Science Policy

Approved: May 2013
Review: June 2015

Aims and Objectives

We live in an increasing scientific and technological age where children need to acquire the knowledge, skills and attitudes to prepare them for life in the 21st century. We at Kender Primary School believe that the teaching of science develops in children an interest and curiosity about the world in which they live, and fosters in them a respect for the environment.

As a result of our science teaching we want to develop children who:

- are able to keep up with the increasing scientific and technological age we live in.
- are observant, curious and caring about our environment;
- see science as an enjoyable experience
- can work individually and cooperatively, listening to, and valuing the opinions of others;
- are able to relate science to everyday life and appreciate its contribution both in the present, and historically, to our society and other cultures;
- appreciate the nature of science and the importance of collecting evidence.

Develop through practical work the skills of observation, prediction, investigation, interpretation, communication, questioning and hypothesizing, and increased use of precise measurement skills and ICT.

At KS1 pupils:

- observe, explore and ask questions about living things, materials and physical phenomena.
- begin to work together to collect evidence to help them answer questions and to link this to simple scientific ideas.
- begin to evaluate evidence and consider whether tests or comparisons are fair. use reference materials to find out more about scientific ideas.
- share ideas and communicate them using scientific language, drawings, charts and tables with the help of ICT if it is appropriate.

At KS2 pupils:

- learn about a wider range of living things, materials and physical phenomena. make links between ideas and explain things using simple models and theories.
- apply their knowledge and understanding of scientific ideas to familiar phenomena, everyday things and personal health.
- think about the effects of scientific and technological developments on the environment and in other contexts.
- carry out more systematic investigations, working on their own and with others.
- use a range of reference sources in their work.
- talk about their work and its significance, using a wide range of scientific language, conventional diagrams, charts, and ICT to communicate their ideas.

Curriculum

In Nursery and Reception, the staff follow the 'Early Learning Goals' [DFES 2003], which gives the children opportunities to find out about the world they live in.

In KS1 and KS2 we follow the QCA exemplar scheme of work for science. This scheme of work provides teachers with long and medium term planning and also provides some aspects of short term planning. The examplar scheme is underpinned by assumptions about the aims and purposes of teaching science at Key stages 1 and 2, which also underpin the National Curriculum programme of study. Within each unit, staff are not only expected to develop the children's scientific knowledge and understanding, process skills and attitudes to scientists, but also supports the progression of other areas of the child's development. The scheme also ensures children make progress in science by providing opportunities for them to do so as they move through key stages 1 and 2.

Science is taught as a discrete subject. It is expected that Science will usually be taught over 2 separate sessions a week, amounting to a minimum of 1 ½ hour in KS1 and 2 hours in KS2.

Teachers are asked to follow the school's curriculum map for Science, which promotes curriculum continuity and progress in children's learning. This follows the correct order of QCA units. Any changes need to be discussed with the subject leader.

Short term planning is the responsibility of individual teachers who build on the medium term plan by taking into account the needs of the children in their particular class. Before teacher's plan they carry out an assessment task for the forthcoming unit, so that they can plan for the needs of the class.

Target posters are available on Curriculum shared – Planning folder – Science.

The QCA units provide teachers with a clear knowledge and skills focus. We follow the guideline that in KS1 there should be a balance of 50% subject knowledge and 50% skills and KS2 60% subject knowledge and 40% skills.

The learning environment

All classrooms should have a science working wall, including specific science vocabulary related to each unit as well as the skills being used by the children. If you choose to use vocabulary print outs from websites such as Sparklebox, or Twinkl, please make sure that you have displayed the vocabulary specified by the QCA.

Inclusion

Planning at all levels ensures that the interest of boys and girls are taken into account.

The pupils work individually, in pairs, as part of a small group and as a whole class each term. They use a variety of means for communicating and recording their work.

Educational support staff work as directed by the teacher. They are able to refer to a planning sheet for the particular group they are working with. Where educational assistants are assigned to pupils with special educational needs, they are well briefed beforehand.

All pupils, including those with special educational needs, undertake the full range of activities. Teacher assessment determines the depth to which individuals and groups go during each unit of work.

Annotated planning shows how activities have been adapted or extended for the needs of all pupils and, where appropriate, how they relate to Individual Education Programmes [IEPs]/Provision Maps.

Resources
Science resources are centrally stored in the science cupboard opposite year 4. Equipment is stored in labelled trays in large open cupboard units. The responsibility, setting up and maintaining this area is that of the subject leader. However, the whole staff are responsible for ensuring a record is kept of borrowed items [in borrowing book] and that broken or used equipment is reported to the subject leader so that, repairs, replacements or new orders can be made. It is also the borrower's responsibility to return items to the correct storage area when no longer required. NB. Under no circumstances are children allowed access to the science resource area.

Reference can be made to the science bay list of resources and to appropriate books in the school and staff libraries. IT resources, IWB's and the Espresso package are also available to compliment the teaching of the subject.
As well as QCA unit plans on the system, teachers are encouraged to leave their own plans that they may have adapted for a topic.

Assessment and Record Keeping:
Assessment for learning is continuous throughout the planning, teaching and learning cycle. However children are more formally assessed half termly in KS1 and KS2 using a variety of methods:

- Observing children at work, individually, in pairs, in a group, and in classes
- Questioning, talking and listening to children
- Considering work / materials / investigations produced by children together with discussion about this with them.
- End of unit assessment tests or assessments

Children's progress is continually monitored and tracked throughout their time at Kender Primary School.

Target posters should be adapted and stuck into the children's books at the beginning of a unit. They should be referred to throughout unit and at end of topic to support self-assessment.

Summative assessment should be carried out at the end of each unit on the End of unit summary sheet (appendix 1) This can be found on Curriculum shared - Planning folder – Science.

End of unit assessment sheets should be passed on to the next teacher in the hand over pack at the end of the year.

Teachers should use these end of unit assessments to plan for progression for the next unit.

Health and Safety
Science is taught in line with our general school Health and Safety Policy.

Science in our school is very safe. However, when children are engaged in a variety of practical activities, included open-ended investigations, there is always the possibility that something could go wrong, therefore, vigilance is needed.

The QCA units point out specific health and safety issues in relation to each lesson; these are generally consistent with advice given in 'Be Safe'. Copies of this booklet are kept in the science resource area and the staff room. All staff are expected to be familiar with its contents and to follow its guidance.

The governing bodies code of practice for Health and Safety in Primary Science is encompassed in the booklet 'Be Safe!' Copies of this booklet are kept in the science resources cupboard and PPA room. All staff are expected to be familiar with its contents and to follow its guidance.

The LA maintains a subscription to CLEAPSS school science service (Brunel University, Uxbridge) This organisation produces a termly newsletter, Primary Science and Technology and a wide range of guides about primary science, especially resources. They also provide a helpline number: 01895 251496 which teachers can use for Health and Safety advice and other issues concerning science.

Using this advice, individual teachers will need to undertake their own specific risk assessment.

Any trips should have been planned with due regard to the school policy on taking children on outings. LA guidance may need to be sought on trips involving farms etc.

Science
End of Unit Summary Sheet

Unit of work: _____ Class/Term/Year: _____
Main focus: _____

*Please refer to Science **QCA unit expectations** - these can be found in Curriculum shared – Planning folder – QCA unit plans – Science QCA units.*

Pupils **below** unit expectations
Pupil name Difficulty Suggested further action *Be specific to skills/knowledge that children have not achieved.* *Suggested further action: Has to be a **skill** that can be worked on in following unit/year.*

Pupils who made **expected** progress

Pupils who **exceeded** unit expectations
Pupil name Comments *In which areas are the children exceeding? E.g. specific skills or knowledge*

Comments for next teacher / subject leader