CHADDESLEY CORBETT ENDOWED PRIMARY SCHOOL SCIENCE POLICY

Principles of Learning and Teaching of Science

Science is a systematic investigation of the physical, chemical and biological aspects of the world which relies on first hand experiences and 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 Chaddesley Corbett Endowed Primary School will continue to deepen their respect, care and appreciation for the natural world and all its phenomena.

Aims and Objectives

Aims

- To develop pupils' enjoyment and interest in science and an appreciation of its contribution to all aspects of everyday life.
- To build on pupils' curiosity and sense of awe of the natural world.
- To use a planned range of investigations and practical activities to give pupils a greater understanding of the concepts and knowledge of science.
- To introduce pupils to the language and vocabulary of science.
- To develops pupils' basic practical skills and their ability to make accurate and appropriate measurements.
- To develop pupils' use of information and communication technology (ICT) in their science studies.
- To extend the learning environment for our pupils via our environmental areas and the locality.
- 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 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 the 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 (including digital microscope, video, data loggers, I-Pads) to record their work and to store results for future retrieval throughout their science studies
- To give pupils the chance to obtain information using the Internet.

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 the task will be adjusted or pupils may be given extra support. The grouping of pupils for practical activities will take into account their strengths and weaknesses and ensure that all take an active part in the task and gain in confidence. Extra-curricular activities for Gifted and Talented pupils are identified and pupils given the opportunity to attend these.

Variety

Pupils will be involved in a variety of structured activities and in more open-ended investigative work;

- Activities to develop good observation skills
- Practical activities using measuring instruments which develop pupils' ability to read scales accurately
- Structured activities to develop understanding of a scientific concept
- Opened ended investigations

Relevance

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

Planning

Long term planning in science follows the units laid out in the new National Curriculum document and is supported through the use of the Plymouth Science Scheme. Planning for individual units will follow the school's planning policy and format and will be updated regularly and stored in the planning folder in the staff area of the network.

Continuity and Progression

Early Years Foundation stage pupils investigate science mainly as part of 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 investigations 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.

Science across the Curriculum

English

Science contributes significantly to the teaching of English by actively promoting the skills of reading, writing, speaking and listening. Some of the texts that the children study in English are of a scientific nature. The pupils develop oral skills in science lessons through discussions 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 pupils 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. They also produce diagrams, charts and graphs using the data from real investigations.

Information and communication technology (ICT)

Pupils 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. Pupils use ICT (computers, IPads and data loggers) to record, present and interpret data and to review, modify and evaluate their work and improve its presentation.

Personal, social and health education (PSHE)

Science makes a significant contribution to the teaching of personal, social and health education. This is mainly in two areas. Firstly, the subject matter lends itself to raising matters of citizenship and social welfare. For example, pupils study the way people recycle material and how environments are changed for better or worse. Secondly, pupils benefit from the nature of the subject in that it gives them opportunities to take part in debates and discussions. Science promotes the concept of positive citizenship.

Spiritual, moral, social and cultural development

Science teaching offers pupils many opportunities to examine some of the fundamental questions in life, for example, the evolution of living things and how the world was created. Through many of the amazing processes that affect living things, pupils develop a sense of awe and wonder regarding the nature of our world. Science raises many social and moral questions. Through the teaching of science, pupils have the opportunity to discuss, for example, the effects of smoking and the moral questions involved in this issue. We give them the chance to reflect on the way people care for the planet and how

science can contribute to the way we manage the earth's resources. Science teaches pupils about the reasons why people are different and, by developing the pupil's knowledge and understanding of physical and environmental factors, it promotes respect for other people.

Equality of Opportunity

All pupils have equal access to the science curriculum and its associated practical activities. The SLT, Class Teachers and LAs at Chaddesley Corbett Endowed Primary School are responsible for ensuring that all pupils, 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 pupils 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, Learning Assistants and the Subject Leader will check equipment regularly and report any damage, taking defective equipment out of action. For more information, please refer to the school's health and safety policy.

Assessment and Recording

Pupils' work is assessed in a variety of ways. Pre- assessment activities are carried out before the unit is taught to find out what the pupils already know and the Plymouth Science assessment material is used across Key Stage 1 and 2 to formally assess pupils' knowledge and understanding at the end of the unit. Teacher assessment based on a clear success criteria, observations, questioning and marking of books is also used to inform teachers of the progress pupils are making and these judgements are recorded on a science tracking system which travels with the pupils as they progress through the different key stages.
The assessment of the working scientifically skills (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. This will also be tracked formally using a tracking system.

Marking for improvement: 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. Marking for improvement comments in a pupil's book must be relevant to the learning objective to help pupils to better focus on future targets. It is imperative that pupils are given the time to improve their work and teachers will support pupils by scaffolding improvements as necessary.

Resources

A range of resources to support the teaching and learning are available in school and are stored in the science stock cupboard. The library also contains a good supply of science topic books. Staff inform the subject leader of any requirement for new apparatus.

Monitoring

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 will monitor teaching and learning within the subject and will initiate reviews of the scheme of work. The Subject Leader will manage the resources for science and will maintain the stock to meet the needs of the curriculum. The effectiveness of the science curriculum will be evaluated in discussions with the Headteacher, Key Stage Phase Managers and the Science Subject Leader. Priorities for in service support and external review will be established.
This evaluation will form the basis for an action plan, which will then inform the School Improvement Plan.
This policy will be reviewed annually by the Science Subject Leader or as necessary in view of government or LA initiatives, analysis of assessments or curriculum development.

This policy should be read in conjunction with the following policies:

- Teaching and Learning Policy
- Assessment Policy
- Marking Policy
- SEND Policy
- ICT Policy
- Health and Safety Policy
- Equal opportunities Policy
- Curriculum Policy

- Sex and Relationships Policy

Signed:

Date: