



SCIENCE POLICY

Aims and Objectives

Children have a natural curiosity about the world they live in. Science teaches them an understanding of phenomena they experience and introduces new experiences to them. It aims to stimulate a child's curiosity in finding out why things happen in the way they do. It teaches methods of enquiry and investigation to stimulate creative thought. Children learn to ask scientific questions and begin to appreciate the way science will affect their future on a personal, national, and global level.

The aims of science are to enable children to:

- ◆ ask and answer scientific questions;
- ◆ plan and carry out scientific investigations, using equipment, including computers, correctly;
- ◆ know and understand the life processes of living things;
- ◆ know and understand the physical processes of materials, electricity, light, sound and natural forces;
- ◆ know about the nature of the solar system, including the earth;
- ◆ evaluate evidence and present their conclusions clearly and accurately.

Teaching and learning style

We use a variety of teaching and learning styles in science lessons. Our principal aim is to develop children's knowledge, skills, and understanding. Children may be taught as a whole class, in mixed ability groups, in ability groups or pairs. We encourage the children to ask, as well as answer, scientific questions. They use ICT in science lessons where it enhances their learning. They take part in role-play and discussions and they present reports to the rest of the class. They engage in a wide variety of problem-solving activities. Wherever possible, we involve the pupils in 'real' scientific activities, for example, researching a local environmental problem or carrying out a practical experiment and analysing the results.

We recognise that there are children of widely different scientific abilities in all classes and we ensure that we provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this in a variety of ways by:

- ◆ setting common tasks which are open-ended and can have a variety of responses;
- ◆ setting tasks of increasing difficulty (we do not expect all children to complete all tasks);
- ◆ grouping children by ability in the room and setting different tasks for each ability group;
- ◆ providing resources of different complexity, matched to the ability of the child;
- ◆ using classroom assistants to support the work of individual children or groups of children.



Tel: 01403 272500

Headteacher: Deborah J. Moss BEd.(Hons.) NPQH

HOLBROOK PRIMARY SCHOOL

Holbrook School Lane, Horsham, West Sussex RH12 5PP

Fax: 01403 272600 <http://holbrookschool.co.uk> email: office@holbrook.w-sussex.sch.uk

Children record their work in a variety of ways. In the foundation stage and early in KS1 much of the work is practical and not recorded on paper. Where a more permanent recording is needed, this may be produced by the group, or by the teacher or TA acting as scribe. As the children develop they are encouraged to record more of the work themselves, either individually or in small groups. There is no expectation that all children record all parts of an investigation every time. It is important that the children understand the different terms used in investigations and these are introduced gradually as the children progress through the school. (See guidance in recording file stored in the Study)

Science curriculum planning

The school uses the objectives from QCA scheme of work for science as the basis of its curriculum planning.

We carry out our curriculum planning in science in three phases (long-term, medium-term and short-term). The long-term plan maps the scientific topics studied in each term during the key stage. In some cases we combine the scientific study with work in other subject areas, especially at Key Stage 1; at other times the children study science as a discrete subject.

A medium term plan for each QCA unit is saved centrally in "Staff Planning". These may be cross referenced to other curriculum areas, i.e. literacy. These detail the work for each unit, indicating activities and resources.

Our medium-term plans, give details of each unit of work for each term. These are saved centrally in "Staff planning".

We have planned the topics in science so that they build upon prior learning. We ensure that there are opportunities for children of all abilities to develop their skills and knowledge in each unit and we also build progression into the science scheme of work, so that the children are increasingly challenged as they move up through the school.

Foundation Stage

We teach science in reception classes as an integral part of the topic work covered during the year. As the reception class is part of the Foundation Stage of the National Curriculum, we relate the scientific aspects of the children's work to the objectives set out in the Early Learning Goals (E.L.G.s) which underpin the curriculum planning for children aged three to five. Science makes a significant contribution to the objective in the E.L.G.s of developing a child's knowledge and understanding of the world, e.g. through investigating what floats and what sinks when placed in water.

Cross Curricular Links

English

Science contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. Some of the texts that the children study in the Literacy Hour are of a scientific nature. The children develop oral skills in science lessons through discussions (for example of the environment) and through recounting their observations of scientific experiments. They develop their writing skills through writing reports and projects and by recording information.

Mathematics

Science contributes to the teaching of mathematics in a number of ways. The children use weights and measures and learn to use and apply number. Through working on investigations they learn to estimate and predict. They develop the skills of accurate observation and recording of events. They use numbers in many of their answers and conclusions.

Information and communication technology (ICT)

Children use ICT in science lessons where appropriate. They use it to support their work in science by learning how to find, select, and analyse information on the Internet and on CD-ROMs. Children use ICT to record, present and interpret data and to review, modify and evaluate their work and improve its presentation.

Personal, social, health and citizenship education (PSHCE)

Through their work in science children are encouraged to think about the impact of science on the environment and the measures which can be taken to control these. Sex education is covered in Y5 and Y6, although aspects of this undoubtedly arise naturally when studying other areas i.e. animals.

Teaching science to children with special educational needs

At our school we teach science to all children, whatever their ability. Science forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our science teaching we provide learning opportunities that enable all pupils to make progress. We do this by setting suitable learning challenges and responding to each child's different needs. Assessment against the National Curriculum allows us to consider each child's attainment and progress against expected levels.

We enable pupils to have access to the full range of activities involved in learning science. Where children are to participate in activities outside the classroom, for example, a trip to a science museum, we carry out a risk assessment prior to the activity, to ensure that the activity is safe and appropriate for all pupils.

Marking of Children's Work

Children's work can be broadly divided into two types for the purposes of marking.

1. Investigations and experiments

These should generally be closely marked, with a comment on such aspects as what learning has taken place, the presentation or organisation, highlighting the good features of the work, or a question to promote further thought or discussion. Comments may also relate to aspects of AT1 which have been covered by the task or the original learning intention.

2. Closed tasks

For some activities in science a simple comment, a tick or smiley face would be sufficient, with significant errors corrected. Examples of these would include a labelled diagram, table or chart completed by the children. It is likely the answers would have been discussed in class during the plenary and marking is to acknowledge that the teacher has seen the work.

Assessment and recording

We assess children's work in science by making informal judgements as we observe them during lessons. On completion of a piece of work, the teacher marks the work and comments as necessary. At the end of a unit of work s/he makes a summary judgement about the work of each pupil in relation to the National Curriculum level of attainment. KS2 use Rising Stars assessments to determine prior knowledge to inform planning. The end of unit assessments are also used to inform teacher assessments. A set of photocopiable assessment papers, "MiniSats", published by Naturetrek, are available in the study. These are linked to the QCA units. There are also materials published by the Windmill Press and Science check. For older KS2 children the "Test base" software is available on the network. The teacher records the attainment grades on either the class record card or individual record cards (for AT1). We use these grades as the basis for assessing the progress of each child and we pass this

information on to the next teacher at the end of the year and to the science co-ordinator.

Teachers make an assessment of the children's level of attainment in science each term. At the end of KS1 and KS2 these assessments are reported to parents.

At the end of KS1 these assessments are based on informal observations and discussions with children. If appropriate the Naturetrek "MiniSats" may be used. Written work may be moderated across the year group to ensure consistency.

Children take the national tests in science at the end of Key Stage 2, the results of which are reported to parents along with the teacher assessments. The science subject leader keeps samples of children's work in a portfolio and uses these to demonstrate what the expected level of achievement is in science for each age group in the school.

Resources

We have sufficient resources for all science teaching units in the school. Most equipment is stored in the Library corridor. For KS1 there is a box of resources for each unit of work, or materials may be stored in the topic box. The library contains a supply of science topic books to support children's individual research. A range of software is available.

Monitoring and review

It is the responsibility of the science subject leader to monitor the standards of children's work and the quality of teaching in science. The science subject leader is also responsible for supporting colleagues in the teaching of science, for being informed about current developments in the subject and for providing a strategic lead and direction for the subject in the school. The science subject leader gives the Headteacher an annual summary report in which s/he evaluates strengths and weaknesses in the subject and indicates areas for further improvement. The science subject leader has specially-allocated time for fulfilling the vital task of reviewing samples of children's work and visiting classes to observe teaching in the subject.

W K Cockram 10/08

Reviewed: March 2006

Governor Signature: **Date**

Next Review Due: