

Working scientifically specifies the understanding of the nature, processes and methods of science for each year group. It should not be taught as a separate strand. Types of scientific enquiry should include: observing over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing (controlled investigations); and researching using secondary sources. Pupils should seek answers to questions through collecting, analysing and presenting data.



Curriculum Aims

The national curriculum for science aims to ensure that all pupils:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them
- are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future

EYFS

Understanding the World: The Natural World

- Explore the natural world around them, making observations and drawing pictures of animals and plants
- 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
- Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter

Communication and Language Listening, Attention and Understanding

- Make comments about what they have heard and ask questions to clarify their understanding

KS1

During **Years 1 and 2**, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

Y1

Animals including humans
Plants
Materials
Seasonal change

W1: asking simple questions and recognising that they can be answered in different ways;	W2: observing closely, using simple equipment;	W3: performing simple tests;	W4: identifying and classifying;	W5 & W7: using their observations and ideas to suggest answers to questions;	W6 & W8: gathering and recording data to help in answering questions.
Lesson 2	Lesson 6		Lesson 1 Lesson 3 Lesson 5	Lesson 2	
Lesson 5	Lesson 3 Lesson 4 Lesson 5		Lesson 1 Lesson 2	Lesson 7	
Lesson 4	Lesson 5 Lesson 6	Lesson 4 Lesson 5 Lesson 6	Lesson 1 Lesson 2 Lesson 3 Lesson 4	Lesson 5 Lesson 6	Lesson 5 Lesson 6
	Lesson 5	Lesson 5	Lesson 1 Lesson 2 Lesson 3 Lesson 4	Lesson 5	Lesson 5

KS1

During **Years 1 and 2**, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

Y2

Animals including humans
Plants
Living things and their habitats
Materials

	W1: asking simple questions and recognising that they can be answered in different ways;	W2: observing closely , using simple equipment;	W3: performing simple tests ;	W4: identifying and classifying ;	W5 & W7: using their observations and ideas to suggest answers to questions;	W6 & W8: gathering and recording data to help in answering questions.
Animals including humans		Lesson 4 Lesson 5	Lesson 4 Lesson 5	Lesson 1 Lesson 2 Lesson 3	Lesson 4 Lesson 5	Lesson 4 Lesson 5
Plants		Lesson 1 Lesson 2 Lesson 3 Lesson 4 Lesson 5		Lesson 1 Lesson 2	Lesson 4	
Living things and their habitats	Lesson 4	Lesson 2 Lesson 4	Lesson 4	Lesson 1 Lesson 2 Lesson 3 Lesson 4 Lesson 5 Lesson 6	Lesson 4	Lesson 4
Materials	Lesson 3 Lesson 4	Lesson 3 Lesson 4 Lesson 5	Lesson 3 Lesson 4 Lesson 5	Lesson 1 Lesson 2	Lesson 3 Lesson 4 Lesson 5	Lesson 3 Lesson 4

LKS2

During **Years 3** and **4**, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

Y3

Animals including humans
Plants
Light
Rocks
Forces and magnets

	W1: asking relevant questions and using different types of scientific enquiries to answer them;	W2 & W3: setting up simple practical enquiries, comparative and fair tests;	W4: making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers;	W5, W6 & W7: gathering, recording, classifying and presenting data in a variety of ways to help in answering questions;	W8: recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables;	W8: reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions;	W9: using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions;	W10: identifying differences, similarities or changes related to simple scientific ideas and processes;	W11: using straightforward scientific evidence to answer questions or to support their findings.
Animals including humans	Lesson 2	Lesson 2	Lesson 2		Lesson 2	Lesson 2			
Plants	Lesson 4	Lesson 1 Lesson 4	Lesson 4		Lesson 4	Lesson 4			
Light	Lesson 5	Lesson 5	Lesson 5	Lesson 5	Lesson 4		Lesson 5	Lesson 4	Lesson 4 Lesson 5
Rocks	Lesson 5	Lesson 2 Lesson 5	Lesson 1 Lesson 2 Lesson 5		Lesson 2 Lesson 5	Lesson 2	Lesson 5		
Forces and magnets		Lesson 2	Lesson 4 Lesson 5	Lesson 2	Lesson 3	Lesson 2	Lesson 2	Lesson 2 Lesson 5	Lesson 2 Lesson 5

LKS2

During **Years 3 and 4**, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:



Animals including humans
Living things and their habitats
Electricity
Sound
States of matter

	W1: asking relevant questions and using different types of scientific enquiries to answer them;	W2, W3: setting up simple practical enquiries, comparative and fair tests;	W4: making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers;	W5, W6, W7: gathering, recording, classifying and presenting data in a variety of ways to help in answering questions;	W8: recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables;	W8: reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions;	W9: using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions;	W10: identifying differences, similarities or changes related to simple scientific ideas and processes;	W11: using straightforward scientific evidence to answer questions or to support their findings.
Animals including humans		Lesson 3	Lesson 3	Lesson 3	Lesson 3	Lesson 3	Lesson 3		
Living things and their habitats			Lesson 4	Lesson 4	Lesson 4 Lesson 5	Lesson 4			
Electricity	Lesson 4	Lesson 4	Lesson 4		Lesson 5	Lesson 5	Lesson 4		Lesson 5
Sound	Lesson 7	Lesson 4 Lesson 7	Lesson 6 Lesson 7	Lesson 7		Lesson 1 Lesson 4 Lesson 6 Lesson 7	Lesson 4 Lesson 7	Lesson 4	Lesson 5 Lesson 6
States of matter		Lesson 2 Lesson 4 Lesson 6	Lesson 2 Lesson 3 Lesson 4 Lesson 6 Lesson 7	Lesson 2 Lesson 3 Lesson 4 Lesson 6 Lesson 7	Lesson 4 Lesson 6	Lesson 2 Lesson 4 Lesson 6 Lesson 7	Lesson 6 Lesson 7	Lesson 6 Lesson 7	Lesson 6 Lesson 7

UKS2

During **Years 5** and **6**, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

Y5

Animals including humans
Living things and their habitats
Materials
Forces and magnets
Earth and space

	W1, W2, W3, W11: planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary;	W4: taking measurements , using a range of scientific equipment , with increasing accuracy and precision, taking repeat readings when appropriate;	W5: recording data and results of increasing complexity using scientific diagrams and labels , classification keys , tables , scatter graphs , bar and line graphs ;	W6: using test results to make predictions to set up further comparative and fair tests;	W7, W8: 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;	W9: identifying scientific evidence that has been used to support or refute ideas or arguments.
			Lesson 2		Lesson 2	
	Lesson 3 Lesson 4	Lesson 3 Lesson 4	Lesson 3 Lesson 4	Lesson 3	Lesson 3	
	Lesson 1 Lesson 3 Lesson 4	Lesson 1 Lesson 3 Lesson 4 Lesson 5	Lesson 1 Lesson 3		Lesson 1 Lesson 5	Lesson 1
	Lesson 5	Lesson 5	Lesson 5		Lesson 5	Lesson 5

UKS2 During **Years 5 and 6**, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

Y6

Animals including humans
Living things and their habitats
Light
Electricity
Evolution

	W1, W2, W3, W11: planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary;	W4: taking measurements , using a range of scientific equipment , with increasing accuracy and precision, taking repeat readings when appropriate;	W5: recording data and results of increasing complexity using scientific diagrams and labels , classification keys , tables , scatter graphs , bar and line graphs ;	W6: using test results to make predictions to set up further comparative and fair tests;	W7, W8: 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;	W9: identifying scientific evidence that has been used to support or refute ideas or arguments.
Animals including humans	Lesson 3	Lesson 3	Lesson 3		Lesson 3	
Living things and their habitats			Lesson 4		Lesson 4	Lesson 4
Light	Lesson 4	Lesson 4	Lesson 4	Lesson 2	Lesson 4	
Electricity	Lesson 2 Lesson 3	Lesson 2 Lesson 4	Lesson 4	Lesson 2	Lesson 2 Lesson 4	Lesson 4 Lesson 5
Evolution	Lesson 4	Lesson 4			Lesson 4	Lesson 3 Lesson 4 Lesson 6

