

SCIENCE CURRICULUM MAP WORKING SCIENTIFICALLY SKILLS PROGRESSION



National Curriculum	Year 3	Year 4	Year 5	Year 6
Asking questions	Asking relevant questions and using different types of scientific enquiries to answer them.	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	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where
	Consider prior knowledge when asking questions. They	Consider prior knowledge when asking questions. They	necessary.	necessary.
	independently use a range of question stems. Where appropriate they answer these questions.	independently use a range of question stems. Where appropriate they answer these questions. The children answer questions posed	Children independently ask scientific questions. This may be stimulated by a scientific experience or involve asking further questions based on their	Children independently ask scientific questions. This may be stimulated by a scientific experience or involve asking further questions based on their
	The children answer questions posed by the teacher.	by the teacher.	developed understanding following an enquiry.	developed understanding following an enquiry.
	Given a range of resources, the children decide for themselves how to gather evidence to answer the question. They recognise when secondary sources can be used to answer questions that cannot be answered through practical work. They identify the type of enquiry that they have chosen to answer their question.	Given a range of resources, the children decide for themselves how to gather evidence to answer the question. They recognise when secondary sources can be used to answer questions that cannot be answered through practical work. They identify the type of enquiry that they have chosen to answer their question.	Given a wide range of resources the children decide for themselves how to gather evidence to answer a scientific question. They choose a type of enquiry to carry out and justify their choice. They recognise how secondary sources can be used to answer questions that cannot be answered through practical work.	Given a wide range of resources the children decide for themselves how to gather evidence to answer a scientific question. They choose a type of enquiry to carry out and justify their choice. They recognise how secondary sources can be used to answer questions that cannot be answered through practical work.

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Curriculum Making	Making systematic and careful	Making systematic and careful	Taking measurements, using a	Taking measurements, using a range
observations	observations and, where		Taking measurements, using a	Taking measurements, using a range
and taking	-	observations and, where	range of scientific equipment,	of scientific equipment, with
measurements	appropriate, taking accurate	appropriate, taking accurate	with increasing precision, taking	increasing precision, taking repeat
	measurements using standard	measurements using standard	repeat readings when	readings when appropriate.
	units, using a range of	units, using a range of	appropriate.	
	equipment, including	equipment, including		The children select measuring
	thermometers and data loggers.	thermometers and data loggers.	The children select measuring	equipment to give the most precise
			equipment to give the most	results, e.g. ruler, tape measure or
	The children make systematic	The children make systematic	precise results, e.g. ruler, tape	trundle wheel, force meter with a
	and careful observations.	and careful observations.	measure or trundle wheel, force	suitable scale.
			meter with a suitable scale.	
	They use a range of equipment	They use a range of equipment		During an enquiry, they make
	for measuring length, time,	for measuring length, time,	During an enquiry, they make	decisions e.g. whether they need to:
	temperature and capacity. They	temperature and capacity. They	decisions e.g. whether they need	take repeat readings (fair testing);
	use standard units for their	use standard units for their	to: take repeat readings (fair	increase the sample size (pattern
	measurements.	measurements.	testing); increase the sample size	seeking); adjust the observation
			(pattern seeking); adjust the	period and frequency (observing over
			observation period and frequency	time); or check further secondary
			(observing over time); or check	sources (researching); in order to get
			further secondary sources	accurate data (closer to the true
			(researching); in order to get	value).
			accurate data (closer to the true	
			value).	

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Engaging in practical enquiry to answer questions.		Setting up simple practical enquiries, comparative and fair tests. The children select from a range of practical resources to gather evidence to answer questions generated by themselves or the teacher. They follow their plan to carry out: observations and tests to classify; comparative and simple fair tests; observations over time; and pattern seeking.	Planning different types of scientific enquiries to answer question, including recognising and controlling variables where necessary. The children select from a range of practical resources to gather evidence to answer their questions. They carry out fair tests, recognising and controlling variables. They decide what observations or measurements to make over time and for how long. They look for patterns and relationships using a suitable sample.	Planning different types of scientific enquiries to answer question, including recognising and controlling variables where necessary. The children select from a range of practical resources to gather evidence to answer their questions. They carry out fair tests, recognising and controlling variables. They decide what observations or measurements to make over time and for how long. They look for patterns and relationships using a suitable sample.

National Curriculum	Year 3	Year 4	Year 5	Year 6
Recording and presenting	Gathering, recording, classifying and presenting data in a variety of	Gathering, recording, classifying and presenting data in a variety of ways	Recording data and results of increasing complexity using	Recording data and results of increasing complexity using
evidence	ways to help in answering questions.	to help in answering questions.	scientific diagrams and labels, classification keys, tables,	scientific diagrams and labels, classification keys, tables,
	questions.	Recording findings using simple	scattergraphs, bar and line graphs.	scattergraphs, bar and line graphs.
	Recording findings using simple	scientific language, drawings, keys,		
	scientific language, drawings, keys,	bar charts and tables.	The children decide how to record	The children decide how to record
	bar charts and tables.		and present evidence. They record	and present evidence. They record
		The children sometimes decide how	observations e.g. using annotated	observations e.g. using annotated
	The children sometimes decide how	to record and present evidence.	photographs, videos, labelled	photographs, videos, labelled
	to record and present evidence.	They record their observation e.g.	diagrams, observational drawings,	diagrams, observational drawings,
	They record their observation e.g.	using photographs, videos, pictures,	labelled scientific diagrams or	labelled scientific diagrams or
	using photographs, videos, pictures,	labelled diagrams or writing. They	writing. They record	writing. They record
	labelled diagrams or writing. They	record their measurements e.g.	measurements e.g. using tables,	measurements e.g. using tables,
	record their measurements e.g.	using tables, tally charts and bar	tally charts, bar charts, line graphs	tally charts, bar charts, line graphs
	using tables, tally charts and bar	charts (given templates, if required,	and scatter graphs. They record	and scatter graphs. They record
	charts (given templates, if required, to which they can add headings).	to which they can add headings). They record classifications e.g. using	classifications e.g. using tables, Venn diagrams, Carroll diagrams	classifications e.g. using tables, Venn diagrams, Carroll diagrams
	They record classifications e.g. using	tables, Venn diagrams, Carroll	and classification keys.	and classification keys.
	tables, Venn diagrams, Carroll	diagrams.	and classification keys.	and classification keys.
	diagrams.	diagrams.	Children present the same data in	Children present the same data in
	alagrams.	Children are supported to present	different ways in order to help with	different ways in order to help with
	Children are supported to present	the same data in different ways in	answering the question.	answering the question.
	the same data in different ways in	order to help with answering the	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
	order to help with answering the	question.		
	question.	,		

National Curriculum	Year 3	Year 4	Year 5	Year 6
Answering questions and concluding	Using straightforward scientific evidence to answer questions or to support their findings.	Using straightforward scientific evidence to answer questions or to support their findings.	Identifying scientific evidence that has been used to support or refute ideas and arguments.	Identifying scientific evidence that has been used to support or refute ideas and arguments.
551151441115	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.	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.	Children answer their own and others' questions based on observations they have made; measurement 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	Children answer their own and others' questions based on observations they have made; measurement 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,
	Identifying differences,	Identifying differences, similarities or changes related to simple	understanding, supports or refutes their answer.	supports or refutes their answer.
	similarities or changes related to simple scientific ideas and processes.	scientific ideas and processes. Children interpret their data to generate simple comparative	They talk about how their scientific ideas change due to new evidence that they have gathered.	They talk about how their scientific ideas change due to new evidence that they have gathered.
	Children interpret their data to generate simple comparative statements based on their	statements based on their evidence. They begin to identify naturally occurring patterns and	They talk about how new discoveries change scientific understanding.	They talk about how new discoveries change scientific understanding.
	evidence. They begin to identify naturally occurring patterns and causal relationships.	Causal relationships. Using results to draw simple conclusions, make predictions for	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and
	Using results to draw simple conclusions, make predictions for new values, suggest	new values, suggest improvements and raise further questions.	degree of trust in results, in oral and written forms such as displays and other presentations.	written forms such as displays and other presentations.
	improvements and raise further questions.	They identify ways in which they adapted their method as they	In their conclusions, children: identify causal relationships and patterns in the	In their conclusions, children: identify causal relationships and patterns in the natural world from their evidence;
	They identify ways in which they adapted their method as they progressed or how they would do it differently if they repeated the enquiry.	progressed or how they would do it differently if they repeated the enquiry	natural world from their evidence; identify results that do not fit the overall pattern; and explain their findings using their subject knowledge.	identify results that do not fit the overall pattern; and explain their findings using their subject knowledge.

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Evaluating	Using results to draw simple	Using results to draw simple	Reporting and presenting findings from	Reporting and presenting findings
and raising further	conclusions, make predictions	conclusions, make predictions	enquiries, including conclusions, causal	from enquiries, including conclusions,
questions	for new values, suggest	for new values, suggest	relationships and explanations of and	causal relationships and explanations
and	improvements and raise further	improvements and raise further	degree of trust in results, in oral and	of and degree of trust in results, in
predictions.	questions.	questions.	written forms such as displays and other presentations.	oral and written forms such as displays and other presentations.
	They identify ways in which they	They identify ways in which they		
	adapted their method as they	adapted their method as they	They evaluate, for example, the choice	They evaluate, for example, the choice
	progressed or how they would	progressed or how they would do	of method used, the control of	of method used, the control of
	do it differently if they repeated	it differently if they repeated the	variables, the precision and accuracy of	variables, the precision and accuracy
	the enquiry.	enquiry.	measurements and the credibility of	of measurements and the credibility
			secondary sources used.	of secondary sources used.
	Using results to draw simple	Using results to draw simple		
	conclusions, make predictions	conclusions, make predictions	They identify any limitations that	They identify any limitations that
	for new values, suggest	for new values, suggest	reduce the trust they have in their data.	reduce the trust they have in their
	improvements and raise further	improvements and raise further	I de la companya de l	data.
	questions.	questions.	Using test results to make predictions	
	Children use their evidence to	Children use their evidence to	to set up further comparative and fair tests.	Using test results to make predictions
	suggest values for different items	suggest values for different items	lesis.	to set up further comparative and fair tests.
	tested using the same method,	tested using the same method,	Children use the scientific knowledge	tests.
	e.g. the distance travelled by a	e.g. the distance travelled by a	gained from enquiry work to make	Children use the scientific knowledge
	car on an additional surface.	car on an additional surface.	predictions they can investigate using	gained from enquiry work to make
			comparative and fair tests.	predictions they can investigate using
	Following a scientific experience,	Following a scientific experience,	F	comparative and fair tests.
	the children ask further	the children ask further questions		·
	questions which can be	which can be answered by		
	answered by extending the same	extending the same enquiry.		
	enquiry.			

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Communicating their findings	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of
	They communicate their findings to an audience both orally and in writing, using appropriate	They communicate their findings to an audience both orally and in writing, using appropriate	trust in results, in oral and written forms such as displays and other presentations. They communicate their findings to	trust in results, in oral and written forms such as displays and other presentations. They communicate their findings to
	scientific vocabulary.	scientific vocabulary.	an audience using relevant scientific language and illustrations.	an audience using relevant scientific language and illustrations.