



Science Policy

RATIONALE

Science is a systematic investigation of the physical, chemical and biological aspects of the world which relies on first hand experiences and on other sources of information. The scientific process and pupils' problem-solving activities will be used to deepen their understanding of the concepts involved. The main aspects of science to be studied will be determined by the programmes of study of the National Curriculum.

Through science, pupils at Cookham Dean CE Aided Primary School will continue to deepen their respect, care and appreciation for the natural world and all its phenomena.

AIMS

Our Science Policy follows The National Curriculum 2014 for Science Guidelines and aims to ensure that all pupils:

- develop **scientific knowledge and conceptual understanding** through the specific disciplines of Biology, Chemistry and Physics;
- develop understanding of the **nature, processes and methods of Science** through different types of science enquiries that help them to answer scientific questions about the world around them;
- pupils' are equipped with the scientific knowledge required to understand the **uses and implications** of Science, today and for the future.
- to introduce pupils to the language and vocabulary of science
- to develop pupil's use of information and communication technology (ICT) in their science studies.
- to extend the learning environment for our pupils via our environmental areas within our locality
- to continue to embed the 5 r's throughout lessons
- to promote a 'healthy lifestyle' in our pupils

OBJECTIVES

The following objectives derived from the above aims will form the basis of our decisions when planning a scheme of work. Assessment and PSHE (see policy) opportunities will also be related to these objectives:

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

- to develop a knowledge and appreciation of the contribution made by famous scientists to our knowledge of the world including scientists from different cultures
- 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 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 pupils to predict the likely outcome of their investigations and practical activities

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 range of specific investigations and practical work which gives them a worth-while experience to develop their understanding of science
- to develop progressively pupils' ability to plan, carry out and evaluate simple scientific investigations and to appreciate the meaning of a 'fair test'.

To develop the ability to record results in an appropriate manner including the use of diagrams, graphs, tables and charts:

- 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' basic practical skills and their ability to make accurate and appropriate measurements
- within practical activities, give pupils opportunities to use a range of simple scientific measuring instruments such as thermometers and force meters and develop their skill in being able to read them.

To develop pupils' use of information and communication technology (ICT) in their science studies:

- to give pupils opportunities to use ICT (such as, video, digital camera, data logger) to record their work and to store results for future retrieval throughout their science studies
- to give pupils the chance to obtain information using CD-ROMs and other data bases.

Principles of teaching and learning

Differentiation and Additional Educational Needs

The study of science will be planned to give pupils a suitable range of differentiated activities appropriate to their age and abilities. Tasks will be set which challenge all pupils, including the more able. For pupils with SEN (see policy) the task will be adjusted or pupils may be given extra support. The grouping of pupils for practical activities will take account of their strengths and weaknesses and ensure that all take an active part in the task and gain in confidence.

Breadth and Balance

We will ensure that all staff, including those in a supportive role, have a clear idea of the concepts and skills to be taught. The importance of Attainment Target 1 (Experimental and Investigative Science) which has a fifty per cent weighting at Key Stage 1 and a forty per cent weighting at Key Stage 2, will be stressed. The other Attainment Targets (AT2, AT3 and AT4) will be taught using an experimental and investigative approach. We will select the content to ensure a balanced coverage of the National Curriculum programmes of Study.

Variety.

Pupils will be involved in a variety of structured activities and where appropriate, in more open-ended investigative work:

- activities to develop good observational skills
- practical activities using measuring instruments which develop pupils' ability to read scales accurately
- structured activities to develop understanding of a scientific concept
- open ended investigations.

On some occasions pupils will carry out the whole investigative process themselves or in small groups.

Relevance

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

Cross-curricular skills and links

Science pervades every aspect of our lives and we will relate it to all areas of the curriculum. We will also ensure that pupils realise 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, which some human activities can produce.

Continuity and Progression

Early Years Foundation Stage pupils investigate science as part of Knowledge & Understanding of the World. 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. 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. How this is achieved is indicated in our schemes of work for science for each year group.

Equality of Opportunity (see policy)

All children have equal access to the science curriculum and its associated practical activities. The SLT, Class Teachers and TAs at Cookham Dean Primary School are responsible for ensuring that all children, irrespective of gender, learning ability, physical disability, ethnicity and social circumstances, have access to the whole curriculum and make the greatest possible progress. Where appropriate, work will be adapted to meet pupils' needs and, if appropriate, extra support given. More able pupils will be given suitably challenging activities. Gender and cultural differences will be reflected positively in the teaching materials used. All children have equal access to the Science Curriculum, its teaching and learning, throughout any one year. This is being monitored by analysing pupil performance throughout the school to ensure that there is no disparity between groups.

Health and safety

Pupils will be taught to use scientific equipment safely when using it during practical activities. Class Teachers and Teaching Assistants will check equipment regularly and report any damage to the subject leader, taking defective equipment out of action. A simple risk assessment will be carried out for all practical activities. The Subject Leader, together with the Headteacher will review risk assessments annually. The school has adopted the ASE book 'Be Safe' as its model risk assessment and therefore this should be consulted when necessary. If an activity is not covered by 'Be Safe' then we will contact CLEAPSS (School Science Service Helpline 01895251496) for further advice.

Assessment for Learning, recording and reporting.

Assessment opportunities will be identified within schemes of work. At Key Stage 1 the only statutory assessment for science is teacher assessment and therefore assessments will be recorded appropriately and some examples of work held in portfolios/scrap books. Levels awarded will be in line with the schools assessment of emerging, expected and exceeding and will be moderated within the school. At Key Stage 2 similar arrangements will be followed. The assessment of AT1 (experimental and investigative work) will rely on a mixture of evidence from pupils' everyday practical work throughout the key stage and other more independent investigations carried out by the pupils.

Marking (see policy)

Much of the work done in science lessons is of a practical or oral nature and, as such, recording will take many varied forms thus making marking different. It is, however, important that written work is marked regularly and clearly, as an aid to progression and to celebrate achievement. When appropriate, pupils may be asked to self-assess or peer assess their own or other's work. Marking for improvement comments in a child's book must be relevant to the learning objective to help children

to better focus on future targets. It is imperative that children are given the time to improve their work and teachers will support children by scaffolding improvements as necessary.

Management and administration

An annual key stage meeting will be held to review the needs of science. Personal development of staff and training needs will be discussed. The Science Subject Leader will organise and lead these meetings.

Role of the subject Leader (Also see Science Subject Leader's job description).

The Subject Leader will provide professional leadership and management for science and will ensure that it is managed and organised so that it meets the aims and objectives of the school. The Subject Leader alongside the Head teacher will monitor teaching and learning within the subject and will initiate reviews of the scheme of work.

Resourcing

In order to encourage an investigative approach to learning, sufficient basic equipment to allow simple investigations, observations and measurements to be carried out in small groups, will be held in a central place. If there is a lack of equipment, the science subject leader must be notified, who will see that the level of resourcing is maintained. For small 'one off' investigations which involve; for example, flour, sugar etc.; the class teacher will purchase and then fill in the appropriate form for re-imbursement. More specialist pieces of equipment and those posing a potential safety risk can be borrowed from the science department at Furze Platt senior school as and when required. It is the teacher's responsibility to borrow these directly.

Policy reviewed and updated	:	
Reviewed by	:	School staff and Curriculum Committee
Signed	:	_____
Date	:	_____
Next Review	:	
Adopted by the Governing Body on	:	 (date)
Signature of Chair of Governors	:	
