

Whole school Curriculum Progression Map: SCIENCE – WORKING SCIENTIFICALLY

	EYFS	KS1		KS2			
	Three and Four-Year-Olds Reception Early Learning Goals	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Report and conclude	<u>Nursery</u> Begin to offer simple explanations for why things happen. <u>Reception</u> Represent scientific observations by mark making, drawing or creating simple charts and tables. Offer explanations for why things happen, making use of vocabulary, such as, because, then and next. Use a wider range of vocabulary. (CL) Understand 'why' questions, like: "Why do you think the caterpillar got so fat?" (CL) Learn new vocabulary. (CL) Use new vocabulary through the day. (CL)	The results are information that has been found out from an investigation. Talk about what they have done and say, with help, what they think they have found out. NC Objectives: Using their observations and ideas to suggest answers to questions.	The results are information that has been found out from an investigation and can be used to answer a question. Begin to notice patterns and relationships in their data and explain what they have done and found out using simple scientific language. NC Objectives: Using their observations and ideas to suggest answers to questions.	Results are information that has been discovered as part of an investigation. A conclusion is the answer to a question that uses the evidence collected. Use suitable vocabulary to talk or write about what they have done, what the purpose was and, with help, draw a simple conclusion based on evidence collected, beginning to identify next steps or improvements. NC Objectives: Using straightforward scientific evidence to answer questions or to support their findings Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.	Results are information, such as data or observations that have been found out from an investigation. A conclusion is the answer to a question that uses the evidence collected. Use scientific vocabulary to report and answer questions about their findings based on evidence collected, draw simple conclusions and identify next steps, improvements and further questions. NC Objectives: Using straightforward scientific evidence to answer questions or to support their findings. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.	The results are information, such as measurements or observations that have been collected during an investigation. A conclusion is an explanation of what has been discovered using evidence collected. Use relevant scientific vocabulary to report on their findings, answer questions and justify their conclusions based on evidence collected, identify improvements, further questions and predictions. NC Objectives: Identifying scientific evidence that has been used to support or refute ideas or arguments. Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a	The results are information, such as measurements or observations that have been collected during an investigation. A conclusion is an explanation of what has been discovered, using correct, precise terminology and collected evidence. Report on and validate their findings, answer questions and justify their methods, opinions and conclusions, and use their results to suggest improvements to their methodology, separate facts from opinions, pose further questions and make predictions for what they might observe. NC Objectives: Identifying scientific evidence that has been used to support or refute ideas or arguments.

	Articulate their ideas and thoughts in well-formed sentences.. (CL) Ask questions to find out more and to check they understand what has been said to them. .(CL) Listen to and talk about selected non-fiction to develop a deep familiarity with new knowledge and vocabulary. .(CL) Offer explanations for why things might happen, making use of recently introduced vocabulary from stories, non-fiction, rhymes and poems when appropriate. (CL) Make comments about what they have heard and ask questions to clarify their understanding (CL)			Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.	Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.	degree of trust in results, in oral and written forms such as displays and other presentations.	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.
Vocabulary	simple explanations, scientific observations, simple charts, tables, why, what, who, where	information, investigation. record, results	Results, information, investigation, questions, patterns, relationships, data, simple scientific language.	Results, information, investigation, conclusion, evidence, vocabulary, improvements.	Results, information, data, observations, investigation, conclusion question, evidence collected, scientific vocabulary, simple conclusions, next steps, improvements, further questions.	Results, information, data, observations, investigation, conclusion question, evidence collected, scientific vocabulary, simple conclusions, next steps, improvements, further questions, predictions	Results, information, data, observations, investigation, conclusion question, evidence collected, scientific vocabulary, simple conclusions, next steps, improvements, further questions, predictions, methodology

Gather and record data	<u>Nursery</u> Data can be numbers, marks or objects. Say what they notice about a set of data. <u>Reception</u> Data can be recorded in tables and pictograms. Record data in simple tables and pictograms.	Data can be recorded and displayed in different ways, including tables, pictograms and drawings. With support, gather and record simple data in a range of ways (data tables, diagrams, Venn diagrams). NC Objectives: Gathering and recording data to help in answering questions.	Data can be recorded and displayed in different ways, including tables, charts, pictograms and drawings. Use a range of methods (tables, charts, diagrams and Venn diagrams) to gather and record simple data with some accuracy. NC Objectives: Gathering and recording data to help in answering questions.	Data can be recorded and displayed in different ways, including tables, charts, graphs and labelled diagrams. Data can be used to provide evidence to answer questions. Gather and record findings in a variety of ways (diagrams, tables, charts and graphs) with increasing accuracy. NC Objectives: 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.	Data can be recorded and displayed in different ways, including tables, charts, graphs, keys and labelled diagrams. Gather, record, classify and present observations and measurements in a variety of ways (pictorial representations, timelines, diagrams, keys, tables, charts and graphs). NC Objectives: 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.	Data can be recorded and displayed in different ways, including tables, bar and line charts, classification keys and labelled diagrams. Gather and record data and results of increasing complexity, selecting from a range of methods (scientific diagrams, labels, classification keys, tables, graphs and models). NC Objectives: Recording data and results of increasing complexity, using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.	Data can be recorded and displayed in different ways, including tables, bar and line charts, scatter graphs, classification keys and labelled diagrams. Choose an appropriate approach to recording accurate results, including scientific diagrams, labels, timelines, classification keys, tables, models and graphs (bar, line and scatter), linking to mathematical knowledge. NC Objectives: Recording data and results of increasing complexity, using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.
Vocabulary	Data, numbers, marks, record, table, pictograms	Data, record, gather, data, tables, pictograms, diagrams, Venn diagrams	Data, record, gather, data, tables, pictograms, diagrams, Venn diagrams, accuracy	Data, record, gather, data, tables, pictograms, diagrams, Venn diagrams, charts, , graphs, labelled diagrams, , evidence, questions, increasing accuracy	Data, record, gather, classify, observations, data, tables, pictograms, diagrams, Venn diagrams, charts, , graphs, labelled diagrams, , evidence, questions, increasing accuracy	Data, record, gather, classify, observations, bar and line charts, classification keys, labelled diagrams, complex results. Methods, evidence, questions, increasing accuracy	Data, record, gather, classify, observations, bar and line charts, classification keys, labelled diagrams, appropriate, complex results. Methods, evidence, questions, increasing accuracy, mathematical knowledge

Questioning	<u>Nursery</u> Question words include why, what, when and how. Ask or answer a simple scientific question. <u>Reception</u> Question words include who, why, what, when, where and how. Ask a relevant scientific question to find out more, explain how things work and why they might happen. NC Objectives: Three and Four-Year-Olds Communication and Language: Understand “why” questions, like: “Why do you think the caterpillar got so fat?” RECEPTION Communication and Language	Question words include what, why, how, when, who and which. Ask simple scientific questions. NC Objectives: Asking simple questions and recognising that they can be answered in different ways.	Questions can help us find out about the world. Ask and answer scientific questions about the world around them. NC Objectives: Asking simple questions and recognising that they can be answered in different ways.	Questions can help us find out about the world and can be answered in different ways. Ask questions about the world around them and explain that they can be answered in different ways. NC Objectives: Asking relevant questions and using different types of scientific enquiries to answer them.	Questions can help us find out about the world and can be answered using scientific enquiry. Ask relevant scientific questions, independently, about the world around them and begin to identify how they can answer them. NC Objectives: Asking relevant questions and using different types of scientific enquiries to answer them.	Questions can help us find out about the world and can be answered using a range of scientific enquiries. Ask a wide range of relevant scientific questions that broaden their understanding of the world around them and identify how they can answer them. NC Objectives: Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.	Questions can help us find out about the world and can be answered using a range of scientific enquiries, including fair tests, research and observation. Ask and answer deeper and broader scientific questions about the local and wider world that build on and extend their own and others' experiences and knowledge. NC Objectives: Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.

	Ask questions to find out more and to check they understand what has been said to them. Early learning Goals Communication and Language Make comments about what they have heard and ask questions to clarify their understanding.						
Measurement	Nursery Place two to three items in order based on length, height or capacity. Reception Simple equipment can be used to measure distance, height, weight and time. With support, use simple equipment, such as timers, rulers and containers, to measure length, height, capacity and time.	Simple equipment is used to take measurements and observations. Examples include metre sticks, measuring tapes, egg timers and hand lenses. With support, use simple equipment to measure and make observations. NC Objectives: Gathering and recording data to help in answering questions.	Simple equipment is used to take measurements and observations. Examples include timers, hand lenses, metre sticks and trundle wheels. Use simple equipment to measure and make observations. NC Objectives: Gathering and recording data to help in answering questions.	Equipment is used to take measurements in standard units. Examples include data loggers plus sensors, timers (seconds, minutes and hours), thermometers (°C) and metre sticks (millimetres, centimetres and metres). Taking repeat readings can increase the accuracy of the measurement. Take measurements in standard units, using a range of simple equipment. NC Objectives: Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.	Equipment is used to take measurements in standard units. Examples include data loggers plus sensors, timers (seconds, minutes and hours), thermometers (°C), and metre sticks, rulers or trundle wheels (millimetres, centimetres, metres). Take accurate measurements in standard units, using a range of equipment. NC Objectives: Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.	Specialised equipment is used to take measurements in standard units. Examples include data loggers plus sensors, such as light (lux), sound (dB) and temperature (°C); timers (seconds, minutes and hours); thermometers (°C), and measuring tapes (millimetres, centimetres, metres). Take increasingly accurate measurements in standard units, using a range of chosen equipment. NC Objectives: Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.	Specialised equipment is used to take accurate measurements in standard units. Examples include data loggers plus sensors, such as light (lux), sound (dB) and temperature (°C); timers (seconds, minutes and hours); thermometers (°C) and measuring tapes (millimetres, centimetres, metres). Take accurate, precise and repeated measurements in standard units, using a range of chosen equipment. NC Objectives: Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.

Investigation	Nursery Find different ways to do things when playing and exploring and use all their senses in hands on exploration of natural materials. Reception When we try things out to see if they work, it is called a test. Observe how activities are going and adapt their ideas if necessary. NC Objectives: Three and Four-Year-Olds Understanding the World Explore how things work. RECEPTION Communication and Language Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen.	Simple tests can be carried out by following a set of instructions. With support, follow instructions to perform simple tests and begin to talk about what they might do or what might happen. NC Objectives: Performing simple tests.	Tests can be carried out by following a set of instructions. A prediction is a guess at what might happen in an investigation. Follow a set of instructions to perform a range of simple tests, making simple predictions for what might happen and suggesting ways to answer their questions. NC Objectives: Performing simple tests.	Tests can be set up and carried out by following or planning a set of instructions. A prediction is a best guess for what might happen in an investigation based on some prior knowledge. Set up and carry out some simple, comparative and fair tests, making predictions for what might happen. NC Objectives: Setting up simple practical enquiries, comparative and fair tests.	Scientific enquiries can be set up and carried out by following or planning a method. A prediction is a statement about what might happen in an investigation, based on some prior knowledge or understanding. A fair test is one in which only one variable is changed and all others remain constant. Begin to independently plan, set up and carry out a range of comparative and fair tests, making predictions and following a method accurately. NC Objectives: Setting up simple practical enquiries, comparative and fair tests.	A method is a set of clear instructions for how to carry out a scientific investigation. A prediction is a statement about what might happen in an investigation based on some prior knowledge or understanding. Plan and carry out a range of enquiries, including writing methods, identifying variables and making predictions based on prior knowledge and understanding. NC Objectives: Using test results to make predictions to set up further comparative and fair tests.	A method is a set of clear instructions for how to carry out a scientific investigation, including what equipment to use and observations to make. A variable is something that can be changed during a fair test. A prediction is a statement about what might happen in an investigation based on some prior knowledge or understanding. Plan and carry out a range of enquiries, including writing methods, identifying and controlling variables, deciding on equipment and data to collect and making predictions based on prior knowledge and understanding. NC Objectives: Using test results to make predictions to set up further comparative and fair tests.
Observation	Nursery Talk about some of the things that they have observed using simple scientific vocabulary. Reception With support, observe, record and talk about materials and living things.	Objects, materials and living things can be looked at and compared. Observe objects, materials, living things and changes over time, sorting and grouping them based on their features. NC Objectives:	Objects, materials and living things can be looked at, compared and grouped according to their features. Observe objects, materials, living things and changes over time, sorting and grouping them based on their features and	An observation involves looking closely at objects, materials and living things, which can be compared and grouped according to their features. Make increasingly careful observations, identifying similarities, differences	An observation involves looking closely at objects, materials and living things. Observations can be made regularly to identify changes over time. Begin to choose which observations to make and for how long and make systematic, careful observations and	An observation involves looking closely at objects, materials and living things. Accurate observations can be made repeatedly or at regular intervals to identify changes over time. Within a group, decide which observations to make, when and for how long,	An observation involves looking closely at objects, materials and living things. Accurate observations can be made repeatedly or at regular intervals to identify changes over time, identify processes and make comparisons. Independently decide

	NC Objectives: Three and Four-Year-Olds Communication and Language: Use a wider range of vocabulary. Understanding the World Talk about what they see, using a wide vocabulary RECEPTION Communication and Language Learn new vocabulary Articulate their ideas and thoughts in well-formed sentences. Use new vocabulary in different contexts.	Observing closely, using simple equipment. Identifying and classifying	explaining their reasoning. NC Objectives: Observing closely, using simple equipment. Identifying and classifying	and changes and making simple connections. NC Objectives: Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Identifying differences, similarities or changes related to simple scientific ideas and processes.	comparisons, identifying changes and connections. NC Objectives: Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Identifying differences, similarities or changes related to simple scientific ideas and processes.	and make systematic and careful observations, using them to make comparisons, identify changes, classify and make links between cause and effect. NC Objectives: 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.	which observations to make, when and for how long and make systematic and careful observations, using them to make comparisons, identify changes, classify and make links between cause and effect. NC Objectives: 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.
--	---	--	---	---	--	---	---