



*Belonging, Believing, Together Succeeding.*

**Policy:**

## **Science Policy**

Date Reviewed by Staff:	21/4/2022
-------------------------	-----------

Date Reviewed by Education Committee:	26/4/2022
---------------------------------------	-----------

Next Review Date: (3 years unless otherwise advised)	2025
--	------

## **Our Vision**

Our vision as a Church of England primary school, deeply rooted in a strong Christian tradition, is to develop happy, young people with enquiring minds, a lifelong love of learning, respect for themselves, others and the environment so that they will have the skills, resilience and adaptability to thrive in a rapidly changing world.

## **Rationale**

At Barrington, it is our aim to ensure the teaching of scientific knowledge, concepts and skills are part of a broad and balanced curriculum. The aim of science teaching is for our children to develop an understanding of the nature and processes involved in working scientifically and how science can help us to understand the natural world. Through hands on investigation, the study of science will help to develop an excitement and curiosity about the world around them and an appreciation of the role of science in the development of our modern world, along with its potential for future global development. This contributes to our school's overall aim of developing enquiring minds, a lifelong love of learning, respect for themselves, others and the environment so that they will have the skills, resilience and adaptability to thrive in a rapidly changing world.

Science is a systematic investigation of the physical, chemical and biological aspects of the world which relies on first hand experiences and on other sources of information. The scientific process and pupils' problem-solving activities will be used to deepen their understanding of the concepts involved. The main aspects of science to be studied will be determined by the programmes of study of the National Curriculum 2014.

Science planning is carried in three phases (long-term, medium-term and short-term) as detailed in the curriculum policy. The long-term plan maps the scientific topics studied in each term during the key stage and care is taken to ensure complete coverage of the National Curriculum without repeating topics. Our science progression map details the development of the different strands of science learning across the school and enable staff to track learning.

Working scientifically, is embedded throughout the areas of learning in key stage 1 and 2; this focuses on the key aspects of scientific enquiry which enable pupils to investigate and answer scientific questions.

## **Aims and objectives**

- to develop pupils' enjoyment and interest in science and an appreciation of its contribution to all aspects of everyday life
- to build on pupils' curiosity and sense of awe of the natural world
- to use a planned range of investigations and practical activities to give pupils a greater understanding of the concepts and knowledge of science
- to introduce pupils to the language and vocabulary of science
- to develop pupils' basic practical skills and their ability to make accurate and appropriate measurements
- to develop pupils' use of computing in their science studies.

- to extend the learning environment for our pupils via our environmental areas and the locality
- to promote a 'healthy lifestyle' in our pupils.
- To use scientific contexts to develop and consolidate cross curricular skills in English, Maths and ICT;
- To teach science within a global and historical context; including considering the contributions of significant scientists from a range of cultures and historical periods;
- To develop pupils' ability to work scientifically and involve pupils in planning, carrying out and evaluating investigations;
- To ensure that all pupils are appropriately challenged to make good progress in science.

### **Teaching and Learning**

Teachers plan and deliver high-quality and engaging science lessons incorporating a range of teaching and learning styles.

Teachers will provide opportunities for pupils to:

- Learn about science, where possible, through first-hand practical experiences;
- Develop their research skills through the appropriate use of secondary sources;
- Work collaboratively in pairs, groups and/or individually;
- Plan and carry out investigations with an increasing systematic approach as they progress through the school;
- Develop their questioning, predicting, observing, measuring and interpreting skills;
- Record their work in a variety of ways e.g. writing, diagrams, graphs, tables;
- Read and spell scientific vocabulary appropriate for their age.
- Be motivated and inspired by engaging and interactive science displays which include key vocabulary and relevant questions.
- Learn about science using the outdoor learning environment.

### **Differentiation and Additional Educational Needs**

The study of science will be planned to give pupils a suitable range of differentiated activities appropriate to their age and abilities. Tasks will be set which challenge all pupils, including the more able. For pupils with SEN the task will be adjusted or pupils may be given extra support. The grouping of pupils for practical activities will take account of their strengths and weaknesses and ensure that all take an active part in the task and gain in confidence.

## **Breadth and Balance**

### **Variety.**

Pupils will be involved in a variety of structured activities and in more open-ended investigative work:

- activities to develop good observational skills
- practical activities using measuring instruments which develop pupils' ability to read scales accurately
- structured activities to develop understanding of a scientific concept
- open ended investigations.

On some occasions pupils will carry out the whole investigative process themselves or in small groups.

### **Relevance**

Wherever possible science work will be related to the real world and everyday examples will be used.

### **Cross-curricular skills and links**

Science pervades every aspect of our lives and we will relate it to all areas of the curriculum. We will also ensure that pupils realise the positive contribution of both men and women to science and the contribution from those of other cultures. We will not only emphasise the positive effects of science on the world but also include problems, which some human activities can produce.

### **Continuity and Progression**

Foundation Stage pupils investigate science as part of Understanding of the World- natural world. Children are encouraged to investigate through practical experience; teachers guide the children and plan opportunities that allow the children to experience and learn whilst experimenting for themselves. By careful planning, pupils' scientific skills and knowledge gained at Key Stage 1 will be consolidated and developed during Key Stage 2.

Pupils in Key Stage 1 will be introduced to science through focused observations and explorations of the world around them. These will be further developed through supportive investigations into more independent work at Key Stage 2. The knowledge and content prescribed in the National Curriculum will be introduced throughout both key stages in a progressive and coherent way.

Across the school scientific investigations will include the following range of approaches;

- fair testing
- observations over time
- pattern seeking
- identifying and classifying
- research

### **Equality of Opportunity**

All children have equal access to the science curriculum and its associated practical activities. The SLT, Class Teachers and TAs at Barrington Primary School are responsible for ensuring that all children, irrespective of gender, learning ability, physical disability, ethnicity and social circumstances, have access to the whole curriculum and make the greatest possible progress. Where appropriate, work will be adapted to meet pupils' needs and, if appropriate, extra support given. More able pupils will be given suitably challenging activities. Gender and cultural differences will be reflected positively in the teaching materials used.

All children have equal access to the Science Curriculum, its teaching and learning, throughout any one year. This is being monitored by analysing pupil performance throughout the school to ensure that there is no disparity between groups.

### **Health and safety**

Pupils will be taught to use scientific equipment safely when using it during practical activities. Class Teachers and Teaching Assistants will check equipment regularly and report any damage, taking defective equipment out of action. A simple risk assessment will be carried out for all practical activities any perceived hazards will be reported to the Head who will determine the appropriateness of said activity.

### **Assessment for Learning, recording and reporting**

In EYFS the children will be assessed as on track/ not on track at the assessment check points for Knowledge and Understanding (the natural world).

Throughout Key Stages 1 and 2 school teachers will assess whether children are working at/above or below the expected level for their age based on their understanding and application of the content of the National Curriculum 2014. Assessments will be made against the year group objectives using the children's work in lessons. Progress and attainment is reported to parents through parents' evenings and end of year reports.

### **Marking for Improvement**

Much of the work done in science lessons is of a practical or oral nature and, as such, recording will take many varied forms thus making marking different. It is, however, important that written work is marked regularly and clearly, as an aid to progression and to celebrate achievement. When appropriate, pupils may be asked to self-assess or peer assess their own or other's work. Marking for improvement comments in a child's book must be relevant to the learning objective to help children to better focus on future targets.

#### **Role of the subject Leader**

It is the responsibility of the science subject leader to monitor the standards of children's work and the quality of teaching in science. Planning and work book scrutiny as well as pupil voice questionnaires are carried out regularly by the science subject leader and feedback is given to teachers at an appropriate time. The science subject leader 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.

#### **Resourcing**

Specialist pieces of equipment and those posing a potential safety risk will be held centrally and staff access when required.