

Science Policy

Greenvale Primary School

Aims

Science at Greenvale is exciting, engaging and enjoyable. 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.

The objectives of teaching science are to enable children to:

- Ask and answer scientific questions.
- Plan and carry out scientific investigations, using equipment 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.

Teaching and learning style

We use a variety of teaching and learning styles in science lessons. Our principal aim is to develop children's knowledge, skills and understanding. Sometimes we do this through whole-class teaching, while at other times we engage the children in an enquiry-based research activity. We encourage the children to ask, as well as answer, scientific questions. They have the opportunity to use a variety of data, such as statistics, graphs, pictures, and photographs. They use ICT in science lessons because it enhances their learning. They take part in role-play and discussions, and they present reports to the rest of the class. They engage in a wide variety of problem-solving activities. Wherever possible, we involve the pupils in real scientific activities, for example, investigating an environmental problem, or carrying out a practical experiment and analysing the results.



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
- When appropriate grouping children by ability/mixed ability
- Providing resources of different complexity, matched to the ability of the child.
- Using classroom assistants to support the work of individual children or groups

Science curriculum planning

At Greenvale we cover the National Curriculum for Science. Learning is set in context through our thematic approach and topic teaching. Class teachers plan their Science lessons, broadly following the activities set out in their unit plans, but adapting as needed to ensure all children achieve the objectives of the National Curriculum.

The long-term planning 'Road Maps' broadly map out the scientific topics studied in each term throughout the school. Children study science as a discrete subject within their topics.

Our medium-term plans, primarily employ topic planning as a means of delivering the curriculum and give details of each unit of work for each term.

Class Teachers are responsible for their own short-term planning, adapting the medium plans to meet the needs of their particular class.

We ensure that there are opportunities for children of all abilities to develop their skills, knowledge and understanding in each unit, and we also build progression into the science scheme of work, so that the children are increasingly challenged as they move up through the school.

The Foundation Stage

We teach science in the reception class as an integral part of the topic work covered during the year and provide opportunities for explorative play through continuous provision in the learning environment. As the Reception class is part of the Early Years Foundation Stage we relate the scientific aspects of the children's work to the objectives set out in the EYFS curriculum. Science makes a significant contribution to developing a



child's knowledge and understanding of the world, in particular the natural world, for example through investigating what floats and what sinks when placed in water.

The contribution of science to other subject areas through a topic-based approach to teaching.

English

Science contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. Some of the texts that the children study in the Literacy lessons are of a scientific nature. 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. When The children use weights and measures, they are learning to use and apply number. Through working on investigations they learn to estimate and predict. They develop accuracy in their observation and recording of events. Many of their answers and conclusions include numbers.

Personal, social and health education (PHSE) and citizenship

Science makes a significant contribution to the teaching of PSHE and citizenship. This is mainly in two areas. Firstly, the subject matter lends itself to raising matters of citizenship and social welfare. For example, children study the way people recycle material and how environments are changed for better or worse. Secondly, the subject gives children numerous opportunities to debate and discuss. They can organise campaigns on matters of concern to them, such as water poverty and deforestation. Science thus 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 smoking, and the moral questions involved in this issue. We give them the chance to reflect on 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.

Art

In Science observation skills are used to draw, paint and describe nature. Some art classes will involve studying living things and the effect of light and shadow.

Computing

Computing enhances the teaching of science in our school. Children use computing skills to record, present and interpret data, to review, modify and evaluate their work, and to improve its presentation. Children learn how to find, select, and analyse information on the internet and on other media.

Science and inclusion

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. We strive to meet the needs of those pupils with special educational needs, those with disabilities, those with special gifts and talents, and those learning English as an additional language, and we take all reasonable steps to achieve this.

When progress falls significantly outside the expected range, the child may have special educational needs. Our assessment process looks at a range of factors – classroom organisation, teaching materials, teaching style, differentiation – so that we can take some additional or different action to enable the child to learn more effectively. Assessment and tracking 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.

We enable all pupils to have access to the full range of activities involved in learning science. Where children are to participate in activities outside the classroom (a trip to a science museum, for example) we carry out a risk assessment prior to the activity, to ensure that the activity is safe and appropriate for all pupils.



Assessment for learning

Teachers will assess children's work in science by making informal judgements during lessons, these are recorded on lesson-by-lesson assessment summary sheets which are used to inform future lessons. Verbal feedback is given to the child to help guide his/her progress. Children are also encouraged to make judgments about how they can improve their own work.

At certain points in their topics teachers will assess pupils' development in key Science Skills across a milestone (Year group pairs) according to our skill tracking sheets.

Resources

We have sufficient resources for all science teaching units in the school. We keep core resources in a central store and topic-based resources in the class.

Monitoring and review

It is the responsibility of the subject leader to monitor the standards of children's work and the quality of teaching in science. The subject leader is also responsible for supporting colleagues in their teaching, for being informed about current developments in the subject, and for providing a strategic lead and direction for science in the school.

This policy will be reviewed every two years.

Signed: Michelle Neri

Date reviewed: February 2022

Next review: February 2024

