

Our Scientific Adventure



Working Scientifically Skills Progression

Asking questions

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Asking simple questions and recognising that		Asking relevant questions and	d using different types of	Planning different types of scienti	fic enquiries to answer
they can be answered in	different ways•	scientific enquiries to answer	them•	auestions, including recognising an	d controlling variables where
				necessary*	
I can ask a few simple	l can ask simple	l can ask some relevant	l can ask relevant	I am beginning to explore ideas	I can explore ideas and ask my
auestions about the	auestions about the	questions about the world	auestions about the	and ask my own questions about	own questions about scientific
world around us	world around us	around me	world around us	scientific phenomena	phenomena
I can begin to use some	I can begin to use	l can use some different	l can use different types	I am beginning to plan different	I can plan different types of
different types of	different types of	types of enquiry to answer	of scientific enquiry to	types of scientific enquiry to	scientific enquiry to answer
enquiry to answer	enquiry to answer	questions	answer questions	answer questions	Questions
auestions	auestions				
		I am beginning to decide	I am beginning to decide	I am beginning to decide which	I can decide which variables to
		which type of enquiry is	which type of enquiry is	variables to control	control
		best to answer my question	best to answer my		
			auestion		









Making predictions

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Make simple predictions from questions posed		Make predictions that is usually supported by scientific knowledge		Make predictions that use supporting scientific evidence	
		Use results to make new predictions for new values•		Use test results to make predictions to set up further comparative and fair tests•	

<u>Setting up tests</u>

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Performing simple tests•		Setting up simple practical enquiries, comparative tests and fair tests		Choosing appropriate scientific enquiries to answer a question including controlling variables	
Identifying and classifying•					
I can begin to perform	I can perform simple	I can set up some simple	I can set up some simple	l can sometimes set up a range	I can set up a range of
simple tests	tests	practical enquiries,	practical enquiries,	of comparative and fair tests	comparative and fair tests
		including comparative and	including comparative and		
I can begin to discuss	I can discuss my ideas	fair tests	fair tests	I am beginning to explain which	I can explain which variables
my ideas				variables need to be controlled	need to controlled and why
		I am beginning to help		and why (control and	(control and independent
		decide which variables to keep the same (control	l can help decide which variables to keep the	independent variables)	variables)
		variables) and which to	same (control variables)	I am beginning to choose an	l can choose an appropriate
		change (independent	and which to change	appropriate outcome to measure	outcome to measure
		variable)	(independent variable)	(dependent variable)	(dependent variable)
				l am beginning to suggest	I can suggest improvements to
				improvements to my test, giving	my test, giving reasons
				reasons	







Observing and measuring

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Observing closely, using simple equipment•		Making systematic and careful observations and, where appropriate, taking accurate measurements using		Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when	
		thermometers and data logge	ers•	abbi abi waa	
I can begin to say what	I can say what I saw	I can make systematic and	l can make systematic	I can make accurate and precise	I can make accurate and
I saw in an	in an investigation	careful observations	and careful observations	measurements	precise measurements
investigation					
	l can say what I am	I can make suggestions on	l can make suggestions	I can decide what to observe,	I can decide what to observe,
l can measure with	looking for and what I	what to observe	on what to observe	how long to observe for	how long to observe for
non-standard units and	am measuring				
can begin to use simple		I am starting to decide how	I am starting to decide	I am beginning to decide whether	I am beginning to decide
standard units	l can measure with	long to collect	how long to collect	to repeat observations	whether to repeat
	non-standard units	observations for	observations for		observations
l can use simple	and can begin to use			I can take accurate and precise	
eauipment	simple standard units	I am beginning to take	l can take accurate	measurements using standard	I can take accurate and
		accurate measurements	measurements using	units, N, g, kg, mm, cm, mins,	precise measurements using
l can observe changes	l can use simple	using standard units, e.g.	standard units, e.g. mm,	secs, cm²V, km/h, m per sec, m/	standard units, N, g, kg, mm,
over time	equipment	mm, cm, m, ml, l, °C,	cm, m, ml, l, °C, seconds	sec	cm, mins, secs, cm²V, km/h, m
		seconds minutes	minutes		per sec, m/ sec
	l can observe changes	l can identify which	l can identify which	I can select equipment on my	
	over time	equipment to use and use	equipment to use and use	own and explain how to use it	I can select equipment on my
		new equipment	new equipment	accurately	own and explain how to use it
	I can begin to notice				accurately
	patterns	I can look for patterns and	I can look for patterns		
		relationships	and relationships		







Recording data

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Gathering and recording data to help in		Recording findings using simple scientific language,		Recording data and results of incr	easing complexity using
answering auestions•		drawings, labelled diagrams,	keys, bar charts and	scientific diagrams and labels, clas	ssification keys, tables, scatter
		tables•		graphs, bar and line graphs•	
		Gathering, recording, classifying and presenting data in			
	1	a variety of ways to help in	answering questions•		
I am beginning to	I can collect simple	I am beginning to collect	I can collect data in a	I am beginning to record complex	I can record complex data
collect simple data	data.	data in a variety of ways,	variety of ways, including	data using scientific diagrams	using scientific diagrams and
		including labelled diagrams,	labelled diagrams, bar	and labels, classification keys,	labels, classification keys,
I am beginning to	I can record data in a	bar charts and tables.	charts and tables.	tables, bar and line graphs	tables, bar and line graphs
record data in a table	table my teacher has				
my teacher has	provided.	I am beginning to help	I can help decide how to	I am beginning to choose the	I can choose the most
provided		decide how to record data	record data.	most appropriate way to present	appropriate way to present my
	l can communicate my			my data with some guidance	data independently
l can begin to	findings in a variety				
communicate my	of ways.				
findings in a variety of					
ways					









Interpreting and communicating results (including identifying and classifying)

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Using observations and ic	leas to suggest	Reporting on findings from enquiries, including oral and		Reporting and presenting findings from enquiries including	
answers to questions•		written explanations, displays or presentations of		conclusions, causal relationships in oral and written forms such as	
		results and conclusions•		displays and other presentations•	
		Using results to draw simple conclusions•			
		Using straightforward scienti	fic evidence to answer		
		auestions or to support their	findings•		
		Identify differences, similariti	es or changes related to		
		simple scientific ideas and pr	ocesses		
I can begin to talk	I can talk about what	I am beginning to	l can communicate	I am beginning to communicate	l can communicate findings
about what I have	I have found out	communicate findings using	findings using simple	findings using detailed scientific	using detailed scientific
found out		simple scientific language	scientific language	language	language
	I can explain how I				
I can begin to explain	carried out my enquiry	I am beginning to draw	l can draw simple	I am beginning to draw scientific,	I can draw scientific, causal
how I carried out my		simple conclusions based	conclusions based on the	causal conclusions using the	conclusions using results of
enquiry	l can suggest simple	on the results of my	results of my enquiry	results of an enquiry to justify	enquiry to justify my ideas
	changes to my enquiry	enquiry		my ideas	
I can begin to suggest			l can answer my		I can explain my conclusion
simple changes to my	l can identify a	l am beginning to answer	auestions using the	I am beginning to distinguish	using scientific knowledge and
enquiry	variety of objects,	my questions using the	results of my enquiry	opinion and facts	understanding
	materials and living	results of my enquiry			
I can begin to identify	things.		I can my findings to make	I am beginning to use my	I can distinguish opinion and
a variety of objects,		I am beginning to use my	new predictions, suggest	findings to make predictions and	facts
materials and living	l can compare, sort	findings to make new	improvements and think	set up further enquiries	
things	and group a range of	predictions, suggest	of new questions		I can use my findings to make
	objects, materials and	improvements and think of		l can begin to use abstract	predictions and set up further
I can begin to compare,	living things.	new auestions	I can begin to think of	models to explain my ideas	enquiries
sort and group a range			cause and effect in my		
of object, materials and		I am beginning to think of	explanations	I am beginning to use keys and	I can begin to use abstract
living things		cause and effect in my		other information records to	models to explain my ideas
		explanations		classify and describe living	

		I can talk about and	things, materials and other	I can use keys and other
	I am beginning to talk	identify differences and	scientific phenomena	information records to classify
	about and identify	similarities scientific		and describe living things,
	differences and similarities	phenomena	I am beginning to develop my	materials and other scientific
	in scientific phenomena		own keys and other information	phenomena
		I can identify simple	records to classify and describe	
	I am beginning to identify	changes related to simple		I can develop my own keys and
	simple changes related to	scientific phenomena	I am beginning to identify	other information records to
	simple scientific phenomena		changes related to scientific	classify and describe
			phenomena	
				I can identify changes related
				to scientific phenomena



<u>Evaluating</u>

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Use Ques		Use results to suggest improvements and raise further auestions•		Report and present explanations of and a degree of trust in results in oral and written presentations•	
		I am beginning to use my	I am beginning to use my	I am beginning to suggest	I can suggest improvements to
		findings to make new	findings to make new	improvements to my test, giving	my test, giving reasons
		predictions, suggest	predictions, suggest	reasons	
		improvements and think of	improvements and think		l can evaluate my
		new questions	of new questions	I am beginning to evaluate my	investigation using the words
				investigation using the words	validity and reliability
				validity and reliability with some	independently most of the
				support	time
				I am beginning to explain the	
				application my results could	
				have	



Secondary sources and research

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Use simple secondary sources to find answers.		Recognise when and how secondary sources might help		Recognise which secondary sources will be most useful to	
		to answer questions that can	not be answered through	research ideas	
		practical investigations			
				Identify scientific evidence that ha	as been used to support or
				refute ideas or arguments•	
I can begin to find	I can find information	I can begin to decide when	l can begin to decide	I am beginning to recognise	I can recognise which
information to help me	to help me from	research will help in my	when research will help in	which secondary source will	secondary source will be most
from books, computers	books, computers and	enquiry	my enquiry	most useful to my research	useful to my research
and other familiar	other familiar sources				
sources		I am beginning to carry out	I can carry out simple	I can begin to carry out research	I can carry out research
		simple research on my own	research on my own	independently	independently