

# Our Scientific Adventure



# Working Scientifically Skills Progression

#### Asking *<i>auestions*

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	
Show curiosity about the world around	Asking simple questions and		Asking relevant ouestions and using		Planning different types of scientific		
them.	recognising that th	ney can be answered	different types of scie	entific enquiries to	enquiries to answer q	enquiries to answer questions, including	
Ask 'how' and 'why' questions to find	in different ways*		answer them•		recognising and contro	olling variables where	
out more.					necessary*		
Notice and ask questions about							
differences.							
Listen attentively and respond to what							
they hear with relevant questions.							
I can explore the natural world around	l can ask a few	l can ask simple	l can ask some	l can ask relevant	I am beginning to	I can explore ideas	
me.	simple auestions	questions about	relevant questions	auestions about the	explore ideas and	and ask my own	
	about the world	the world around	about the world	world around us	ask my own	questions about	
can begin to ask questions about	around us	us	around me		questions about	scientific phenomena	
things that interest me to find out				l can use different	scientific phenomena		
more.	I can begin to	I can begin to use	l can use some	types of scientific		I can plan different	
	use some	different types of	different types of	enquiry to answer	I am beginning to	types of scientific	
I can notice and talk about change.	different types	enquiry to answer	enquiry to answer	auestions	plan different types	enquiry to answer	
	of enquiry to	auestions	auestions		of scientific enquiry	Questions	
I can listen carefully to the person who	answer questions			I am beginning to	to answer questions		
s talking and ask questions linked to			I am beginning to	decide which type of		I can decide which	
what they have said.			decide which type of	enquiry is best to	I am beginning to	variables to control	
			enquiry is best to	answer my question	decide which		
			answer my question		variables to control		
(2)			2				



#### Making predictions

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Begin to show an understanding of	Make simple predic	tions from auestions	Make predictions that	is usually supported	Make predictions tha	t use supporting
cause and effect (that changing	posed		by scientific knowledg	e	scientific evidence	
something may effect something						
else).			Use results to make r	new predictions for		nake predictions to set
Start to think about what might			new values•		up further comparativ	ve and fair tests•
happen next.						
I can suggest what might happen						
next.						

### <u>Setting up tests</u>

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Respond to new experiences.	Performing simp	ole tests•	Setting up simple	practical enquiries,	Choosing appropriate scientific enquiries to	
Solve real problems.			comparative tests	and fair tests	answer a question including	g controlling variables
Explore and sort materials.	Identifying and	classifying•				
Know some similarities and differences						
between the natural world around						
them and contrasting environments,						
drawing on their experiences and what						
has been read in class.						
I explore the natural world and solve	l can begin to	l can perform	l can set up	l can set up some	l can sometimes set up a	l can set up a range
real problems.	perform	simple tests	some simple	simple practical	range of comparative and	of comparative and
	simple tests		practical	enquiries, including	fair tests	fair tests
l have my own ideas.		l can discuss my	enquiries,	comparative and		
	l can begin to	ideas	including	fair tests	I am beginning to explain	I can explain which
	discuss my		comparative and		which variables need to	variables need to
	ideas		fair tests		be controlled and why	controlled and why
				I can help decide	(control and independent	(control and
			I am beginning to	which variables to	variables)	independent
			help decide	keep the same		variables)
			which variables	(control variables)	I am beginning to choose	
			to keep the same	and which to	an appropriate outcome	l can choose an
			(control	change	to measure (dependent	appropriate outcome
			variables) and	(independent	variable)	to measure
			which to change	variable)		(dependent variable)
			(independent		I am beginning to suggest	
			variable)		improvements to my test,	l can suggest
					giving reasons	improvements to my
						test, giving reasons







### Observing and measuring

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	
Use all their senses in hands-on	Observing closely,	using simple	Making systematic and	Making systematic and careful		Taking measurements, using a range of	
exploration of natural materials.	eauipment•		observations and, when	re appropriate, taking	scientific equipment, with increasing accuracy		
Explore the world around them,			accurate measurement	s using standard	and precision, taking rep	and precision, taking repeat readings when	
making observations and drawing			units, using a range of	equipment, including	appropriate•		
pictures of animals and plants.			thermometers and data	a loggers•			
Realise their actions have an							
effect on the world.							
Understand some important							
processes and changes in the							
natural world around them.							
Develop their small motor skills							
so that they can use a range of							
small tools.						-	
I can use all my senses and look	l can begin to	l can say what l	l can make	l can make	l can make accurate	l can make accurate	
closely.	say what I saw in	saw in an	systematic and	systematic and	and precise	and precise	
	an investigation	investigation	careful observations	careful	measurements	measurements	
I notice similarities, differences				observations			
and change.	l can measure	l can say what l	l can make		I can decide what to	l can decide what	
	with non-	am looking for	suggestions on what	l can make	observe, how long to	to observe, how	
I can use materials and tools	standard units	and what I am	to observe	suggestions on	observe for	long to observe for	
safely and confidently.	and can begin to	measuring		what to observe			
	use simple		I am starting to		I am beginning to	I am beginning to	
	standard units	l can measure	decide how long to	I am starting to	decide whether to	decide whether to	
		with non-	collect observations	decide how long to	repeat observations	repeat observations	
	l can use simple	standard units	for	collect			
	equipment	and can begin to		observations for	l can take accurate	l can take accurate	
		use simple	I am beginning to		and precise	and precise	
	l can observe	standard units	take accurate	l can take accurate	measurements using	measurements using	
	changes over		measurements using	measurements using	standard units, N, g,	standard units, N,	
	time		standard units, e.g.	standard units, e.g.	kg, mm, cm, mins,	g, kg, mm, cm, mins,	

l can use simple equipment	mm, cm, m, ml, l, °C, seconds minutes I can identify which	mm, cm, m, ml, l, °C, seconds minutes	secs, cm²V, km/h, m per sec, m/ sec	secs, cm²V, km/h, m per sec, m/ sec
l can observe	equipment to use	I can identify which	l can select equipment	I can select
changes over time	and use new	eauipment to use	on my own and explain	equipment on my
	equipment	and use new	how to use it	own and explain
I can begin to		equipment	accurately	how to use it
notice patterns	I can look for			accurately
	patterns and	I can look for		
	relationships	patterns and		
		relationships		







# Recording data

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	
Use drawing to represent	Gathering and recordi	ng data to help in	Recording findings using	Recording findings using simple scientific		Recording data and results of increasing	
their ideas.	answering questions•		language, drawings, lab	elled diagrams, keys,	complexity using scier	ntific diagrams and	
Return to and build on			bar charts and tables•		labels, classification	keys, tables, scatter	
their previous learning,					graphs, bar and line g	raphs•	
refining ideas and			Gathering, recording, cl	assifying and			
developing their ability to			presenting data in a va	presenting data in a variety of ways to help			
represent them.		•	in answering questions•				
l can create simple	I am beginning to	I can collect simple	I am beginning to	I can collect data in	I am beginning to	I can record complex	
representations of people	collect simple data	data.	collect data in a	a variety of ways,	record complex data	data using scientific	
and objects.			variety of ways,	including labelled	using scientific	diagrams and labels,	
	I am beginning to	I can record data in	including labelled	diagrams, bar charts	diagrams and labels,	classification keys,	
	record data in a	a table my teacher	diagrams, bar charts	and tables.	classification keys,	tables, bar and line	
	table my teacher	has provided.	and tables.		tables, bar and line	graphs	
	has provided			I can help decide	graphs		
		l can communicate	I am beginning to help	how to record data.		I can choose the most	
	l can begin to	my findings in a	decide how to record		I am beginning to	appropriate way to	
	communicate my	variety of ways.	data		choose the most	present my data	
	findings in a variety				appropriate way to	independently	
	of ways				present my data		
					with some guidance		









# Interpreting and communicating results (including identifying and classifying)

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Offer explanations for why things might happen, making use of recently introduced vocabulary from stories, non-fiction, rhymes and poems when appropriate. Offer their own ideas, using recently introduced vocabulary.	Using observations and ideas to suggest answers to auestions•		Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Using results to draw simple conclusions. Using straightforward scientific evidence to answer questions or to support their findings. Identify differences, similarities or changes related to simple scientific ideas and processes		Reporting and presenting findings from enauiries including conclusions, causal relationships in oral and written forms such as displays and other presentations.	
I learn and use new science	I can begin to talk	l can talk about	I am beginning to	I can communicate	I am beginning to	l can communicate
words.	about what I have	what I have found	communicate findings	findings using simple	communicate	findings using detailed
	found out	out	using simple scientific	scientific language	findings using	scientific language
I can talk about things like			language		detailed scientific	
plants, animals, seasons	l can begin to	I can explain how I		I can draw simple	language	I can draw scientific,
and changing materials.	explain how I	carried out my	I am beginning to draw	conclusions based on		causal conclusions
	carried out my	enquiry	simple conclusions	the results of my	I am beginning to	using results of
	enquiry		based on the results of	enquiry	draw scientific,	enquiry to justify my
		l can suggest	my enquiry		causal conclusions	ideas
	l can begin to	simple changes to		I can answer my	using the results of	
	suggest simple	my enquiry	I am beginning to	auestions using the	an enquiry to	l can explain my
	changes to my		answer my questions	results of my	justify my ideas	conclusion using
	enquiry	l can identify a	using the results of my	enquiry		scientific knowledge
		variety of objects,	enquiry		I am beginning to	and understanding
	l can begin to	materials and		I can my findings to	distinguish opinion	
	identify a variety of	living things.	I am beginning to use	make new	and facts	l can distinguish
	objects, materials		my findings to make	predictions, suggest		opinion and facts
	and living things	l can compare,	new predictions,	improvements and	I am beginning to	
		sort and group a	suggest improvements	think of new	use my findings to	I can use my findings
		range of objects,		auestions	make predictions	to make predictions

l can	begin to	materials and	and think of new		and set up further	and set up further
	are, sort and	living things.	auestions	I can begin to think	enquiries	enquiries
-	o a range of	5 5		of cause and effect		
objec	ct, materials		I am beginning to think	in my explanations	l can begin to use	I can begin to use
and l	iving things		of cause and effect in		abstract models to	abstract models to
			my explanations	I can talk about and	explain my ideas	explain my ideas
				identify differences		
			I am beginning to talk	and similarities	I am beginning to	I can use keys and
			about and identify	scientific phenomena	use keys and other	other information
			differences and		information records	records to classify
			similarities in scientific	I can identify simple	to classify and	and describe living
			phenomena	changes related to	describe living	things, materials and
				simple scientific	things, materials	other scientific
			I am beginning to	phenomena	and other scientific	phenomena
			identify simple changes		phenomena	
			related to simple			I can develop my own
			scientific phenomena		I am beginning to	keys and other
					develop my own	information records to
					keys and other	classify and describe
					information records	
					to classify and	I can identify changes
					describe	related to scientific
						phenomena
					I am beginning to	
					identify changes	
					related to scientific	
					phenomena	



#### <u>Evaluating</u>

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



### Secondary sources and research

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	
Explore and talk about the	Use simple secor	ndary sources to	Recognise when and how	secondary sources might	Recognise which secondary sources will be most		
world around them,	find answers.		help to answer questions	that cannot be	useful to research idea	useful to research ideas	
referring back to things			answered through practic	al investigations			
they have learnt from						nce that has been used	
stories and non-fiction						eas or arguments•	
texts.		1		1			
I can explore and talk	l can begin to	I can find	I can begin to decide	I can begin to decide	I am beginning to	I can recognise which	
about the natural world	find information	information to	when research will help	when research will help	recognise which	secondary source will	
using what I know from	to help me	help me from	in my enquiry	in my enquiry	secondary source will	be most useful to my	
stories and non-fiction	from books,	books,			most useful to my	research	
texts.	computers and	computers and	I am beginning to carry	l can carry out simple	research		
	other familiar	other familiar	out simple research on	research on my own		l can carry out	
	sources	sources	my own		I can begin to carry	research independently	
					out research		
					independently		