

PRINCEFIELD FIRST SCHOOL

Science Policy

At Princefield First School we believe the study of science provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. 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. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave and analyse causes.

Intent

The National Curriculum for Science aims 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.

The Princefield vision for teaching and learning in science is

- Teachers are knowledgeable and creative in their approach to teaching science
- Children develop an enquiring mind, they are confident to ask questions and are enthusiastic to learn
- Learning is purposeful, relevant to the world around them and encourages children to make cross curriculum connections.

Science and Curriculum Planning

Princefield has a two year rolling program to accommodate mixed age classes in KS1 and KS2. The long-term plan for each key stage maps the scientific topics studied in each term during the key stage and is available on line along with the objectives covered in each topic. Where possible we combine science topics with work in other subject areas eg Maths, English, ICT and PSHE. Where this is not possible, science is taught as a discrete subject. Medium term plans show the National Curriculum objectives to be covered in each topic for Knowledge and Understanding and Working Scientifically.

Foundation Stage

We teach science in the Early Years as an integral part of topic work covered in Nursery and Reception. At this stage in a child's education, Science is taught through the Understanding of the World strand of the Early Years Foundation Stage curriculum. This makes a significant contribution to developing a child's awareness and understanding of the world around them. Also, the foundations for future scientific study are laid through topics such as Seasons and Changes, Water, On the Farm and mini topics such as The Environment (Caring for Our World), Health and Self Care and Life Cycles. The use of outdoor facilities, including the school grounds and woodland area, support the delivery of this strand.

Implementation

Teaching and Learning Styles

We use a variety of teaching and learning styles in science lessons where our principal aim is to develop children's knowledge, concepts and skills. Throughout the curriculum at Princefield we use 'Learning Stars' to encourage pupils to become independent learners and our approach to 'Visible Learning' ensures pupils know at what stage they are at in their learning and the next steps to take to further their knowledge and understanding. We also incorporate 'Active Learning' techniques in our lessons to stimulate learning and promote physical activity.

We encourage children to ask, as well as answer, scientific questions. They have the opportunity to use secondary sources, such as statistics, graphs, pictures, books, videos and photographs.

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 to stretch the more able
- grouping children by ability and setting tasks accordingly
- grouping children by mixed ability to encourage peer support
- providing resources of different complexity, matched to the ability of each child
- using classroom assistants to support the work of individuals or groups of children.

Resources and Safety

EYFS, KS1 and KS2 mostly have their own resources for the teaching of science covered in their key stage. A central store for shared, large items is located at the rear of the ICT suite. Equipment and resources are regularly checked and updated by the science coordinator. In addition, the school's ICT suite and iPads are regularly used for research, presentations and recording.

Impact

Each science topic taught in KS1 and KS2 is fronted by a topic page which includes the objectives for the Knowledge and Understanding objectives to be covered in the topic. Both pupils and teachers informally assess and record progress through each topic by using smiley faces against the objectives. In addition, in KS2, teachers also use end of topic assessments to inform progress in Knowledge and Understanding. Coverage and progress in Scientific Enquiry is recorded on a skills grid kept in the front of each child's book and is regularly updated by the teacher and shared with pupils.

Teachers make an assessment of the children's work in science at the end of KS1. The assessment results are reported to parents.

Monitoring and Review

Monitoring the curriculum, the standard of children's work and the quality of teaching in science is facilitated through the Science Co-ordinator.

This is done through book trawls, moderation, staff and pupil questionnaires and regular staff meetings to inform staff about current developments in the subject. The subject leader gives the head teacher an annual report evaluating strengths and weaknesses in science, and indicates areas for further improvement.

This policy will be reviewed when necessary