



## **ELMRIDGE PRIMARY SCHOOL SCIENCE POLICY**

Elmridge Primary School Policy for Science March 2019

### **Science Vision**

To create engaged and enthusiastic scientists with a focus on practical activities.

### **Aims and objectives**

Science at Elmridge aims to teach our children the skills, knowledge and understanding they need to question and understand concepts and phenomena that occur in the world around them and equips them with the motivation to seek explanations for these. Children learn the skills required for scientific enquiry and they will begin to appreciate the way science will affect their future on a personal, national and global level.

The aims of science are to enable children to:

- Ask and answer scientific questions
- Plan and carry out fair scientific investigations, using equipment including computers
- 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 materials and their properties
- Evaluate evidence and present their conclusions clearly and accurately

### **Teaching and learning style**

The school uses a variety of teaching and learning styles in science lessons. Our principal aim is to develop the children's knowledge, skills and understanding. We do this through a mixture of whole-class teaching and individual/group activities. Teachers encourage the children to ask as well as answer scientific questions. The children have the opportunity to use a variety of secondary sources of information, where it will enhance learning as well as gaining first hand experiences, for example, the use of books, photographs, videos, graphs, diagrams, models and ICT.

We recognise the fact that we have children of differing scientific ability in all our classes and so 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 way by:

- Setting common tasks that are open-ended and can have a variety of responses.
- Setting tasks of increasing difficulty.
- Grouping children by ability and setting different tasks for each group.
- Providing a range of challenges with different resources.
- Using additional adults to support the work of individual children or small groups.
- Incorporating high order questions that apply to scientific thinking to extend the most able children in science.

### **Science curriculum planning**

At Elmridge science is taught as a discreet lesson across both Key Stage One and Two. The National Curriculum is used as the basis of curriculum planning.

The class teacher is responsible for planning science lessons. Teachers are able to use Rising Stars and/or twinkl planit as a guide for their planning, but they have professional freedom to plan units that match with the provided learning outcomes (these can be found on the science curriculum area of the school website).

We have planned the topics in science so that they build upon 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 progress through the school. More able learners are identified and throughout the year, enrichment opportunities are offered.

At Elmridge we believe it is vital that children have obtained appropriate practical skills in order to work scientifically, therefore each term all children will participate in a science experiment with an open ended question that children can tackle in a way they deem appropriate. This experiment will not necessarily be linked to their current unit.

### **Foundation Stage**

We teach science in the Foundation stage as an integral part of the topic work covered during the year. It comes under the umbrella of Understanding the World in the EYFS.

Children must be

supported in developing the knowledge, skills and understanding that help them to make sense of the world. Their learning must be supported through offering opportunities for them to use a range of tools safely; encounter creatures, people, plants and objects in their natural environments and in real-life situations; undertake practical 'experiments'; and work with a range of materials.

### **The contribution of science to teaching in other curriculum areas**

#### **English**

Science contributes significantly to the teaching of English at Elmridge by actively promoting the skills of thinking, reading, writing, speaking and listening. 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.

#### **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 skills. 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 will also create a wide range of graphs and tables.

### **Computing**

Children use computing 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 computers to record, present and interpret data and to review, modify and evaluate their work and improve its presentation. They may also use a range of sensors to record light and sound. We endeavour to use Ipads as a means of recording and finding scientific information.

### **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 and healthy eating and exercise. Secondly, children 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 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 pollution 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.

### **Teaching science to children with special needs**

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. Through our science teaching, we provide learning opportunities that enable all pupils to make progress.

We do this by setting suitable learning challenges and responding to each child's different needs. Assessment against the National Curriculum allows us to consider each child's attainment and progress against expected levels. Our work in science takes into account the targets set in the children's 'Passports for Learning' (Individual support plans).

### **Assessment and recording**

We assess children's work formatively in science through observations and marking. These assessments inform the class teacher's planning for future lessons. At the end of a unit of work, the class teacher makes a judgement about the children's achievements. At the start of the year, key objectives are identified that will be assessed in each unit and opportunities for assessment are planned for. Wherever possible, children are the first to assess their learning.

Assessments may take the form of a practical activity, a concept map or a written assessment (test). The teacher records these assessments on SPTO to inform reports to parents and the next class teacher at the end of the year.

### **Homework**

Science homework is set as appropriate in Key Stage One, this is often a project that children will complete at the end of a science unit.

In Key Stage Two homework is set on a weekly basis, often with a research, reading or analysis focus.

### **Resources**

We have a range of resources to support the teaching of Science across the school and all our resources are kept in the science cupboard. We ensure that this cupboard is well organised and tidy at all times.

As applicable, Pupil Premium funding may be made available to ensure that children who are in receipt of this funding and who may normally miss out on opportunities to make progress are supported to do so.

### **Monitoring and review**

It is the responsibility of the Science Subject Leader, the Headteacher and Governors to monitor the standards of children's work and the quality of teaching in science. The Science Subject Co-ordinator is also responsible for supporting colleagues in the teaching of science, for being informed about current developments in the subject and for providing a strategic lead and direction for the subject in the school. An action plan is written and reviewed annually. The science subject co-ordinator helps with the levelling and moderation of work samples to ensure consistency and calls in books and assessment folders for scrutiny and evidence of progress, with feedback being given to staff on a termly basis.

**Date:** March 2019

**Date for next review:** March 2021