

All Saints Upton

Church of England Primary School

Science Policy

Our Vision

“But test everything; hold fast what is good.”

 1 Thessalonians 5:21

We believe our young Scientists will develop their scientific understanding by asking questions, conducting tests and analysing their results.

**Introduction**

At All Saints Upton we know that Science underpins many aspects of modern life. Our children are naturally interested in everything in the world around them and our Science curriculum makes a valuable contribution to their understanding. All Saints Upton Primary School Science lessons will stimulate and excite pupil’s curiosity about natural phenomena and events in the world around them. It will also satisfy their curiosity with the knowledge to understand and explore further to deepen their understanding beyond the classroom. All our investigative work will be follow the “scientific method” and will develop the children’s ability to find answers to their questions by conducting fair tests that enable them to gather and evaluate experimental evidence. Through Science, pupils understand how major scientific ideas contribute toward technological change – impacting on industry, medicine, business and improving quality of life. Our pupils learn to question and discuss science based issues that may affect their own lives, the directions of society and the future of the world.

**Rationale**

Science is a systematic investigation of the physical, chemical and biological aspects of the world which relies on first hand experiences and on other sources of information. The scientific process and pupils’ problem-solving activities will be used to deepen their understanding of the concepts involved. The main aspects of science to be studied will be determined by the programmes of study of the National Curriculum.

Through science pupils at All Saints Upton Primary School will continue to deepen their respect, care and appreciation for the natural world and all its phenomena.

**Aims**

* to develop pupils’ enjoyment and interest in science and an appreciation of its contribution to all aspects of everyday life
* to build on pupils’ curiosity and sense of awe of the natural world
* to use a planned range of investigations and practical activities to give pupils a greater understanding of the concepts and knowledge of science
* to introduce pupils to the language and vocabulary of science
* to develop pupils’ basic practical skills and their ability to make accurate and appropriate measurements
* to develop pupils’ use of computing in their science studies.
* to extend the learning environment for our pupils via our environmental areas and the locality
* to promote a ‘healthy lifestyle’ in our pupils.

**Objectives**

The following objectives derived from the above aims will form the basis of our progressive curriculum that matches the National Curriculum for Science:

* to develop pupils’ enjoyment and interest in science and an appreciation of its contribution to all aspects of everyday life.
* to develop a knowledge and appreciation of the contribution made by famous scientists to our knowledge of the world including scientists from different cultures
* to encourage pupils to relate their scientific studies to applications and effects within the real world
* to develop a knowledge of the science contained within the programmes of study of the National Curriculum.

***To build on pupils’ curiosity and sense of awe of the natural world***

* to develop in pupils a general sense of enquiry which encourages them to question and make suggestions
* to encourage pupils to predict the likely outcome of their investigations and practical activities

***To use a planned range of investigations and practical activities to give pupils a greater understanding of the concepts and knowledge of science***

* to provide pupils with a range of specific investigations and practical work which gives them a worth-while experience to develop their understanding of science
* to develop progressively pupils’ ability to plan, carry out and evaluate simple scientific investigations and to appreciate the meaning of a ‘fair test’.

***To develop the ability to record results in an appropriate manner including the use of diagrams, graphs, tables and charts***

* to introduce pupils to the language and vocabulary of science
* to give pupils regular opportunities to use the scientific terms necessary to communicate ideas about science
* to develop pupils’ basic practical skills and their ability to make accurate and appropriate measurements
* within practical activities give pupils opportunities to use a range of simple scientific measuring instruments such as thermometers and force meters and develop their skill in being able to read them.

***To develop pupils’ use of ICT in their science studies***

* to give pupils opportunities to use ICT (video, digital camera) to record their work and to store results for future retrieval throughout their science studies
* to give pupils the chance to obtain information using the internet.

**Principles of teaching and learning**

***Differentiation and Additional Educational Needs***

***Special Educational Needs***

(Please see additional Special Educational Needs and Disability Policy for further information.)

* In science, we aim to create a learning environment, which meets the needs of all pupils,regardless of their ability.
* Pupils’ individual needs are met through appropriate differentiation which is identified in all science planning.
* Science planning takes into account differing pupil needs and ensures tasks are appropriate to the stage of pupil’s learning. This enables pupils with specific learning needs and/or physical difficulties to take an active part in scientific learning within the whole-class environment.

***Gifted and Talented Children***

* Where pupils exhibit outstanding and continuing ability in science, work will be provided which promotes and enriches their increased understanding of scientific concepts.
* Pupils will be given work which challenges them, encouraging them to draw on understanding from across the curriculum.
* Pupils will be given the opportunity to allow their talent to flourish and to achieve their potential by regularly moving to the next level of knowledge and understanding or working on an independent study based on their own hypothesis.

***Breadth and Balance***

Pupils will be involved in a variety of structured knowledge based activities and in more open-ended investigative work:activities to develop good observational skills

* practical activities using measuring instruments which develop pupils’ ability to read scales accurately
* structured activities to develop understanding of a scientific concept
* open ended investigations.

On some occasions pupils will carry out the whole investigative process themselves or in small groups.

**Relevance**

Wherever possible science work will be related to the real world and everyday examples will be used.

**Cross-curricular skills and links**

Science pervades every aspect of our lives and we will relate it to all areas of the curriculum. We will also ensure that pupils realise the positive contribution of both men and women to science and the contribution from those of other cultures. We will not only emphasise the positive effects of science on the world but also include problems, which some human activities can produce.

**Continuity and Progression**

**EYFS**

* The Foundation Stage curriculum is based around the three Prime Areas and Four Specific Areas of learning, where science is included as an aspect of ‘Understanding the World’ and ‘Communication and Language’ – this developing exploration and talking about changes with materials and the environment.
* Children are provided with a broad range of opportunities and experiences in science, enabling them to work towards all of the appropriate Early Learning Goals in the above areas.
* Children develop their understanding of the world around them on a daily basis, using their senses to explore and learn about objects and materials. They are encouraged to make observations of the changes that they see.
* Children are given holistic learning experiences, incorporating elements of science/experimental play in their everyday activities.

**Key Stage 1**

* The Key Stage 1 curriculum, ensures all areas of the Programme of Study are covered across both Years 1 and 2.
* Children further develop their understanding of the world around them which they have gained from the Foundation Stage.
* Pupils are given the opportunity to observe, explore and ask questions about living things, materials and physical phenomena.
* Pupils begin to work collaboratively with others, enabling them to develop their scientific knowledge and understanding and to link scientific concepts.
* Pupils communicate ideas orally using taught scientific language and begin to develop written methods for communicating their ideas (to include drawings, diagrams, use of computing, table and charts)

**Key Stage 2**

* The Key Stage 2 curriculum, ensures all areas of the Programme of Study are covered across Years 3, 4, 5, and 6.
* Pupils learn, explore and ask questions about a wider range of living things, materials and physical phenomena.
* Pupils think about the impact of scientific developments and technologies on themselves and the world around them.
* Pupils are encouraged to develop an independent approach to their science learning, through asking questions, suggesting improvements to their work and supporting each other towards achieving a heightened understanding of scientific concepts.
* Science is promoted across Key Stage 2 with pupils being given the opportunity to plan, carry out and evaluate experiments.
* Pupils are encouraged to develop their own methods for presenting their ideas (to include drawings, diagrams, use of ICT, tables and charts)

**Equality of Opportunity**

All children have equal access to the science curriculum and its associated practical activities. The SLT, Class Teachers and TAs at All Saints Upton Primary School are responsible for ensuring that all children, irrespective of gender, learning ability, physical disability, ethnicity and social circumstances, have access to the whole curriculum and make the greatest possible progress. Gender and cultural differences will be reflected positively in the teaching materials used.

All children have equal access to the Science Curriculum, its teaching and learning, throughout any one year. This is being monitored by analysing pupil performance throughout the school to ensure that there is no disparity between groups.

**Health and safety**

Pupils will be taught to use scientific equipment safely when using it during practical activities. Class Teachers and TAs will check equipment regularly and report any damage, taking defective equipment out of action. Simple risk assessments have been carried out on all practical elements of our curriculum. The use of naked flames are prohibited due to the sprinkler system. External visitors who use ethanol burners have their own risk assessments and work in the outdoor classroom areas.

**Assessment for Learning, recording and reporting**

Throughout the school teachers will assess whether children are working at/above or below the expected level for their age based on their understanding and application of the content of the National Curriculum. End point tests are undertaken at the end of each unit and outcomes are recorded on INSIGHT. Progress and attainment is reported to parents through parents’ evenings and end of year reports.

**The Role of the Science Co-ordinator:**

* To review changes to the National Curriculum requirements and advise on their implementation.
* Attend relevant CPD courses for Science as appropriate in line with the School Development plan.
* Arrange staff meetings to discuss the scientific aspects of the themes contained in the school’s current scheme of work and how these might be presented in the classroom.
* Liaise with the school’s SENCO regarding the progress of individual and groups of children.
* Collate ‘End of topic Assessments’ and ‘End of Key stage Assessments’ and set new priorities for development of Science in subsequent years.
* Monitor the learning and teaching in Science and provide support for staff when necessary.
* Take a lead role in organizing Science Events in school in line with LA and national initiatives.
* Endeavour to involve parents/carers in their children’s learning in and through science.

The Science Subject Leader will monitor pupil progress, books and teaching during the academic year. The Subject leader will provide a full review of the subject at the end of each academic year.