

Shipbourne School Science Policy

Science teaches an understanding of and develops a sense of excitement and curiosity about natural phenomena. It aims to stimulate children to find out why things happen in the way they do and encourages them to understand how science can be used to explain what is occurring, predict how things behave and analyse causes. It teaches children to work scientifically to stimulate creative thought and understand the nature, processes and methods of science. 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.

Whilst the National Curriculum provides a clear framework for science, the school is also aware of the need for flexibility and creativity in teaching and learning to allow accessibility for all in our mixed age teaching groups, where two or three-year rolling programmes are in place. Use of Cornerstones Education Learning Platform and progression plans support the teaching of skills and knowledge in all topics.

Purpose of Study

It is recognised that a high quality science education provides the foundations for understanding the world through the disciplines of biology, chemistry and physics. Science changes lives, and is vital to the future prosperity of the world. Building key foundational knowledge and concepts will encourage pupils to recognise the importance of rational thought, whilst developing a sense of excitement and curiosity about natural phenomena. Pupils are to be encouraged to understand how key knowledge and concepts can be used to explain what is occurring, predict how things will behave and analyse causes.

The aim of teaching science is to develop:

- a positive attitude towards science and a greater curiosity;
- an understanding of science through a process of enquiry and investigation;
- confidence and competence in scientific knowledge, concepts and skills;
- an ability to reason, predict, think logically and to work systematically and accurately;
- an ability to communicate scientifically, asking and answering questions about the world around them;
- the initiative to work both independently and in co-operation with others;
- the ability and understanding to use and apply science across the curriculum and in real life;
- higher aspirations for the future;
- scientific knowledge and conceptual understanding in the following areas:
 - Biology: including plants, animals, habitats, evolution and inheritance.
 - Chemistry: including everyday materials and their uses, rocks, states of matter and the properties and changes of materials.
 - Physics: including seasonal changes, light, forces, magnets, sound, electricity and Earth and space.

Teaching and Learning Style

Our principal aim is to develop children's knowledge, skills, independence and understanding.

This is achieved through:

- whole-class teaching;

- enquiry-based research activities;
- asking and answering scientific questions;
- collecting, analysing and presenting a variety of data;
- learning based outside within the school grounds and offsite during Forest School and educational visits;
- role-play, discussions and presentations of their findings to develop their use of scientific vocabulary and to articulate scientific concepts clearly.

Scientific skills and knowledge are revisited each lesson based on prior learning and through knowledge organisers. These knowledge organisers will be used to support the development of vocabulary and key concepts. Revision lessons also take place at the start of each new topic to revisit concepts from previous years. We recognise that, in all classes, children have a wide range of scientific abilities, and we ensure that we provide suitable learning opportunities for children by providing support and challenge for all.

Planning, the School Curriculum and Assessment

Foundation Stage:

The EYFS sets out the learning objective for the seven areas of learning, with science discretely embedded in the learning experience when and where appropriate:

- Physical Development
- Understanding of the World: via outdoor learning and Forest School
- Communication and Language
- Personal, Social and Emotional Development
- Mathematics
- Literacy

The EYFS aims to equip the children with knowledge and skills in preparation for the National Curriculum at Key Stage 1.

Key Stage 1 and 2:

The National Curriculum Statutory Requirements are accessed through the Cornerstones Education Learning platform. This scheme clearly indicates the aspects of knowledge that will be developed, as well as the progression in key science concepts. The programmes of study encompass a sequence of knowledge and concepts, appropriate to the Key Stage, developing a secure understanding in readiness for progression to the next stage. Pupils should be able to describe associated processes and key characteristics in common language, and also be familiar with, and use, technical terminology accurately and precisely, appropriate to the Key Stage. They should progressively build up an extended specialist vocabulary.

Hampton class follow a two-year rolling programme and Fairlawne class follow a three-year rolling programme to ensure full coverage of topics and skills. This is linked to other areas of the curriculum where possible to give children a more rounded view of science and its link to our world.

A further progression plan supports age-appropriate learning of scientific skills in these mixed-age classes.

Areas of the science curriculum involving human reproduction and changes experienced in puberty are also covered during RSE and PSHE sessions.

Assessment

Assessment is undertaken termly and will be:

- formative and summative;
- used by the teacher to inform future planning;
- promote continuity and progression across the school;
- form a basis for reporting to parents at the end of each academic year;
- based on observation, participation and writing outcomes.

This summary includes judgements on a child's knowledge and understanding of science and their practical use of scientific methods, processes and skills. Assessments will be recorded of Cornerstones Education Learning Platform.

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 hard to meet the needs of those pupils with special educational needs, those with disabilities, those who require extra challenge, and those learning English as an additional language. This is in line with the relevant whole-school policies.

Health and Safety

Pupils will be taught to use scientific equipment safely during practical activities. Class Teachers, Teaching Assistants and the Subject Leader will check equipment regularly and report any damage; removing defective equipment and replacing as appropriate.

The School Policy for Health and Safety will be integrated into science teaching.

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. The subject leader has allocated time for fulfilling the vital task of reviewing samples of children's work, and visiting classes to observe science teaching.

This policy will be reviewed at least every three years.