

KESTON PRIMARY SCHOOL **SCIENCE POLICY**

A. RATIONALE

Teaching Science at Keston Primary School involves the encouragement, promotion and development of children's interest and knowledge of materials, objects and phenomena which surround them at home, at school and everywhere else.

B. AIMS

Science teaching aims:

- To establish investigative approaches in the classroom which promote and reflect the scientific process as set out in the National Curriculum Document Attainment Target 1.
- To give the children confidence to ask questions, share ideas and work collaboratively in practical activities.
- To let children communicate their ideas using appropriate scientific vocabulary.
- To enable them to record their findings in a variety of different ways.
- To give opportunities to observe their environment.
- To give opportunities to make predictions concerning their environment.
- To give opportunities to develop their own theories.
- To give opportunities to test these theories where appropriate.
- To enable them to draw and report reasonable conclusions from their tests

C. OBJECTIVES

Science is taught to all pupils, following guidance in the National Curriculum Programmes of Study. Science has two dimensions, firstly the body of knowledge as defined in the attainment targets (Sc 2 – 4), and secondly the ways in which this knowledge is acquired (Sc 1).

Sc 1 Experimental Science

Sc 2 Life processes and living things

(Life processes : Humans and other animals : Green Plants : Variation and Classification : Living things in their environment)

Sc 3 Materials and their properties

(Grouping and classifying materials : Changing materials : Separating mixtures of materials)

Sc 4 Physical processes

(Electricity : Forces and motion : Light and sound : The Earth and beyond)

D. EVERY CHILD MATTERS

In accordance with the Children's Act 2004, schools now have a duty to provide the outcomes outlined in 'Every Child Matters'.

During Science lessons, children are kept safe from danger by ensuring that all equipment is checked regularly and stored carefully. The staff are mindful of children who have allergies to certain foods when they are involved in food tasting sessions. They are taught the correct ways to handle equipment and to work collaboratively.

E. CURRICULUM ORGANISATION AND TIME ALLOCATION

The school has developed its own scheme of work based on the National Curriculum and incorporating some elements of the QCA Science work. In KS1, Science is taught for 1 to 1 and a half hours each week. In KS2 Science is taught for 2 to 3 hours each week. Science in both key stages reinforces cross-curricular links including literacy, numeracy and ICT.

F. CONTINUITY AND PROGRESSION

The curriculum map covering the teaching of Science in Years 1 – 6 is located in the *Teacher Shared / Science Files / Supporting Documents* directory. The teaching of Science is organized so that children cover topics regularly as they progress through the school, with the various schemes of work reflecting the age and ability of children when topics are taught.

EARLY YEARS FOUNDATION STAGE

In the Early Years Foundation Stage, Science is included as an aspect of 'Knowledge and Understanding of the World' and is referred to as '*Exploration and Investigation*'. The children in Nursery and Reception classes are provided with a broad range of opportunities and experiences through which they may work towards the Early Learning Goals:

- to investigate objects and materials by using all of their senses as appropriate;
- to find out about and identify some features of living things objects and events they observe;
- to look closely at similarities, differences, patterns and change and to ask questions about why things happen and how things work.

KS1

The scheme of work covers the Programmes of Study and builds on the knowledge and skills acquired in the Foundation Stage.

KS2

The KS2 scheme of work runs on a two year cycle which reinforces and builds upon work covered in previous years.

Schemes of work are developed by staff in collaboration with the co-ordinator. Work has been carefully planned to ensure full coverage of the National Curriculum. There is discussion of the schemes on a regular basis with teaching staff, and there is an opportunity for them to be revised in the light of these evaluations.

G. THE ROLE OF THE CO-ORDINATOR(S)

The role of the co-ordinator can be summarized as follows:

- To take the lead in policy development and the production of schemes of work.
- To monitor the effectiveness of the teaching of Science, both in the planning stage and in its delivery.
- To be available to support colleagues and to purchase and organize resources.
- To attend local authority network meetings to keep up to date in Science and advise colleagues appropriately.
- To liaise with other teaching staff regarding opportunities for children to participate in activities outside the school, e.g. Science days organized by other schools.

H. STRATEGIES FOR TEACHING AND LEARNING

Science in school is currently taught through Science based topics. In KS1 there is a yearly cycle and in KS2 a two year cycle which enables work to be revisited at a different level. Children may be taught as a whole class, work in a group or individually. The groups may be of mixed or matched ability. Activities are differentiated for different ability levels and children with special needs will be supported within the classroom. There is both knowledge based and investigative Science taught in all the classrooms.

I. RESOURCES

KS1

Resources are allocated to each classroom where they are stored by the class teacher. There is a central store of consumables such as batteries for work on electricity.

KS2

The resources are stored in several locations near Junior classrooms, and the cupboards are labelled where possible. A spreadsheet lists resources in the Junior part of the school and this is located in the *Teacher Shared / Science Files / Supporting Documents* directory. It is the responsibility of each adult to keep the resources neat and tidy and to tell the co-ordinator(s) if any resources need replacing.

J. CONTRIBUTION TO OTHER AREAS OF THE CURRICULUM

Science has many links to other areas of the curriculum. These include:-

- English – reporting on experiments / information texts.
- Maths – showing data results in graphs and measurements.
- Music – vibration, tone and pitch.
- ICT – using as a tool for research, data logging, simulating, data handling, to practise and reinforce skills and to develop word processing skills.
- P.E. – using exercise to show changes in the body and to investigate forces.
- DT - using scientific knowledge to manufacture and refine projects, e.g. musical instruments.

K. EQUAL OPPORTUNITIES

All children are given access to the Science curriculum. The Schemes of Work are used to provide differentiation by outcome and intervention. Boys and girls have equal access to all resources and this is carefully monitored.

Gifted and talented children are identified in line with the Gifted and Talented Policy and planning will include extension activities for these children.

L. HEALTH AND SAFETY

All teachers, children and other adults in school are expected to be aware of the need for safe working at all times. If any of these groups are unsure of anything, then they should consult with the co-ordinator(s) for extra help and advice.

M. ASSESSMENT, RECORDING AND REPORTING

Pupil achievement is recorded in the Foundation Stage Profile, which is passed to KS1 teachers for formative planning (Note - the Early Learning Goal statements do not correlate directly with KS1 levels).

In KS1 and KS2, the National Curriculum Attainment Targets set out the knowledge, skills and understanding that the pupils are expected to have by the end of each key stage. At the end of each topic/unit children are assessed against a number of descriptors and grouped into three categories. One category will be the expected level of achievement, one will exceed this level and one will be below the expected level. This assessment is used to monitor and plan for further work, also it enables teachers to write an annual report to the parents on their child's ability in Science.

Assessment information is stored on spreadsheets entitled "Assessment Spreadsheet XX" (where XX stands for the year in which a year group started in Year 1), and are kept in the *Teacher Shared / Science Files / Assessment Files* directory. These spreadsheets can be used to produce the topic/unit assessment

sheets and graphical data. This directory also contains Word files explaining how to input and retrieve data using the spreadsheets.

In addition, year 6 keep assessment data relating to their year group on a separate spreadsheet.

The spreadsheet approach to collecting assessment data in Years 1 – 5 came into operation from the start of the 2008/9 year.

In addition, children's progress in Sc1 is recorded on individual sheets for each child and passed on from year to year.

N. DOCUMENTATION

The *Teacher Shared / Science Files* directory of the Teacher Shared Directory contains plans for each topic that a year group teaches, along with documentation such as the Improvement Plan and Curriculum map.