

Science Policy

This policy is a whole school policy including EYFS

1 Aims and objectives

- 1.1 Science teaches an understanding of natural phenomena. It aims to stimulate a child's curiosity in finding out why things happen in the way they do. It teaches methods of enquiry and investigation to stimulate creative thought. Children learn to ask scientific questions and begin to appreciate the way science will affect their future on a personal, national, and global level.
- 1.2 The aims of science are to enable children to:
- ask and answer scientific questions;
 - plan and carry out scientific investigations, using equipment, including computers, correctly;
 - know and understand the life processes of living things;
 - know and understand the physical processes of materials, electricity, light, sound and natural forces;
 - know about the nature of the solar system, including the earth;
 - evaluate evidence and present their conclusions clearly and accurately.

2 Teaching and learning style

- 2.1 We use a variety of teaching and learning styles in science lessons. Our principal aim is to develop children's knowledge, skills, and understanding. Sometimes we do this through whole-class teaching, while at other times we engage the children in an enquiry-based research activity where building learning power activities can easily be achieved through science lessons. We encourage the children to ask, as well as answer, scientific questions. They have the opportunity to use a variety of data, such as statistics, graphs, pictures, and photographs. They use ICT in science lessons where it enhances their learning. They take part in role-play and discussions and they present reports to the rest of the class. They engage in a wide variety of problem-solving activities. Wherever possible, we involve the pupils in 'real' scientific activities, for example, researching a local environmental problem or carrying out a practical experiment and analysing the results.
- 2.2 We recognise that there are children of widely different scientific abilities in all classes and we ensure that we provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this in a variety of ways by:
- setting common tasks which are open-ended and can have a variety of responses;
 - setting tasks of increasing difficulty (we do not expect all children to complete all tasks);
 - grouping children by ability and setting different tasks for each ability group;
 - providing resources of different complexity, matched to the ability of the child;
 - using classroom assistants, when appropriate to support the work of individual children or groups of children.
 - Teacher scribing what the child says

3 Science curriculum planning

- 3.1** The school uses Science Bug as the starting point for curriculum planning supplemented with other resources.
- 3.2** The scheme allows curriculum planning in science in three phases (long-term, medium-term and short-term). The long-term plan maps the scientific topics studied in each term during the key stage. In some cases we combine the scientific study with work in other subject areas, especially at Key Stage 1; at other times the children study science as a discrete subject.
- 3.3** The medium-term plans give details of each unit of work for each term.
- 3.4** Class teachers are responsible for using the detailed lesson plans or daily plans. These plans list the specific learning objectives of each lesson. The science subject leader often discusses them on an informal basis with the class teacher.
- 3.5** The topics in science are planned so that they build upon prior learning. There are opportunities for children of all abilities to develop their skills and knowledge in each unit so that the children are increasingly challenged as they move up through the school.

4 Foundation Stage

- 4.1** We teach science in nursery and reception classes as an integral part of the topic work covered during the year. As these classes are part of the Foundation Stage, we relate the scientific aspects of the children's work to the objectives set out in the Early Years Foundation Stage, which underpin the curriculum planning for our children aged three to five. Science makes a significant contribution to the objective in the EYFS of developing a child's knowledge and understanding of the world, e.g. through investigating what floats and what sinks when placed in water.

5 The contribution of science to teaching in other curriculum areas

5.1 English

Science contributes significantly to the teaching of English in our school 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 children develop oral skills in science lessons through discussions and investigations and through recounting their observations of scientific experiments. They develop their writing skills through writing reports and projects and by recording information.

5.2 Mathematics

Science contributes to the teaching of mathematics in a number of ways. The children 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.

5.3 Bushcraft/Outdoor Learning

Much of the Science curriculum can be taught through Bushcraft and outdoor learning opportunities provided at the school e.g plants, habitats which are aimed at different

ability levels.

5.4 Computing

Children 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.

Children use ICT to record, present and interpret data and to review, modify and evaluate their work and improve its presentation.

5.5 Personal, social and health education (PSHE) and citizenship

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, children study the way people recycle material and how environments are changed for better or worse. Secondly, children benefit from the nature of the subject in that it gives them opportunities to take part in debates and discussions. They organize campaigns on matters of concern to them, such as helping the poor or homeless. Science promotes the concept of positive citizenship. Science covers many areas of health education including drugs as medicines, sex education and teeth.

5.6 Spiritual, moral, social and cultural development

Science teaching offers children 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, children 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, children 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 children about the reasons why people are different and, by developing the children's knowledge and understanding of physical and environmental factors, it promotes respect for other people.

5.7 Where sensible cross-curricular links are possible they are embraced, often through themed based learning.

6 Teaching science to children with special needs and disabilities

6.1 We teach science to all children, whatever their ability. Science forms part of the school curriculum policy to provide a broad and balanced education for all children. We provide learning opportunities that are matched to the needs of children with learning difficulties and disabilities. Our work in science takes into account the targets set for individual children.

7 Assessment and recording

7.1 We assess children's work in science by making informal judgements as we observe them during lessons. On completion of a piece of work, the teacher marks the work and comments as necessary. At the end of a unit of work a summary judgement is made about the work of each pupil. We use this as the basis for assessing the progress of each child and we pass this information on to the next teacher at the end of the year. At the end of each unit an assessed task is set.

- 7.2 The science subject leader keeps samples of children's work in a subject file and uses these to demonstrate what the expected level of achievement is in science for each age group in the school.

8 Resources

- 8.1 We have sufficient resources for all science-teaching units in the school. We keep these in a central store where there is a box of equipment for each unit of work and a collection of science equipment, stored in the basement.. The library contains a good supply of science topic books and computer software to support children's individual research.

9 Monitoring and review

The role of subject leaders is to:

- provide a strategic lead for the subject with the aim of improving standards;
- offer support and advice to colleagues on the subject;
- monitor pupil progress in that subject area across the school through observations and discussion with staff and children. Also through leveling work. stored in subject leader files;
- review the way the subject is taught at the school and plan for improvement;
- understand current standards in the subject across the school and how this compares to expected targets;
- plan how we are going to improve standards in conjunction with staff and principals;
- provide efficient resource management for the subject;
- review the curriculum plans for the subject and ensure that there is coverage of the National Curriculum, where we feel it is appropriate, and that progression is planned into schemes of work;
- to keep up to date with the developments in the subject at both national and local level;
- keep detailed information on their subject in a subject leader file;
- work with the principal to produce a development plan for the subject which links the whole school objectives;
- review policy annually;

The school gives subject leaders non-contact time, so that they can carry out the necessary duties involved with their role.

This policy is the principal's ongoing responsibility along with reviewing its effectiveness annually.

Signed:

Date: