Great and Little Shelford CE (Aided) Primary School

# CURRICULUM POLICY FOR SCIENCE

**The importance of Science**

A high-quality science education provides the foundations for understanding the world though the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and to develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave and analyse causes.

**Aims**

Our aims are to provide all children with the necessary skills and knowledge of science as outlined by the National Curriculum for Science 2014 which is to ensure that all pupils:

- develop **scientific knowledge and conceptual understanding** through the specific disciplines or biology, chemistry and physics
- develop understanding of the **nature, processes and methods of science** through different types of science enquiries that help them to answer scientific questions about the world around them
- are equipped with the scientific knowledge required to understand the **uses and implications** of science, today and for the future

**Vision and Principles**

After consultation with pupils, staff, parents and governors, 3 words can be used to sum up our Principles for Science. At Great and Little Shelford, we believe that Science Teaching and Learning should be:

- **Continuous**
- **Engaging &**
- **Practical**


These are made accessible to the children by the above 'Science Logo', designed by a Shelford pupil.
Our vision is for Science to be happening everywhere; at home and at school, across all ages, all children and all subjects. We aim to enthuse pupils, staff and parents alike with activities involved around discovering the world that we live in and encourage a 'hands on' approach to science following the children's own interested and ideas.

**Attainment targets**

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study. (See DfE Science Programmes of study: Key Stages 1 and 2 National Curriculum in England September 2013)
In Key Stage 1 there are attainment targets for:

- Plants; Animals, including humans; Everyday materials; Seasonal changes; Living things and their Habitats,

In Lower Key Stage 2 there are attainment targets for:

- Plants, Animals including humans, Rocks, Light, Forces and Magnets, States of Matter; Sound; Electricity;

In Upper Key Stage 2 there are attainment targets for:

- Living things and their Habitats; Animals including Humans; Properties and Changes of Materials; Earth and Space; Forces; Evolution and Inheritance; Light; Electricity

'Working scientifically' is described separately at the beginning of each programme of study. This specifies the understanding of the nature, processes and methods of science for each year group.

**Implementation**

All teachers are responsible for the planning and teaching of Science. All the children are provided with the necessary skills and knowledge of Science as outlined in the Programmes of Study in the National Curriculum 2014 for Science. 'Working scientifically' is always taught through and clearly related to substantive science content in the programme of study. It focusses on the key features of scientific enquiry, so that pupils learn to use a variety of approaches to answer relevant scientific questions.

**Subject Content:**

**Foundation Stage**

Pupils explore science topics through making predictions, using their senses to explore the world around them and investigating materials and their properties. Science is taught through the strand of 'Understanding the World'. Science teaching and learning is also linked to the other strands of the EYFS framework for learning, 2014.

Teachers and teaching assistants support pupils to develop a solid understanding of things occurring around them in their day to day lives. Children are encouraged to be creative and inquisitive as they participate in activities. Pupils are encouraged to use their natural inquisitiveness, while taking part in exploratory play in specific scientific areas as well as areas that link across the EYFS framework. Teaching and learning takes place both indoors and outdoors during both planned, adult led activities and child-initiated, spontaneous, independent opportunities.

**Key Stage 1**

The principal focus of science teaching in key stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly –constructed world around them. They are encouraged to be curious and ask questions about what they notice, and work together to collect evidence to help them answer questions. Pupils observe changes over a period of time, find patterns, group and classify things, carry out simple comparative tests and find things out using secondary sources of information.

Pupils use reference materials to find out more about scientific ideas. They share their ideas and communicate them using scientific language, drawings, charts and tables. Science lessons in Key Stage One are either taught discretely or where possible connected to other curriculum areas. Pupils often use the outdoor areas in their science learning.

Pupils read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

**Lower Key Stage 2**

The principle focus of teaching in lower key stage 2 is to enable pupils to broaden their scientific view of the world around them. They do this through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions. Children are encouraged to extend the scientific questions that they ask about what they observe in the world around them and are encouraged to make some decisions about which types of scientific enquiry are likely to be the best ways of answering them. Pupils carry out a range of enquiry types, including observation over time, pattern seeking, classifying and grouping things, carrying out simple comparative and fair tests and finding things out using secondary sources of information. Children are taught to draw simple conclusions and use some scientific language, first to talk

about and, later, to write about what they have found out. They extend their scientific learning using the outdoors areas such as the meadow and the pond.
Pupils read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge.

**Upper Key Stage 2**
The principle focus of teaching in upper key stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They do this through exploring and talking about their ideas, asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. Children are encouraged to encounter ideas that are more abstract and begin to recognise how these ideas help them to understand and predict how the world operates, as well as how scientific ideas change and develop over time. Pupils select the most appropriate ways to answer science questions using different types of scientific enquiry. Pupils are encouraged to draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings.
Pupils should read, spell and pronounce scientific vocabulary correctly.

**Information and Communication Technology**
ICT resources are used where appropriate to investigate, gather and display scientific information as well as using ICT as a research tool and to communicate ideas.

**Equal Opportunities**
The school is committed to ensuring access and inclusion for all its pupils and believes that every child deserves the opportunity to fulfil their potential. We achieve this by ensuring that our planning meets the needs of all the pupils: boys and girls, children with specific educational needs, children who are more able, children with disabilities, children from all social and cultural backgrounds, different ethnic groups and diverse linguistic backgrounds.

**Assessment**
Continuous informal assessment takes place within all key stages
End of unit assessments are made by the teacher. These assessments are collated and recorded on target tracker. Continuous informal assessment takes place in order to assess progress in the subject and enable the subject leader to discuss any relevant issues.

**Resources**
All resources are held in the Science and Technology stock cupboard or in the Forest School shed in the Wildlife Area. The science subject leader is responsible for ordering resources.