



### Science Intent

At Neville's Cross it is our intention in Science to develop in all young people a lifelong interest in the sciences. When planning for the science curriculum, we intend for children to have the opportunity, wherever possible, to learn through varied systematic investigations, leading to them being equipped for life to ask and answer scientific questions about the world around them. As children progress through the year groups, they build on their skills in working scientifically, as well as on their scientific knowledge, as they develop greater independence in planning and carrying out fair and comparative tests to answer a range of scientific questions. Regular open questioning and use of first hand experiences fosters curiosity in lessons and develops in our children and enquiring mind. Science offers children opportunities to see that all learning begins with 'I don't know' and experience of leading their own practical investigations gives them confidence in problem solving that they can apply across the curriculum.

### 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.

Teaching science enables 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.

At Neville's Cross Primary we want our children to display the characteristics of a scientist. We teach science so that our pupils:

- Think independently and raise questions about working scientifically and the knowledge and skills that it brings.
- Are confident and competent in the full range of practical skills, taking the initiative in, for example, planning and carrying out scientific investigations.
- Demonstrate excellent scientific knowledge and understanding in written and verbal explanations, solving challenging problems and reporting scientific findings.
- Show high levels of originality, imagination or innovation in the application of skills. Undertake practical work in a variety of contexts, including fieldwork.
- Passionate about science and its application in past, present and future technologies.



### Overview of the Science curriculum

Within school, all children are entitled to a broad and balanced curriculum delivered in interesting and innovative ways. Within Science, children will gain a range of skills, concepts and attitudes. A more detailed insight into our Science curriculum is presented within this policy which demonstrates clear progression across the school.

The features that come before the National Curriculum in EYFS for Science are found in the 'Understanding The world' section of the Development matters framework.

The programmes of study for science are set out year-by-year for Key Stages 1 and 2 and include the following sections:

### **Scientific knowledge and conceptual understanding**

The programmes of study describe a sequence of knowledge and concepts. While it is important that pupils make progress, it is also vitally important that they develop secure understanding of each key block of knowledge and concepts in order to progress to the next stage.

Pupils should be able to describe associated processes and key characteristics in common language, but they should also be familiar with, and use, technical terminology accurately and precisely. They should build up an extended specialist vocabulary. They should also apply their mathematical knowledge to their understanding of science, including collecting, presenting and analysing data.

### **The nature, processes and methods of science**

'Working scientifically' specifies the understanding of the nature, processes and methods of science for each year group. It should not be taught as a separate strand.

### **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.

### The Foundation Stage

Science in Reception is an integral part of the EYFS ethos, often covered during project themed work throughout the whole year. The Early Years Foundation Stage Development Matters framework underpins the curriculum planning for children aged birth to five. Science makes a significant contribution to developing a child's knowledge and understanding particularly in the world section.

### Content Overview

Science is delivered using a 2 year rolling programme to accommodate mixed age classes. The attached progression document maps out which units are covered in each cycle to ensure clear and consistent progression.

### Equal Opportunities

All pupils, regardless of ability, ethnicity, gender, sexual orientation, disability, age or social circumstances have equal opportunities to take part in a variety of Science activities whilst at school. This will involve teachers stating within the MTP and STP any difficulties that a child may face, as well as how they will prevent these. All learning opportunities will be matched to suit the needs of the child and take into account their Individual Education Plan, where necessary.



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. We achieve this in a variety of ways:

- setting tasks which are open-ended and can have a variety of responses;
- setting tasks of increasing difficulty (we do not expect all children to complete all tasks);
- providing resources of different complexity, matched to the ability of the child;
- using classroom assistants to support the work of individual children or groups of children;
- grouping children in mixed ability groups encouraging children to work together and peer mentor.

### SEND

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. 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.

### Monitoring of the Curriculum

The Science Coordinator will monitor planning and carry out a regular scrutiny of work produced by our children to ensure both coverage and progression are taking place across the school