions.		of study content: -asking relevant questions and using different types of scientific enquiries to answer them; -setting up simple practical enquiries, comparative and fair tests; -making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers; -gathering, recording, classifying and presenting data in a variety of ways to help in answering questions; -recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables; -reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions; -using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions; -identifying differences, similarities or changes related to simple scientific ideas and processes; -using straightforward scientific evidence to answer questions or to support their findings.	of study content: -planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary; -taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate; -recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs; -using test results to make predictions to set up further comparative and fair tests; -reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations; -identifying scientific evidence that has been used to support or refute ideas or arguments.	
Asking questions and	Questions why things happen. (Speaking 30-50m)	Asking simple questions and recognising that they can be answered in different ways.		Asking relevant questions and using different types of scientific enquiries to answer them. Setting up simple practical enquiries,		Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.	

Progression of skills for Science

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carrying out fair and comparatives	Answer how and why questions about their experiences (Understanding). Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world (The World).	Performing simple tests. Children can: -explore the world around them, leading them to ask some simple scientific questions about how and why things happen; -begin to recognise ways in which they might answer scientific questions; -ask people questions and use simple secondary sources to find answers; -carry out simple practical tests, using simple equipment; -experience different types of scientific enquiries, including practical activities; -talk about the aim of scientific tests they are working on; with support, start to recognise a fair test.		comparative and fair tests. Children can: -start to raise their own relevant questions about the world around them in response to a range of scientific experiences; -start to make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions; -recognise when a fair test is necessary; -Help decide how to set up a fair test, making decisions about what observations to make, how long to make them for and the type of simple equipment that might be used; -set up and carry out simple comparative and fair tests.		Using test results to make predictions to set up further comparative and fair tests. Children can: -with growing independence, raise their own relevant questions about the world around them in response to a range of scientific experiences; -with increasing independence, make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions; -explore and talk about their ideas, raising different kinds of scientific questions; -ask their own questions about scientific phenomena; -select and plan the most appropriate type of scientific enquiry to use to answer scientific questions; -make their own decisions about what observations to make, what measurements to use and how long to make them for, and whether to repeat them; -plan, set up and carry out comparative and fair tests to answer questions, including recognising and controlling variables where necessary; -use their test results to identify when further tests and observations may be needed; -use test results to make predictions for further tests.	

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Observing and measuring changes	Closely observes what animals, people and vehicles do (The World 8-20m). Make observations of animals and plants and explain why some things occur, and talk about changes (The World)	Observing closely, using simple equipment. Children can: -observe the natural and humanly constructed world around them; -observe changes over time; -use simple measurements and equipment; -make careful observations, sometimes using equipment to help them observe carefully.		Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Children can: -make systematic and careful observations; -observe changes over time -use a range of equipment, including thermometers and data loggers; -ask their own questions about what they observe -where appropriate take measurements using standard units using a range of equipment.		Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Children can: -choose the most appropriate equipment to make measurements and explain how to use it accurately; -choose the most appropriate equipment to make measurements and explain how to use it accurately; -take repeat readings when appropriate; -understand why we take an average in repeat readings.	
Identifying, classifying, recording and presenting	Create simple representations of events, people and objects. (Being Imaginative 40-60m)	Identifying and classifying. Gathering and recording data to help in answering questions. Children can: -use simple features to compare objects, materials and living things;use simple features to		Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Children can:		Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. Children can: -independently group, classify and describe living things and materials;	

Progression of skills for Science

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		compare objects, materials and living things; -decide how to sort and classify objects into simple groups with some help;decide how to sort and classify objects into simple groups with some help; -record and communicate findings in a range of ways with support;record and communicate findings in a range of ways with support; -sort, group, gather and record data in a variety of ways to help in answering questions such as in simple sorting diagrams, pictograms, tally charts, block diagrams and simple tables.sort, group, gather and record data in a variety of ways to help in answering questions such as in simple sorting diagrams, pictograms, tally charts, block diagrams and simple tables.	-talk about criteria for grouping, sorting and classifying;talk about criteria for grouping, sorting and classifying; -group and classify things -use, read and spell scientific vocabulary correctly and with confidence, using their growing word reading and use, read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge; -Record findings using scientific language, drawings, labelled diagrams, keys, bar charts and tables.	-use and develop keys and other information records to identify, classify and describe living things and materials; -independently group, classify and describe living things and materials; -record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar graphs and line graphs.record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar graphs and line graphs.