

	Show curiosity and ask questions EYF5	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		Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary	
Asking questions and recognising they can be answered in different ways	While playing and exploring, the children ask 'I wonder...' questions. With support, the children develop their ideas for answering questions.	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		What's exploring the world children develop their ability to ask simple questions e.g. What materials are hard or soft? How are things similar and different? Children answer questions developed with the teacher often through a scenario. The children are involved in planning how to use resources provided to answer the questions using different types of enquiry, helping them to recognise that there are different ways in which questions can be answered.	What's exploring the world children develop their ability to ask simple questions using scientific language e.g. How would you classify these materials and why? Using given resources children decide how to gather evidence to answer a question. Children start to recognise when to use secondary sources if practical work is not appropriate. They start to identify the type of enquiry that they have chosen to answer their question.	Children use their prior knowledge to raise their own relevant questions using a range of question stems e.g. Are all rocks as hard as each other? Using given resources children decide how to gather evidence to answer a question. Children start to recognise when to use secondary sources if practical work is not appropriate. They start to identify the type of enquiry that they have chosen to answer their question.	Children raise their own relevant questions e.g. What material would make the best air ruffs? Using given resources children decide how to gather evidence to answer a question. Children recognise when to use secondary sources if practical work is not appropriate. They can identify the type of enquiry that they have chosen to answer their question.	Children begin to independently ask scientific questions . This may be stimulated by a scientific experience or involve asking questions based on their developed understanding following an enquiry. Given a wide range of resources the children decide for themselves how to gather evidence to answer a scientific question. Children recognise when to use secondary sources if practical work is not appropriate. They choose a type of enquiry and justify their choice .	Children independently ask scientific questions . This may be stimulated by a scientific experience or involve asking questions based on their developed understanding following an enquiry. Given a wide range of resources the children decide for themselves how to gather evidence to answer a scientific question. Children recognise when to use secondary sources if practical work is not appropriate. They choose a type of enquiry and justify their choice .
Making observations and taking measurements	Make observations using their senses and simple equipment to measure EYF5	Observing closely, using simple 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		Making measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate	
	Explore the natural and made world using their senses. The children use magnifying glasses or tablets with magnifiers to make observations and smaller pieces of equipment such as syringes and pipettes. With support, make comparisons, using hands and feel and other non-standard measures e.g. building blocks and beakers.	Children observe closely (over time) to identify, make comparisons or notice change e.g. observe a tree over the seasons. Children use appropriate senses and equipment e.g. using eyes and a hand lens. Children take measurements by comparing.	Children observe closely (over time) to identify, make comparisons or notice change e.g. observe a seed germinate. Children use appropriate senses and equipment e.g. magnifying glasses or digital microscopes. Children take measurements by measuring using non-standard units.	Children begin to make systematic and careful observations (over time) using a range of equipment to take accurate measurements. They use a range of equipment e.g. rulers, stop watches, thermometers, Newton meters. Take accurate measurements of length, time, temperature and capacity using standard units.	Children make systematic and careful observations (over time) using a range of equipment to take accurate measurements. They use a range of equipment e.g. rulers, stop watches, thermometers and Newton meters, data loggers . Take accurate measurements of length, time, temperature and capacity using standard units.	Children select measuring equipment to give the most precise results with increasing accuracy and precision. Finding an average result (may require removal of an outlier) . They use a range of equipment e.g. ruler, tape measure or trundle wheel, force meter with a suitable scale. During an enquiry, they make decisions e.g. whether they need to take repeat readings (for testing); increase the sample size (pattern seeking); adjust the observation period and frequency (observing over time); or check further secondary sources (researching) in order to get accurate data (closer to the true value).	Children select measuring equipment to give the most precise results with increasing accuracy and precision. Finding an average result (may require removal of an outlier) . They use a range of equipment e.g. ruler, tape measure or trundle wheel, force meter with a suitable scale. During an enquiry, they make decisions e.g. whether they need to take repeat readings (for testing); increase the sample size (pattern seeking); adjust the observation period and frequency (observing over time); or check further secondary sources (researching) in order to get accurate data (closer to the true value).
Engaging in practical enquiry to answer questions	Make direct comparisons and use their observations to help them to answer their questions EYF5	Perform Simple Tests/Identifying and classifying		Setting up simple practical enquiries, comparative and fair tests		Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary	
	While playing and exploring, the children, try out using resources to answer a question. The children test things out to make comparisons e.g. Does the red car go further than the blue car?	They carry out tests to classify, comparative tests; pattern seeking enquiries; and make observations over time, e.g. What materials are hard or soft? A comparative test is performed by changing a variable that is qualitative e.g. the type of material, shape of the parachute. This leads to a ranked outcome. Children use their observations and testing to compare objects, materials and living things. They sort and group these things, identifying their own criteria for sorting. They use simple secondary sources (such as identification sheets) to name living things. They describe the characteristics they used to identify a living thing.	They carry out tests to classify, comparative tests; pattern seeking enquiries; and make observations over time e.g. Do plants need light and water to stay healthy? Children use their observations and testing to compare objects, materials and living things. They sort and group these things, identifying their own criteria for sorting. They use simple secondary sources (such as identification sheets) to name living things. They describe the characteristics they used to identify a living thing.	They follow their plan to carry out observations and tests to classify, comparative and simple fair tests; observations over time; and pattern seeking to answer a question e.g. What materials work best to connect across a gap in a circuit? A fair test is performed by changing a variable that is quantitative e.g. the thickness of the material or the area of the canopy. This leads to establishing a causative relationship. Make and test a prediction.	They follow their plan to carry out observations and tests to classify, comparative and simple fair tests; observations over time; and pattern seeking, to answer a question e.g. What materials work best to connect across a gap in a circuit? Make and test a prediction.	Children plan different types of fair tests to answer questions, including recognising and controlling variables where necessary e.g. Does the surface area of a windmill affect the speed that it turns? Select an appropriate variable to test a hypothesis.	Children plan different types of fair tests to answer questions, including recognising and controlling variables where necessary e.g. Does the surface area of a windmill affect the speed that it turns? Select an appropriate variable to test a hypothesis.
Recording and presenting evidence	Recording their observations EYF5	Gathering and recording data to help in answering questions		Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions		Recording data and results in increasing complexity using scientific diagrams and labels, classification keys.	
	The children, sometimes, draw and write simple labels to record their observations. With support, they record their observations and comparisons e.g. using simple prepared tables, taking photographs, using sorting rings and boxes.	They record their observations using photographs, videos, simple drawings, labelled diagrams or in writing e.g. drawing a diagram showing the parts of a plant. They record their measurements e.g. using prepared tables, pictograms, tally charts and block graphs (if taught already). They classify using simple prepared tables and sorting rings.	They record their observations using photographs, videos, drawings, labelled diagrams or in writing. They record their measurements using prepared tables, pictograms, tally charts and block graphs. They classify using simple prepared tables and sorting rings.	Children are supported to present the same data in different ways . They record their observation e.g. using photographs, videos, pictures, labelled diagrams or writing. They record their measurements e.g. using tables, tally charts and bar charts (given templates, if required, to which they can add headings). They record classifications e.g. using tables, Venn diagrams, Carroll diagrams.	Children are supported to present the same data in different ways . The children sometimes decide how to record and present evidence . They record their observations e.g. using photographs, videos, pictures, labelled diagrams, observational drawings, labelled scientific diagrams or writing. They record their measurements e.g. using tables, tally charts and bar charts (given templates, if required, to which they can add headings). They record classifications e.g. using tables, Venn diagrams, Carroll diagrams.	The children decide how to record and present evidence and present the same data in different ways. They record observations e.g. using annotated photographs, videos, labelled diagrams, observational drawings, labelled scientific diagrams or writing. They record measurements e.g. using tables, tally charts, bar charts, line graphs and scatter graphs. They record classifications e.g. using tables, Venn diagrams, Carroll diagrams and classification keys.	The children decide how to record and present evidence and present the same data in different ways. They record observations e.g. using annotated photographs, videos, labelled diagrams, observational drawings, labelled scientific diagrams or writing. They record measurements e.g. using tables, tally charts, bar charts, line graphs and scatter graphs. They record classifications e.g. using tables, Venn diagrams, Carroll diagrams and classification keys.
Answering questions and concluding	Use their observations to help them to answer their questions EYF5	Using their observations and ideas to suggest answers to questions		Using straightforward scientific evidence to answer questions or to support their findings. Identifying differences, similarities or changes related to simple scientific ideas and processes. Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions		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 degree of trust in results, in oral and written forms such as displays and other presentations.	
	The children talk about what they have observed. The children demonstrate and talk about what they have found out. They sometimes, talk about what they have found out from secondary sources, including non-fiction texts. The children notice and talk about how they made a difference to an outcome e.g. "My car went further when I pushed it harder". The children make direct comparisons or use their recorded observations to communicate what they have found out and answer the question, where appropriate.	Children use their experiences of the world around them to suggest appropriate answers to questions. They are supported to relate these to their evidence e.g. observations they have made, measurements they have taken or information they have gained from secondary sources. The children recognise 'biggest and smallest', 'best and worst' etc. from their data.	Children use their experiences of the world around them to suggest appropriate answers to questions. They are supported to relate these to their evidence e.g. observations they have made, measurements they have taken or information they have gained from secondary sources. The children recognise 'biggest and smallest', 'best and worst' etc. from their data.	Children answer their own and others' questions based on observations they have made, measurements they have taken or information they have gained from secondary sources. The answers are consistent with the evidence. They draw conclusions based on their evidence and current subject knowledge.	Children answer their own and others' questions based on observations they have made, measurements they have taken or information they have gained from secondary sources. The answers are consistent with the evidence. They draw conclusions based on their evidence and current subject knowledge.	Children answer their own and others' questions based on observations they have made, measurements they have taken or information they have gained from secondary sources. When doing this, they discuss whether other evidence e.g. from other groups, secondary sources and their scientific understanding, supports or refutes their answer. They talk about how their scientific ideas change due to new evidence that they have gathered. They talk about how new discoveries change scientific understanding. In their conclusions, children identify causal relationships and patterns in the natural world from their evidence; identify results that do not fit the overall pattern; and explain their findings using their subject knowledge.	Children answer their own and others' questions based on observations they have made, measurements they have taken or information they have gained from secondary sources. When doing this, they discuss whether other evidence e.g. from other groups, secondary sources and their scientific understanding, supports or refutes their answer. They talk about how their scientific ideas change due to new evidence that they have gathered. They talk about how new discoveries change scientific understanding. In their conclusions, children identify causal relationships and patterns in the natural world from their evidence; identify results that do not fit the overall pattern; and explain their findings using their subject knowledge.
Evaluating and raising further questions and predictions	EYF5	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		They identify ways in which they adapted their method as they progressed or how they would do it differently if they repeated the enquiry. Children use their evidence to suggest values for different items tested using the same method e.g. the distance travelled by a car on an additional surface. Following a scientific experience, the children ask further questions which can be answered by extending the same enquiry.	They identify ways in which they adapted their method as they progressed or how they would do it differently if they repeated the enquiry. Children use their evidence to suggest values for different items tested using the same method e.g. the distance travelled by a car on an additional surface. Following a scientific experience, the children ask further questions which can be answered by extending the same enquiry.	They identify ways in which they adapted their method as they progressed or how they would do it differently if they repeated the enquiry. Children use their evidence to suggest values for different items tested using the same method e.g. the distance travelled by a car on an additional surface. Following a scientific experience, the children ask further questions which can be answered by extending the same enquiry.	They identify ways in which they adapted their method as they progressed or how they would do it differently if they repeated the enquiry. Children use their evidence to suggest values for different items tested using the same method e.g. the distance travelled by a car on an additional surface. Following a scientific experience, the children ask further questions which can be answered by extending the same enquiry.	They evaluate, for example, the choice of method used, the control of variables, the precision and accuracy of measurements and the credibility of secondary sources used. They identify any limitations that reduce the trust they have in their data. Children use the scientific knowledge gained from enquiry work to make predictions they can investigate using comparative and fair tests.	They evaluate, for example, the choice of method used, the control of variables, the precision and accuracy of measurements and the credibility of secondary sources used. They identify any limitations that reduce the trust they have in their data. Children use the scientific knowledge gained from enquiry work to make predictions they can investigate using comparative and fair tests.
Communicating findings	EYF5	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
				They communicate their findings to an audience using relevant scientific language and illustrations.	They communicate their findings to an audience using relevant scientific language and illustrations.	They communicate their findings to an audience both orally and in writing, using appropriate scientific vocabulary.	They communicate their findings to an audience both orally and in writing, using appropriate scientific vocabulary.