

Peters Hill Primary School

Science Policy



Introduction

This policy outlines the teaching, organisation and management of science taught at Peters Hill Primary School. The school's policy for science is based on the primary curriculum programmes of study for Key Stages 1 and 2 (following updates May 2015). The implementation of this policy is the responsibility of all teaching staff.

Subject intent

At Peters Hill, we believe that the most successful and progressive science teaching, fosters and develops pupils' curiosity within the subject, whilst helping them to fulfil their true potential. Our subject intent is for children to develop confidence within science: expanding their scientific knowledge, vocabulary and understanding, developing an enquiring mind and desire to investigate and research scientific areas of interest both practically and independently; to be able to work scientifically in order to investigate using scientific principles.

The National Curriculum introduced in 2014 states why we teach science in schools:

'A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics...Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena.'

Approach

Through high-quality science teaching, we aim to help our pupils understand how major scientific ideas have played a vital role in society. We aim to successfully prepare our pupils for life in an increasingly scientific and technological world.

We aim to do this by:

- Delivering high quality, interesting and engaging science lessons.
- Using scientific contexts to develop and consolidate cross curricular skills in English, Maths, Geography and ICT.
- Teaching science in a global and historical context; including the contributions of significant scientists from a range of cultures.
- Developing and extending pupils' scientific knowledge and understanding by teaching a series of knowledge-based lessons in a variety of ways, particularly including the use of practical investigative work, research, discussion, analysis and presentation.
- Developing pupils' ability to work scientifically by teaching a progression of investigative skills - enabling children to independently and confidently test concepts.
- Developing pupils' scientific vocabulary and the ability to articulate scientific concepts clearly and precisely.
- Developing pupils' ability to select methods of recording observations in a variety of ways, learning to identify the most effective method.
- Encouraging children to openly share their ideas and to work collaboratively with their peers.

- Ensuring that all pupils are appropriately challenged to make significant progress within science.
- Building in a knowledge and understanding of safer working practices.
- Ensuring that children learn to respect their environments – both immediate and wider, including those of plants and other animals.

Teaching and Learning

At Peters Hill, teachers plan and deliver high-quality and engaging science lessons incorporating a range of teaching and learning styles. Lessons build on previous knowledge, with teachers ensuring they provide opportunities for pupils to:

- Learn about science, wherever possible, through first-hand practical experiences.
- Develop their research skills through the appropriate use of secondary sources, including the use of technology.
- Work in a range of manners - collaboratively in pairs, groups and/or individually.
- Plan and carry out investigations with an increasing systematic approach as they progress through the school, utilising the skills specified within the school's curriculum pathway.
- Develop their questioning, predicting, observing, measuring and interpreting skills.
- Understand the relevance and develop the links between Maths and Science.
- Record their work in a variety of ways e.g: writing, diagrams, graphs, tables, presentations.
- Understand, recall, read and spell, specific scientific vocabulary appropriate for their age. These are taken from the set of whole school science vocabulary lists -shared within the science section of the shared area.
- Learn about science using the outdoor learning environment, whenever appropriate.

Planning

- The **National Curriculum framework** is the basis of our Science coverage at Peters Hill. This document states clearly the science subject areas that need to be covered throughout the primary years, as well as specifying during which school years.
- Science in the Early Years Foundation Stage is planned using the **Early Years Curriculum** - 'Understanding of the World'.
- Key Stage 1 and 2 teachers plan science lessons using a thematic approach. These themes are systematically presented for each year group initially in the science **Topic Overview documents**.
- The **Science Curriculum Pathways** document is then also available for each year group to use. This document specifies in detail, the learning outcomes each year group should cover throughout the year - sectioned into the science strands of biology, physics, chemistry and working scientifically. It also enables each year group to identify subject areas previously taught, so retrieval practise is focused appropriately, and enables staff to be aware of how their teaching will be built upon by following year groups.
- In addition, detailed **Knowledge Organisers** are available, covering all themes for each year group, sectioned into both year group and strand documents. These show in detail the learning outcomes, subject specific vocabulary and specific scientific knowledge that should be covered within each topic.
- **The 'Rising Stars' Science scheme** is available for KS 1 and KS2 teachers to aid their planning where required. Other 'Ginn' resources are also available in school for some themes. Teachers should plan and resource lessons using these, and any other appropriate documents as necessary.
- Peters Hill is now a **member of the ASE (association of science education)** which provides support and opportunities for professional development and planning within the subject.
- In addition, **Science working walls** have also been introduced throughout school – an opportunity to display scientific vocabulary, current class work, analytical questions, topic books as well as any other appropriate topic stimuli to support the teaching and learning of science.

Inclusion

- At Peters Hill, teachers establish an inclusive approach within their science planning and teaching; ensuring that pupils of ***all abilities and backgrounds*** have an equal opportunity to make significant progress within the subject, encouraging curiosity and fascination amongst our scientists of the future.

Assessment and reporting

- Teachers create learning log activity prompts for the children, enabling them to demonstrate their existing knowledge before beginning work on a particular topic, and then again afterwards, in order to demonstrate the depth of their understanding and knowledge. The children are given some freedom with the presentation of their work, in order to cater for all learning styles, then teachers assess this final piece in order to measure the learning within the unit.
- Teachers can use this summative assessment to inform their class teacher mark-books at the end of each topic, recording levels from 1 – 5 depending on the depth of each child's knowledge.
- In EYFS, teachers assess science against the 'Development Matters' statements in the 'Understanding of the world' area of the Early Years Curriculum. These statements commence from birth, right through to the Early Learning Goals at the end of Reception.
- For formative assessment, teachers use effective Assessment for Learning (AFL) strategies, which are also used to inform their planning and teaching.
- In addition, teachers regularly provide quality feedback to pupils when working (verbal or written), which clearly identifies areas in which they can improve.
- Progress and targets are shared with parents and carers through discussion at Parents Evenings in both the autumn and spring terms. The summer term end of year report gives parents a comprehensive overview of their child's achievement in Science at the end of the academic year.

Monitoring

- Planning and book monitoring is carried out by the science subject leaders/SLT - feedback is then given to teachers at an appropriate time.
- Displays/visual representations of scientific vocabulary within classrooms are monitored regularly during learning walks.
- Lesson observations monitor and review the teaching and learning of science.
- Subject data is regularly analysed and reviewed.
- Pupil Voice allows pupils the opportunity to share their learning and enjoyment of the subject.

Health and safety

- Teachers must ensure they plan safe activities for science, completing risk assessments if at all necessary.
- Teachers and teaching assistants need to be aware of health and safety procedures when using equipment/food in science lessons.
- Pupils must be aware of the need for personal safety, as well as the safety of others throughout science lessons.

Resources

- Science resources are currently stored in the large cupboards within the school library area, although some subject specific resources have been relocated to be stored in appropriate year group boxes.
- An inventory of resources is kept on the shared area and is updated as and when new resources are ordered.
- The subject leaders must be informed of any changes regarding science resources i.e; missing or broken resources and/or when new or replacement resources are required.