

Key characteristics we want to promote with our children:

- 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.

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.

Range of Opportunities	
Early Years	
Early learning goal – 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	
Range of Opportunities	
Key Stage 1	Key Stage 2
• See DFES Science Programmes of Study for KS1 and 2 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/425618/PRIMARY_national_curriculum_-_Science.pdf	

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	asking simple questions and recognising that they can be answered in different ways;	observing closely, using simple equipment ;	performing simple tests ;	identifying and classifying ;	using their observations and ideas to suggest answers to questions;	gathering and recording data to help in answering questions.
Animals including humans	✓	✓		✓	✓	
Plants	✓	✓		✓	✓	
Materials	✓	✓	✓	✓	✓	✓
Seasonal change		✓	✓	✓	✓	✓

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	asking simple questions and recognising that they can be answered in different ways;	observing closely , using simple equipment ;	performing simple tests ;	identifying and classifying ;	using their observations and ideas to suggest answers to questions;	gathering and recording data to help in answering questions.
Animals including humans		✓	✓	✓	✓	✓
Plants		✓		✓	✓	
Living things and their habitats	✓	✓	✓	✓	✓	✓
Materials	✓	✓	✓	✓	✓	✓

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

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

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:

Y4

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

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

	planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary;	taking measurements , using a range of scientific equipment , with increasing accuracy and precision, taking repeat readings when appropriate;	recording data and results of increasing complexity using scientific diagrams and labels , classification keys , tables , scatter graphs , bar and line graphs ;	using test results to make predictions to set up further comparative and fair tests;	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;	identifying scientific evidence that has been used to support or refute ideas or arguments.
Animals including humans						
Living things and their habitats			✓		✓	
Materials	✓	✓	✓	✓	✓	
Forces and magnets	✓	✓	✓		✓	✓
Earth and space	✓	✓	✓		✓	✓

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

planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary;	taking measurements , using a range of scientific equipment , with increasing accuracy and precision, taking repeat readings when appropriate;	recording data and results of increasing complexity using scientific diagrams and labels , classification keys , tables , scatter graphs , bar and line graphs ;	using test results to make predictions to set up further comparative and fair tests;	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;	identifying scientific evidence that has been used to support or refute ideas or arguments.
✓	✓	✓		✓	
		✓		✓	✓
✓	✓	✓	✓	✓	
✓	✓	✓	✓	✓	✓
✓	✓			✓	✓