Policy for Science at Staple Hill Primary School

Date Approved by Governors: 25 May 2010

Written by: Governors and Staff, Staple Hill Primary

Introduction

- This document is a statement of the aims, principles and strategies for teaching and learning of Science at Staple Hill Primary School.
- It was developed through a process of consultation between the science co-ordinator and staff during the summer of 2006.
- It was reviewed in the summer of 2007 and 2008.
- The Science Subject Leader will review the policy every three years and amendments, should they be necessary, they will be brought to the attention of all staff and the governing body.

Equalities

Science at Staple Hill will be taught across the key stages and the curriculum in ways that enable each child to access the National Curriculum for Science. Each child regardless of ethnic group, age, disability, special educational needs and gender will have access to the Science curriculum. It is our aim that a wide range of activities be planned and organised that will stimulate our pupils' interests, instil a love of Science and make children aware of the contributions made to Science by scientists from diverse cultures . Staff will deliver Science through a Creative Curriculum where appropriate and discrete units where necessary. The curriculum map [Appendix 1] will ensure a broad and balanced coverage of the National Curriculum requirements.

What is Science?

- Science is about children developing an enquiring mind while extending their knowledge and understanding of the world. Children should, therefore, be given the opportunity to investigate the world around them in a safe and systematic way, making use of their increasing knowledge and skills to describe, interpret and evaluate their findings. It is a methodology; a practical way of finding reliable answers to questions we may ask about the world around us.

Aims

Our aims in teaching Science are that all children will:-

- retain and develop their natural sense of curiosity about the world around them
- develop a set of attitudes which will promote scientific ways of thinking, including open-mindedness, perseverance, objectivity and a recognition of the importance of teamwork
- come to understand the nature of "scientific method" involving: meticulous observation, the making and testing of hypotheses, the design of fair and controlled experiments, the drawing of meaningful conclusions through critical reasoning and the evaluation of

evidence
- become effective communicators of scientific ideas, facts and data
- begin to build up a body of scientific knowledge and understanding which will serve as a foundation for future enquiry
- build on the knowledge, understanding and skills acquired at earlier stages
- foster a sense of wonder, enjoyment and enthusiasm in Science.

Principles of the Teaching and Learning of Science

Science is important because:-

- it is a body of knowledge essential to our understanding of the world around us

- it has built up a methodology for thinking which helps to form the basis of intellectual enquiry

- the skills and knowledge of Science have wide applicability in everyday life and nature.

- Science is a core subject in the National Curriculum. The fundamental skills, knowledge and concepts of the subject are set out in the National Curriculum orders outlined by the following programmes of study:-

    1. Scientific Enquiry
    2. Life Processes and Living Things
    3. Materials and their Properties
    4. Physical Processes.

There are also specified key skills and thinking skills which should be promoted through Science teaching and learning. Where appropriate, teachers will develop and apply these skills through the children's study of Science.

Key Skills

These help learners to improve their learning and performance in education, work and life. Pupils should be given opportunities in their study of Science to develop and apply:-

- Communication skills
- Application of Number
- Information Technology
- Working with others
- Improving own learning and performance
- Problem solving

[Refer to National Curriculum Orders for England[1]]

Thinking Skills

By using thinking skills pupils can focus on 'knowing how' as well as 'knowing what' – learning how to learn. The following thinking skills complement the key skills:

- Information-processing
- Reasoning
- Enquiry
- Creative thinking
- Evaluation

[Refer to National Curriculum Orders for England[2]]

Other aspects of the curriculum:

Staff will endeavour to promote aspects of PSHE, Citizenship, financial capability, enterprise education and education for sustainable development where they fit in with their topics. It is Staple Hill's vision to encompass all areas of the curriculum within identified themes and so teach Science through a cross-curricular approach and includes developing Science themes and skills through Literacy and Numeracy.

Strategies for the Teaching of Science

- The Creative Learning Journeys topic wheels are in place accompanying staff's own planning wheels. Staff are encouraged to use the topics identified by the QCA but to develop more practical approaches to teaching Science. A range of documents are referred to when planning Science investigations [See Appendix 2]

- In Nursery and Reception, the foundation framework is used as the basis for planning scientific activities

- At Key Stage 1 and Key Stage 2 pupils learn Science based on creative topics informed by the Creative Learning Journey planning and skills set in addition to the staff's own ideas but informed by the National Curriculum orders. Each year group teacher is responsible for delivering their appropriate curriculum. This is monitored by the Science co-ordinator and illustrated on the Science Curriculum Map [Appendix 1].

[1] http://curriculum.qcda.gov.uk/key-stages-1-and-2/learning-across-the-curriculum/skillsacrossthenationalcurriculum/index.aspx?return=/search/index.aspx%3FfldSiteSearch%3Dkey+skills

[2] http://curriculum.qcda.gov.uk/key-stages-1-and-2/learning-across-the-curriculum/skillsacrossthenationalcurriculum/index.aspx?return=/search/index.aspx%3FfldSiteSearch%3Dkey+skills

- A two year cycle is followed in Key Stage 2 to ensure curriculum coverage.

- There is no specialist teaching in Science; it is taught by class teachers. Teaching Assistants are used in Science where appropriate, to support group activities and provide extra help for children with particular needs.

- Co-operative group work, individual work and class teaching is used where appropriate to support the teaching and learning of Science. The following strategies are promoted across the school and within classrooms:

    - groups can be of mixed ability with differentiation by role
    - pre-prepared writing frameworks including post it planning boards support recording
    - Science weeks
    - ICT-based activities including video, media-based information, film, etc.
    - relevant discussion is encouraged
    - groups are encouraged to communicate their findings in a variety of ways.

- Homework is used to support Science through tasks such as:

    - finding answers to questions posed in school through the use of books and interviews with friends and family
    - collecting items to support classroom experiments
    - developing multimedia presentations to support scientific investigation using home computers.

Our teaching of Science is a combination of first hand experiences and the acquisition of knowledge. Our focus is on AT1 of the National Curriculum, Scientific enquiry through which we aim to ensure:

- the study of Science is through practical investigative work where possible
- that careful observation is fostered
- that resources are made readily available and accessible through the use of school resources and those loaned by Downend Secondary
- that pupils are encouraged to communicate their scientific findings to others using a variety of methods including written/verbal reports and the use of graphs or pictures.

In Staple Hill, we celebrate excellence in Science using displays, sharing work and awarding certificates and prizes to pupils for ‘Scientist of the Week’ during our Science weeks.

Strategies for Ensuring Progress and Continuity

- Planning in Science is a process in which all teachers are involved. Staff communicate with each other and develop short and long term teaching strategies.

- The National Curriculum, QCA themes and Creative Learning Journey skills inform the

range delivered. Staff develop their own short-term planning and ensure that the correct skills, knowledge and understanding and scientific vocabulary is covered. Staff use identified assessment grids to assess their pupils [Appendix 3] and Assessment for Learning strategies to support formative assessment and inform marking [Appendix 4]. Also refer to http://www.aaia.org.uk/assessment/assAAIAPub.asp . Some materials can also be found on the school Q drive [Assessment for Learning folder]

- Staff Meetings and informal professional discussions are used to develop the Science Curriculum and to ensure consistency of approach and of standards.

- There are working relationships with the LA and AST, to support clarity, accuracy and up-to-date information and training in Science.

- Weekly, detailed planning is carried out by all staff.

- The Science co-ordinator monitors progress in Science through lesson observations, pupil conferencing, staff/pupil surveys, planning and book/work scrutiny and informal discussions with staff.

Strategies for the Use of Resources

Central resources in Science are the responsibility of the Science co-ordinator. All staff are responsible for using resources and returning them to the correct place. Any requests for consumables need to be directed to the Science co-ordinator as should any breakages or requests for resources.

Information Technology is a resource which is used in Science for:-

- communicating information (word processing and graphics/drawing packages)
- handling information (databases and data capture equipment)

The library houses a stock of books relating to Science topics and is used regularly for reference. The School uses some published reference material to aid to support learning including the Collins Exploring Science series. The school also borrows topic specific Science boxes from Downend Secondary School. There is an agreed rota for the loan of these resources.

Monitoring and Feedback

- Feedback to pupils about their own progress in Science is achieved through the marking of work and the use of AfL strategies.
- Effective monitoring:-

    - is often done while a task is being carried out through discussion between children and teacher
    - aims to help children learn by encouraging them to think critically about what they

have achieved
- of written work is used sensitively and with discretion so that a child can assimilate a limited number of corrections at one time - this will vary according to age and ability.

- Formative Assessment is mostly carried out informally by teachers in the course of their teaching. Suitable tasks for assessment include:-

  - small group discussions usually in the context of a practical task
  - specific assignments or investigative tasks (AT1)

Strategies for Recording and Reporting

- Most investigative and research work is kept in books or folders
- Classroom/School displays celebrate scientific teaching and learning experiences.
- Assessments are updated regularly throughout the year using individual pupil assessment grids and recorded in table form in June and forwarded to the Science co-ordinator
- Early Learning Goals are used in the foundation stage.
- Individual pupil assessment grids are passed on to the next teacher at the end of the year
- End of year school reports include an overall Science level assessment for parents

Reporting to Parents, Carers and Governors

- The school will report formally to parents and carers three times a year through parent consultations and the Annual Report.
- The school report to parents and carers will identify a pupil's Science progress based on Teacher Assessment. Science progress is reported in the school report as a 'Best Fit' level.
- Headteacher and SLT reports will be presented for discussion with Governors at the Summer term meeting during which Science standards and progress across the school will be reported.

Health and Safety

- Health and Safety issues are of the utmost importance in Science and clear guidance will be given to all pupils by all adults teaching them.
- There is awareness of appropriate handling of equipment and materials.
- There is awareness of appropriate storage of equipment and materials.
- Health and Safety information/policies issued by the L.A. are used to enhance the safety, and well being of pupils in their working environments. All staff have access to copies of the 'BE SAFE' booklet regarding 'Health and Safety in Primary School Science'.
- Staple Hill receive monthly CLEAPSS newsletters which contain up-to-date Health &

Safety guidance. For further links to Health & Safety and resources visit: http://www.learningwithsouthglos.org/Science/curriculum/usefulwebsites/linksforteachers.htm#HandS

Document History

Date	Notes
Autumn 2009	Written by Science Co-ord
March 2010	Reviewed by Staffing & Curriculum Committee
25 May 2010	Ratified by FGB