STAPELEY BROAD LANE CE PRIMARY SCHOOL

Science Policy

1 Aims

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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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

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. 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 Computing in science lessons because it enhances their learning. They may engage in a wide variety of problem-solving activities. Wherever possible, we involve the pupils in real scientific activities, for example, investigating a local environmental problem, or carrying out a practical experiment and analysing the results.

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.

3 Science curriculum planning

We use Grammarsaurus Science Curriculum to give a structure to the teaching of science which supports the teaching of Science across the school.

The school uses the national curriculum for science to support this planning.

Our curriculum planning for Science is in three phases (long-term, medium-term and short-term).
Our long-term plan maps the science topics studied in each half term during each key stage. Topics are planned so that they build on prior learning. Children of all abilities have the opportunity to develop their skills and knowledge in each unit and, through planned progression built into the scheme of work, we offer them an increasing challenge as they move up the school. Wherever possible, we combine the scientific study with work in other subject areas. In other cases we arrange for the children to carry out an independent scientific study.

We use the National Curriculum skills, knowledge and understanding as the basis for our medium-term plans, which give details of each unit of work for each term. In order to suit the needs of the cohort, teachers may adapt the plans.

4 The Early Years' Foundation Stage

We teach science in reception classes as an integral part of the topic work covered during the year. As the reception class is part of the Early Years' Foundation Stage, 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.

5 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 English are of a scientific nature. The children develop oral skills in science lessons through discussions (for example of the environment) 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. 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) 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. For example, children study the way people recycle material and how environments are changed for better or worse. Secondly, the subject gives children numerous opportunities to debate and discuss. They can organise campaigns on matters of concern to them, such as helping the poor or homeless. Science thus promotes the concept of positive citizenship.

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.

6 Science and Computing

Computing enhances the teaching of science in our school, because there are some tasks for which computers are particularly useful. It also offers ways of impacting on learning which are not possible with conventional methods. Data loggers are used to assist in the collection of data and in producing tables and graphs. Children use computing 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.

7 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. For further details see individual whole-school policies: Special Educational Needs; Disability Non-Discrimination; Gifted and Talented; English as an Additional Language (EAL).

When progress falls significantly outside the expected range, the child may have special educational needs. Our assessment process looks at a range of factors – classroom organisation, teaching materials, teaching style, differentiation – so that we can take some additional or different action to enable the child to learn more effectively. Assessment against the National Curriculum allows us to consider each child's attainment and progress against expected levels. This ensures that our teaching is matched to the child's needs.

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.

8 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. Older children are encouraged to make judgements about how they can improve their own work.

A simple tracker is used to summarise children's attainment at the end of each unit of work. This allows the school to produce attainment reports showing whether children have met (or not) the subject matter, and allows individual children's progress and attainment to be monitored.

Teachers summarise the work of each child in science at the end of Key Stage 1 and 2 to provide an assessment of their work. We report the results of these assessments to parents, as per statutory guidelines.

9 Resources

We have sufficient resources for all science teaching units in the school. We keep these in a central store. There is also a collection of science equipment which the children use to gather weather data. The library contains a good supply of science topic books and computer software to support children's individual research. However, we constantly review our resources to ensure that they remain appropriate and relevant to the children's learning.

10 Health and safety

In this subject the general teaching requirement for health and safety applies. We have produced a standard risk assessment document based on the advice from CLEAPS. We teach children how to follow proper procedures for food safety and hygiene.

11 Monitoring and review

Monitoring of the standards of children's work and of the quality of teaching in science is the responsibility of the science subject leader. The work of the subject leader also involves supporting colleagues in their teaching, being informed about current developments in the subject, and providing a strategic lead and direction for the subject in the school. The subject leader evaluates the strengths and weaknesses in the subject and indicates areas for further improvement. The subject leader has allocated time, during our curriculum review and evaluation plan, in which to fulfil this role by reviewing samples of children's work and informally discussing topics with the class teacher. This review also involves a discussion of the findings with a link governor.

This policy was written in Summer 2023 and reviewed in July 24.