Science Policy

Policy Number: B13				
Version	Date Issued	Prepared By	Approved By	Comments
1	August 2011	SMT	SMT	Policy Created
3	March 2013	SMT	SMT	Reviewed
3	March 2015	SMT	SMT	Reviewed
4	March 2017	SMT	SMT	Reviewed

Subject Weighting; 1 – 1 ½ hours per week.

1. Aims

The science syllabus aims to:

- provide pupils with experiences which build on their interest in and stimulate their curiosity about their environment;
- provide pupils with scientific concepts to help them understand themselves and the world around them;
- provide pupils with opportunities to develop skills, habits of mind and attitudes necessary for scientific inquiry;
- prepare pupils towards using scientific knowledge and methods in making personal decisions;
- help pupils appreciate how Science and Technology influence people and the environment.

Learner Attributes:

Curiosity: to explore their environment and question the information they acquire.
Keenness: to identify and answer questions through carrying out investigations.
Creativity: in suggesting novel and relevant ways to solve problems.
Open-mindedness: to accept all knowledge as tentative and to change their view if the evidence is convincing.
Perseverance: in pursuing a problem until a satisfying conclusion is found.
Concern: for living things and awareness of the responsibility they have for the quality of the environment.

2. Objectives

Our objectives in the teaching of science are for all our children:

- to ask and answer scientific questions;
- to plan and carry out scientific investigations, with the correct use of equipment (including computers);
- to know about life processes;
- to know about materials, electricity, light, sound, and natural forces;
- to know about the nature of the solar system, including the earth;

- to know how to evaluate evidence, and to present conclusions both clearly and accurately.

Science teaches an understanding of natural phenomena. It aims to stimulate a child's curiosity in finding out why things happen in the way that 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.

3. Effective Teaching and Learning Styles

We encourage the children to ask, as well as answer scientific questions and can 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, e.g. carrying out a practical experiment and analysing the results. These skills are taught through a variety of whole class, group and individual theory and practical activities. Allowing pupils of all abilities to access the curriculum through a variety of mediums.

4. Science curriculum planning

The school uses the national scheme of work for science as the basis of its curriculum planning. Key Stage 1 and 2 use the Hamilton Trust Schemes of work for Science and Science Directions for science planning. The planning for science is guided by the whole school planning policy. There are also supplementary schemes of work available including Twinkl.

The class teacher is responsible for writing the daily lesson plans for each lesson (short-term plans). These plans list the specific learning objectives and expected outcomes of each lesson. The class teacher keeps these individual plans, and s/he and the science CIS subject coordinator often discuss them on an informal basis.

The topics are planned to build on the students' knowledge year by year. 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.

5. The Foundation Stage

In EYFS the classes cover many different areas of Science as an integral part of the topic work covered during the year. In EYFS 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, e.g. through investigating what floats and what sinks when placed in water.

6. The contribution of science to teaching in other curriculum areas

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 the Literacy Hour are of a scientific nature. The children develop oral skills in science lessons through discussions (e.g. of the environment) and through recounting their observations of experiments. They develop their writing skills through writing reports and projects and by recording information.

Mathematics

Science contributes to the teaching of mathematics in several 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.

Personal, social and health education (PSHE)

Science makes a significant contribution to the teaching of PSHE. 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 in which people recycle material and how environments are changed for better or worse. Secondly, the subject gives children numerous opportunities to debate and discuss. Science thus promotes the concept of positive citizenship.

Social and cultural development

Science teaching offers children many opportunities to examine some of the fundamental questions in life, e.g. 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 in which 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. In Year 5 and 6 the children study sex education.

7. Science and Computing

ICT enhances the teaching of science in our school significantly, because there are some tasks for which ICT is particularly useful. 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 use ICT to record, present and interpret data, to review, modify and evaluate their work, and to improve its presentation. Children learn how to find, select, and analyse information on the Internet and on other media.

8. Science and inclusion

At our school, we teach science to all children, whatever their ability and individual needs. Science forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our science teaching, we provide learning opportunities that enable all pupils to make good progress. We strive hard to meet the needs of those pupils with special educational needs, those with disabilities, those with special gifts and talents, and those learning English as an additional language, and we take all reasonable steps to achieve this.

We enable all pupils to have access to the full range of activities involved in learning science. Where children are to participate in activities outside the classroom (a trip to a science museum, for example), we carry out a risk assessment prior to the activity, to ensure that the activity is safe and appropriate for all pupils.

9. Assessment for learning

Teachers will assess children's work in science by making informal judgements during lessons. On completion of a piece of work, the teacher assesses it, and uses this assessment to plan for future learning. Written or verbal feedback is given to the child to help guide his/her progress and an opportunity to edit the work that they have completed according to the assessment.

10. Resources

We have sufficient resources for all science teaching units in the school. We keep these in the Central Storage Room. The library contains a good supply of science topic books.