



ENSTONE PRIMARY SCHOOL

SCIENCE POLICY

Definition:

Science is a way of working which allows children, through practical first hand experiences and secondary sources, to develop their knowledge and understanding of the world in which they live. These experiences should allow them to observe, investigate, make sense of and communicate their findings.

Aims:

The purpose of teaching science in our school is to ensure that all pupils:

- develop **scientific knowledge and conceptual understanding** through the specific disciplines of 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.

Curriculum Coverage:

Pupils in Reception will be taught according to the guidance and requirements of the Early Years Foundation Stage Curriculum. As pupils in a mixed age and key stage class they will also encounter some of the content from the Key Stage 1 science curriculum as part of their umbrella topic each term. Teaching and learning in science will be adapted to suit the needs of these pupils, at all times making reference to the EYFS curriculum and early learning goals.

At Key Stages 1 and 2 pupils will be taught according to the programmes of study and attainment targets for the National Curriculum in England, 2014, developing and securing skills in the following areas:

- Scientific knowledge and conceptual understanding
- The nature, processes and methods of science
- Spoken language
- Working scientifically

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 will be encouraged to be curious and ask questions about what they notice. They will be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information. They will begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways. Most of the

learning about science will be done through the use of first-hand practical experiences, but there will also be some use of appropriate secondary sources, such as books, photographs and videos.

During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- asking simple questions and recognising that they can be answered in different ways
- observing closely, using simple equipment
- performing simple tests
- identifying and classifying
- using their observations and ideas to suggest answers to questions
- gathering and recording data to help in answering questions.

Pupils will learn to 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 principal focus of science teaching in lower key stage 2 is to enable pupils to broaden their scientific view of the world around them. They will 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. They will ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information. They will draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out.

During years 3 and 4, pupils will be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- asking relevant questions and using different types of scientific enquiries to answer them
- setting up simple practical enquiries, comparative and fair tests
- making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
- gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
- recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
- reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions

- identifying differences, similarities or changes related to simple scientific ideas and processes
- using straightforward scientific evidence to answer questions or to support their findings.

Pupils will learn to read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge.

Upper Key Stage 2

The principal focus of science teaching in upper key stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They will do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. At upper key stage 2, they will encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They will also begin to recognise that scientific ideas change and develop over time. They will select the most appropriate ways to answer science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information. Pupils will 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.

During years 5 and 6, pupils will be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
- taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
- recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
- using test results to make predictions to set up further comparative and fair tests
- reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations
- identifying scientific evidence that has been used to support or refute ideas or arguments.

Pupils will learn to read, spell and pronounce scientific vocabulary correctly.

Approach to teaching and learning:

- **Science Scheme of Work** Science lessons are planned and delivered using the “White Rose Science” scheme of work.
- **Assessments** in science are made through analysis of elicitation tasks conducted at the beginning and end of each new unit. Teachers will also make careful observations of children during practical

and oral activities. Assessment evidence is used to inform future planning for individuals and groups.

- Science may make a significant contribution to the development of skills in **language, literacy** and **numeracy**. Pupils will be given opportunities to use **information and communication technology** both to support their learning in science and to present or analyse their findings.
- **Inclusion:** in consideration of pupils' varied life experiences and needs we will ensure that the science curriculum is available to all pupils, with equal and appropriate access regardless of sex, race, faith or ability.
- **Safety:** It is important that children are taught the importance of safety when undertaking experiments and investigations. All due care will be observed when allowing children to use a range of materials and equipment relevant for scientific enquiries.

Date Adopted: June 2024

Review Date: June 2027

Signature of Chair of Governors:



Signature of Headteacher:



