Science Policy

1 Aims

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 in which science will affect the future on a personal, national, and global level.

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1.2 The objectives of teaching 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, aiming to develop our children's knowledge, skills and understanding. This is achieved through activities such as whole class teaching, combined with enquiry-based research activities. Pupils have the opportunity to use a variety of data, such as statistics, graphs, pictures and photographs. They use a range of primary and secondary resources, including ICT. They take part in discussions and present their findings in reports to the rest of the class. They engage in a wide variety of problem-solving investigations, carrying out practical experiments, wherever possible, predicting and analysing their results in class based and homework situations.

2.2 We recognise that in all classes children have a wide range of scientific abilities, 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:

- setting 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 in the room, and setting different tasks for each ability group;
- providing resources of different complexity, matched to the ability of the child including extension activities for our Gifted and Talented children
- prioritising the role of our Teaching Assistants to support the work of individual children or groups of children.
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3 Science curriculum planning

3.1 The school uses the national scheme of work for science as the basis of its curriculum planning. The national scheme has been adapted to the local circumstances of the school in that we make use of the local environment in our fieldwork.

3.2 We carry out our 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. The science subject leader works this out in conjunction with teaching colleagues in each year group.

3.3 Our medium-term plans give details of each unit of work for each term. The science subject leader keeps and reviews these plans. As we have mixed-age classes, we do our medium-term planning on a two-year rotation cycle. In this way we ensure complete coverage of the National Curriculum without repeating topics.

3.4 The class teacher is responsible for short-term planning. This planning highlights the specific learning objectives and expected outcomes of each lesson. We cover the units of work using the Ginn New Star Science scheme as a core. This relates directly to the QCA scheme of work.

3.5 We have planned the topics in science so that they build on prior learning. We ensure that there are opportunities for children of all abilities to develop their skills and knowledge in each unit, and we also build progression into the science scheme of work, so that the children are increasingly challenged as they move up through the school.

4 The Foundation Stage

4.1 We teach science in the Foundation Stage as an integral part of the topic work covered during the year. As Corfe Class is part of the Foundation Stage of the National Curriculum, we relate the scientific aspects of the children's work to the objectives set out in the Early Learning Goals (ELGs) which underpin the curriculum planning for children aged three to five. Science makes a significant contribution to developing a child's knowledge and understanding of the world, for example through investigating what floats and what sinks when placed in water.

As part of the Foundation Stage we teach science in Corfe Class within the area of learning, 'Knowledge and Understanding of the World'.

The children will have opportunities to:

- show curiosity about their surroundings
- investigate objects, materials and living things
- ask questions about how things work and why things happen
- use everyday technology, including ICT.

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 their Literacy lessons are of a scientific nature. The children 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.

5.2 Mathematics

Science contributes to the teaching of mathematics in a number of ways. When the children use weights and measures they are learning to use and apply number. Through working on investigations they learn to estimate and predict. They develop accuracy in their observation and recording of events. Many of their answers and conclusions include numbers.

5.3 Personal, social and health education (PSHE) and Citizenship

Science makes a significant contribution to the teaching of PSHE and Citizenship. This is mainly in two areas. Firstly, the subject matter lends itself to raising matters of citizenship and social welfare. Secondly, the subject gives children numerous opportunities to debate and discuss.

5.4 Spiritual, moral, social and cultural development (SMSC)

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.

6 Science and ICT

Information and Communication Technology enhances the teaching of science in our school. It also offers ways of impacting on learning which are not possible with conventional methods. Software is used to animate and model scientific concepts, and to allow children to investigate processes which it would be impracticable to do directly in the classroom. Children learn how to find, select, and analyse information on the Internet and on other media.

7 Science and inclusion

7.1 At our school we teach science to all children, whatever their ability and individual needs. Science is an important part of the school Curriculum Statement which confirms our aim to provide a broad and balanced education to all of our children.

8 Assessment

8.1 Teachers assess children's work in science by making informal judgements during lessons, particularly within practical sessions. Written work is marked in accordance with the school marking policy.

8.2 At the end of each unit of work, throughout the year, pupils are assessed for tracking purposes. Teachers make a formal overall assessment of the children's work in science at the end of Key Stage 1 and Key Stage 2.

9 Resources

9.1 We have sufficient resources for all science teaching units in the school. Any resources that are not normally to be found in the classrooms are kept in the science cupboard and are accessible to the pupils only after permission has been sought from a member of staff. The library contains a good supply of science topic books and there is computer software to support children's individual research.

9.2 We use the "Be Safe!" booklet for guidance on safety matters, which is available for all teaching staff and other adults assisting in school. It can be found in the science cupboard.

10 Monitoring and review

10.1

It is the responsibility of the subject leader to monitor the standards of children's work and the quality of teaching in science. The subject leader is also responsible for ensuring the availability of long term and consumable resources, for supporting colleagues in their teaching and for being informed about current developments in the subject.