

Overdale Infant School

Science Policy

Rationale

A thorough and good quality science education provides the basis for understanding the world around us. It aims to encourage a child's curiosity in finding out why things happen in the way that they do as well as making them excited about natural phenomena. It teaches methods of enquiry and investigation to stimulate creative thought. Children learn to make observations, ask scientific questions and begin to appreciate the way in which science will help to make sense of the world in which we live.

Purpose

The Science Curriculum offers opportunities to:

- Stimulate children's natural curiosity and understanding of their world through practical activities.
- Develop skills in observation, investigation and to record their findings in a variety of ways
- Develop language and communication skills which will enable them to use scientific vocabulary when talking about scientific concepts
- Develop skills in questioning, collecting evidence and solving problems to draw conclusions from their findings
- Develop skills and confidence in using a range of equipment including ICT to support their investigations and enquiry
- Develop a respect for the environment, living things and for their own health and safety
- Work with others, listening to their ideas and treating these with respect

The Science policy is designed to aid the monitoring of teaching and learning of Science in the school to ensure all children have access to a high-quality science education.

Expectations

Teaching and Learning

A variety of teaching and learning styles are used in science sessions. Whole-class teaching is used as well as enquiry-based investigative activities in order for children to develop a secure understanding of each key block of knowledge. Children will be encouraged to describe processes in common language as well as using technical vocabulary. Observation and explorative activities are also used through individual, paired or group work. Children will be given opportunities to answer questions by collecting, analysing and presenting data. Children are encouraged to ask, as well as answer, scientific questions. The focus is to be on using first hand practical experiences for learning but they will also access secondary sources such as photographs and ICT to enhance their learning. Children will use the local area to aid their understanding of scientific processes.

Differentiation

Children have a wide range of scientific abilities, and differentiation is used ensure that suitable learning opportunities are provided for all children by matching the challenge of the task to the ability of the child. This is achieved in a variety of ways:

- Using activities which are open-ended and can have a variety of responses;
- grouping children by ability in the room, and setting different activities for each ability group;
- providing resources of different complexity, matched to the ability of the child;

- the use of questioning as a tool to challenge children to explain their ideas and apply their knowledge.

Science Curriculum Planning

Science is a core subject in the National Curriculum. The school uses the National Curriculum for science as the basis of its curriculum planning. The scheme of work has been developed as part of a creative curriculum where all subjects are integrated through overall themes. This allows for joined up thinking and meaningful learning. Practical investigative learning is at the heart of this scheme and the outdoor space and the local environment are used in our fieldwork. Curriculum planning in science takes place in three phases: long-term, medium-term and short-term. The long-term plan maps the scientific topics studied in each term for each year group. Medium term plans show the specific objectives to be covered, and short term weekly plans detail specific activities. These plans list the specific learning objectives and expected outcomes of each lesson. In some cases, we combine the scientific study with work in other subject areas, at other times the children study science as a discrete subject. The topics in science are planned so that they build on prior learning. Opportunities are provided for children of all abilities to develop their skills and knowledge in each unit and progression is being built into the science scheme of work, so that the children are increasingly challenged as they move up through the school.

Reception

We teach science in Reception classes as an integral part of the topic work covered during the year. The EYFS guidance is used as the basis for the curriculum planning and work towards achieving the Early Learning Goals (ELGs) which underpin the curriculum planning for children aged three to five. The Science makes a significant contribution to developing a child's Knowledge and Understanding of the World through exploration and investigation.

Science links to other subjects

Science draws on skills and knowledge from other subject areas, including:

- Literacy – promoting speaking, listening, reading, and writing. Scientific texts are used to support literacy learning, as well as practising literacy skills in science activities.
- Numeracy – through measuring, using and applying number skills, estimating, predicting, problem solving in real life problems.
- PSHE – through developing awareness for their personal health and safety and caring for the environment.
- R.E & Spiritual, moral, social and cultural development – through finding answers to life questions, respecting living things, developing a sense of awe and wonder in the natural world, caring environmental issues and considering why people are different.
- ICT – supports finding information and displaying findings through graphs etc.
- Other areas where links occur are Art, History, and P.E.

Learning Science provides an important context for the development of children's key skills:

- Communication
- Problem solving
- Thinking
- Reasoning
- Enquiry
- Creativity
- Information processing

Assessment

Assessment is used to inform next steps in learning. Assessment is done through

- observations
- discussions

- scrutiny of work
- questioning

Both formative and summative assessment takes place. Children receive verbal and written feedback to help guide their progress. Lesson evaluations support teachers in planning for progression. At the end of a unit of work assessments are made of the children's understanding and this is used to inform reports written for parents, as well for planning next steps.

Guidelines

Safeguarding

We will:

- Protect children from maltreatment.
- Prevent impairment of children's health or development.
- Ensure that children are growing up in circumstances consistent with the provision of safe and effective care.

Equality

All children will have access to the same opportunities, irrespective of gender, age, race or ability in the development of their Science curriculum. They will have equal access to resources.

Prevent Duty

To fulfil the Prevent Duty we ensure we focus on children's personal, social and emotional development, ensuring children learn from right and wrong, mix and share with other children, value other's views, know about similarities and differences between themselves and others, and challenge negative attitudes and stereotypes.