

GUSTON CHURCH OF ENGLAND PRIMARY SCHOOL



Science Policy October 2017

Review: September 2018



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SCIENCE POLICY

Ethos Statement

At Guston Church of England Primary School we believe that the way that we work together, behave with one another and seek to support and nurture others, gives life to our Christian ethos. It is one which is inclusive and seeks to encourage and inspire everyone to achieve their fullest potential.

Rationale

Science education involves developing three kinds of knowledge within the pupil: factual, causal (hypothesising, identifying causes) and investigative (devising fair tests, practical skills) knowledge. Thus the teaching of science includes a systematic investigation of physical, biological and chemical aspects of our world through first hand experiences and through sources of information. The science to be taught will be based on the Programmes of Study of the National Curriculum 2014, using the Kent Scheme of Work for delivery.

Aims and Objectives

These aims and objectives form the basis when developing a scheme of work. Assessment is also related to these objectives.

To develop pupils' enjoyment and interest in science and an appreciation and understanding of its contribution to all aspects of everyday life

- 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 develop a knowledge and appreciation of the contribution made by famous scientists to our knowledge of the world. This will include scientists from different cultures

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 children to claim ownership of the investigations through carrying out experiments instigated by the pupils themselves

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 wide variety of specific investigations and practical work which gives them a worthwhile experience to develop their understanding of science

To develop pupils' process skills

- to develop progressively pupils' ability to devise, plan, carry out and evaluate simple scientific investigations and to appreciate the meaning of a 'fair test'
- to encourage pupils to predict the likely outcome of their investigations and practical activities

To develop pupils' basic practical skills and their ability to make accurate and appropriate measurements

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- to give pupils opportunities within practical activities to use simple scientific measuring instruments, such as thermometers and force meters, and to develop their skill in being able to read them

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' use of information and communication technology (ICT) in their science studies

- to give pupils opportunities to use ICT, including the use of sensors and digital microscopes, to obtain data, to record their work and to store results for future retrieval
- to give pupils opportunities to obtain information through using CD-ROMs and other data bases including the Internet

Principles of Teaching and Learning

Equal opportunities, differentiation and special needs

Recognising the right of provision for all children, curriculum planning will ensure that all pupils have an equal opportunity to take part in the full scheme of work and its associated practical activities. Tasks will be set which challenge all pupils, including the more able. For pupils with SEN and EAL, the task will be adjusted, vocabulary provided or pupils may be given extra support. Gender and cultural differences will be reflected positively in the teaching materials used.

Breadth and balance

The ideas and evidence in science and the investigative skills of Working Scientifically will be taught through contexts taken from the sections on life processes and living things, materials and their properties and physical processes. The whole science curriculum will be delivered using an experimental and investigative approach wherever possible. The content selected ensures a balanced coverage of the National Curriculum Programmes of Study (see the scheme of work). All staff, including those in a supportive role, should have a clear idea of the concepts and skills to be taught.

Variety and relevance

Pupils will be involved in a wide range of structured activities and in more open-ended investigative work:

- activities to develop good observational skills
- practical activities using measuring instruments which develop skills in reading scales

- accurately
- structured activities to develop understanding of a scientific concept
- and open-ended investigations including those instigated by the pupils themselves.

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

Cross-curricular skills and links

Every aspect of our lives is affected by science so its links with other areas of the curriculum will be exploited. Pupils will be told of 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 that some human activities can produce.

Continuity and progression

By careful planning, pupils' scientific skills and knowledge gained at Key Stage 1 will be consolidated and developed during Key Stage 2.

Pupils in Key Stage 1 will be introduced to science through focused observations and explorations of the world around them. Science will be taught through topics so that a wide variety of experiences and vocabulary are met. As the children progress, they will begin to develop the idea of a 'fair test' and carry out more specific activities. These will be further developed through supportive investigations into more independent work at Key Stage 2. The knowledge and content prescribed in the National Curriculum will be introduced throughout both key stages in a progressive and coherent way - see the Scheme of Work for Science.

Health and safety

The emphasis on practical activities means that due care must be taken to ensure the pupils' safety and all teachers should consult the ASE book 'Be Safe' and follow its guidelines. If an activity is not covered by 'Be Safe' then we will contact CLEAPSS (School Science Service Helpline 01895 251496) for further advice. If in any doubt, the activity should not be carried out.

Particular care should be taken with regard to experiments involving food – a letter requiring permission and advising of allergies should be sent home before any experiment involving food.

In the event of any accidental swallowing, the teacher should immediately contact

- a) the qualified first aider
- b) the parents/guardian
- c) the headteacher

Assessment, recording and reporting

Opportunities for assessment are identified within the schemes of work. At Key Stages 1 and 2, assessment for science is recorded through Target Tracker for the strand of scientific working and using the assessment provided through the SoW for each knowledge strand. Assessments will be recorded appropriately and some examples of work held in portfolios.

Monitoring

Monitoring of science teaching is carried out through the following:

- Lesson observations by the Science Co-ordinators.
- Book and planning scrutinies
- Learning walks
- Child-led discussions and questionnaires

The objective of the monitoring is to ensure science is being taught well across the school. The focus of monitoring will be decided based on the action plan. Following an observation the class teacher receives feedback and a copy of the observation notes.

Science monitoring achieves the following:

- The science team to gain insight into the nature of science teaching across the school.
- It gives class teachers the opportunity to review their own practice and discuss teaching science with a subject specialist.
- It gives the science team an insight in to areas of strengths, enabling good practice to be shared among colleagues.
- It allows resources to audited and for the assessment of current and future resource requirements.
- It allows the science team to set targets, demonstrating the schools commitment to self-evaluation and improvement of standards in science.

Resourcing

- Equipment for KS1 and KS2 is located in the cupboard in the KS2 area, outside the community room.
- Suitable equipment for Reception is located within classrooms to encourage scientific play.
- Staff are responsible for informing the co-ordinator of any extra resources required, of any breakages or losses that occur and of any new materials, CD ROMs, books, DVDs etc that might prove useful.

The science subject manager will see that this level of resourcing is maintained and will administer the allocated budget for science.

Teaching materials and background information on science are kept in science cupboard.

The science section of the school library is continuously being developed to reflect curriculum and teaching needs.

Review

- Science policy to be reviewed annually by co-ordinators.
- Action plans to be completed annually and reviewed at the end of each school year.

Reviewed by Shelly Hixon and Claire Lawrence, October 2017