



Severnbanks Primary School Curiosity Curriculum - Science

National Curriculum Purpose of study

A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

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.

Characteristics

Through the teaching of Science pupils will be able to develop the following characteristics:

- The ability to think independently and raise questions about working scientifically and the knowledge and skills that it brings.
- Confidence and competence in the full range of practical skills, taking the initiative in, for example, planning and carrying out scientific investigations.
- To acquire and use specialist scientific vocabulary.

- Excellent scientific knowledge and understanding which is demonstrated in written and verbal explanations, solving challenging problems and reporting scientific findings.
- High levels of originality, imagination or innovation in the application of skills.
- The ability to undertake practical work in a variety of contexts, including fieldwork.
- A passion for science and its application in past, present and future technologies.

Science Bug

We support our science teaching through using Science Bug

The Science Bug Philosophy

Science Bug is written on an evidence-based approach to science teaching and learning.

In order to make learning *real*, children need to explore, ask questions, and assess their understanding.

Science Bug is crafted on a robust teaching and learning cycle that puts children and hands-on, active learning at its heart and ensures progression for all.

In order to instil scientific confidence in children and to inspire future generations of young scientists, we need to spark their imagination and fuel their curiosity with hands-on, experiential science.

Subject Content

Key Stage 1	
Opportunities	<p>To look at:</p> <ul style="list-style-type: none"> • Plants • Animals including humans • Everyday Materials and their uses • Seasonal Changes • Living things and their habitats
Pupils should be taught:	<p>How to work scientifically</p> <ul style="list-style-type: none"> • 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.

Science Bug Units	
Year 1	Parts of Animals Changing Seasons Plants Comparing Materials Types of Animals Identifying Materials
Year 2	Uses of Materials Living Things Growing Plants Changing Shape Habitats Feeding and Exercising

Key Stage 2 - Y3 & Y4	
Opportunities	To look at: <ul style="list-style-type: none"> • Plants • Animals including humans • Rocks • Light • Forces and magnets • Living things and their habitats • States of matter • Sound • Electricity
Pupils should be taught:	How to work scientifically <ul style="list-style-type: none"> • 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

	<p>and written explanations, displays or presentations of results and conclusions</p> <ul style="list-style-type: none"> • 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.
Science Bug Units	
Year 3	<p>Movement & Feeding Light & Shadows What Plants Need Rocks & Soil Parts of Plants Magnets & Forces</p>
Year 4	<p>Electricity Dangers to Living Things Human Nutrition Sound Grouping Living Things Changes of State</p>

Key Stage 2 - Y5 & Y6	
Opportunities	<p>To look at:</p> <ul style="list-style-type: none"> • Living things and their habitats • Animals including humans • Properties and changes of materials • Earth and space • Forces • Evolution and inheritance • Light • Electricity
Pupils should be taught:	<p>How to work scientifically</p> <ul style="list-style-type: none"> • 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

	<ul style="list-style-type: none"> • 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 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.
Science Bug Units	
Year 5	<p>Life Cycles Earth & Space Separating Mixtures Types of Change Materials Forces</p>
Year 6	<p>Light & Sound Our Bodies Classifying Living Things Changing Circuits Evolution & Inheritance Review & Celebration</p>

Cultural Capital	<p>Outdoor Learning Techniquet Cheltenham Science Festival Fairford - Air Tattoo Malvern Show / Three Counties Show Science Theatre Shows Habitats: Seaside / Farm / Forest Visitors: Vets / nurses / farmers / scientists / engineers Welsh Birds of Prey Science Lab STEM - STEMworks / The Dean Academy PerryGrove Dean Forest Railway Puzzlewood</p>
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	British Aerospace Pizza Express / Food Beechenhurst Science workshops - ebugs Drugs Education - Police / Health Sex Education
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