



ALLENDALE PRIMARY SCHOOL

SCIENCE POLICY

Aims and Objectives

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 how science will affect their future on a personal, national and global level.

The aims of science are to enable children to:

- ask and answer specific scientific questions;
- plan and carry out scientific investigations, using equipment, including computers correctly;
- develop pupil's skills of predicting, hypothesising, designing and planning, observing and communicating, and encourage them to apply these in everyday life;
- learn to record findings from experiments/investigations etc... in various ways through graphs, pictures, tables, data analysis;
- to read, compare and interpret findings from experiments/investigations
- know and understand the life processes of living things;
- know and understand the physical processes of materials, electricity, light, sound and natural forces;
- to encourage safe and careful practice in practical work;
- to provide work which is relevant to all children regardless of ability, gender or ethnic groups;
- To foster a sense of wonder about natural phenomena and for children to recognise the importance of science in everyday life.

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 in small groups or as individuals. We encourage the children to ask, as well as answer, scientific questions.

Children have the opportunity to use a variety of data, graphs, pictures and photographs. They use ICT in science lessons where it enhances their learning. Children 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 children in 'real' scientific activities, for example, researching using the local environment i.e. the wildlife garden and the school environment or carrying out practical experiments, representing and then analysing the results.

Science teaching in the Early Years Understanding of the World encourages children to ask questions, look closely, suggest explanations and investigate the natural and man-made worlds. It provides a foundation and links with Science teaching in Key Stage One.

Our science lessons are well planned with clear objectives and are relevant and motivating, with clear skills and knowledge progression. We ensure that we provide suitable learning opportunities for all regardless of gender, class, aptitude or disability. We achieve this by providing activities in which all pupils can take part and differentiate by outcome, by task, by support or by resource so that all pupils can achieve success.

Pupils are given the opportunity to develop their interests, co-operate and communicate information, solve problems and demonstrate responsible attitudes towards safety. We also encourage them to consider the practical applications of science in everyday life.

Pupils will develop the following skills:

- making and testing hypotheses
- designing experiments and carrying out investigations
- drawing inferences from evidence
- making and recording observations
- classifying
- communicating information
- identifying patterns
- measuring systematically

Science Curriculum Planning

The school uses the National Curriculum programmes of study, supported by a clear skills and knowledge progression. The teachers adapt these and incorporate them accordingly to fit in with cross-curricular topics, where appropriate.

Long term planning maps the scientific topics/objectives studied in each class, each term and year. As we have some mixed-age classes, our medium term planning takes account of this to ensure complete coverage of the National Curriculum without repeating topics. In some cases we combine scientific study with work in other subject areas.

We have planned the topics in science so that they build upon prior learning. We ensure that there are opportunities for children of all abilities to develop their skills and knowledge 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.

Our science curriculum goes beyond the breadth of the national curriculum because scientific learning is reinforced through well planned visits and visitors, whole school science curriculum days and outdoor learning.

Early Years

We teach science in the EY class as an integral part of the topic work covered during the year. We relate the scientific aspects of the children's work to the objectives set out in the Develop Matters guidance. Science makes a significant contribution to developing a child's knowledge and understanding of the world e.g. through investigating what floats and what sinks when placed under water.

The contribution of Science to teaching in other curriculum areas

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 children study in literacy are of a scientific nature. The children develop oral skills in science lessons through discussions (for example about the environment) 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. The children use weights and measures and learn to use and apply number. Through working on investigations they learn to estimate and predict and present data in a range of ways. They develop the skills of accurate observation and recording of events. They use numbers in many of their answers and conclusions.

Computing:

Children use ICT in science lessons where appropriate. They use it to support their work in science by learning how to find, select and analyse information on the internet. Children use ICT to record, present and interpret data.

Personal, Social and Health education (PSHE) and Citizenship:

Science makes a significant contribution to the teaching of PHSE. Firstly, the subject matter lends itself to raising matters of citizenship and social welfare. For example children look at the way people recycle materials and how environments are changed for the better or worse. Secondly, children benefit from the nature of the subject in that it gives them the opportunity to take part in debates and discussions. Children also learn about healthy eating, the effect this has on the human body and are given the opportunity to participate in activities that promote healthy lifestyles.

Spiritual, Moral, Social and Cultural Development:

Science teaching offers children many opportunities to examine some of the fundamental questions in life. Through many of the amazing processes that affect living things, children develop a sense of awe and wonder regarding the nature of our world. We give them a chance to reflect on the way people care for the planet and how science can contribute to how 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.

Science Week:

Each year the whole school participates in British Science Week. This week allows children to learn through cross-curricular scientific activities. The scientific focus alternates each year.

Teaching Science to Children with SEN

We teach science to all children, whatever their ability. Science forms part of the school curriculum policy to provide a broad and balanced education for all children. We provide learning opportunities that are matched to the needs of children with SEN.

Equal Opportunities

We provide equal access to Science for all our pupils. In particular we encourage girls to become as confident as boys in Science by ensuring our work has interest for them and they have equal opportunities to take part.

Assessment

Assessment in Science is ongoing and the children are assessed against the Key Skills for their year group. This informs teachers on the key skills that have been achieved and those that need to be revisited. It ensures clear progression through the school. We assess children's work in Science by making informal judgements as we observe them during lessons, question and annotate children's work. Teachers build up a good knowledge of children's scientific ability and understanding based on their assessments.

Recording Pupil's Progress

Teachers record individual children's science achievements via annotation in their books and on assessment trackers. This evidence becomes part of the annual report to parents and their achievements are reported to parents each and every year.

Classroom Management

Resources:

We have sufficient resources in the school for teaching science. We keep these in a central store. The library contains a good supply of science topic books and each class has computer software to support children's learning in science.

Safety:

Safety must always be an important consideration and practical activities demand special safety precautions. We are aware of the potential dangers of the tools children will be using and encourage them to be familiar with simple safety procedures. Children learn to be safe by

handling and using objects in a well-organised environment where the use of space is carefully managed. Some scientific activities require special safety considerations including:

- Tasting and smelling – apply the rule of ‘if in doubt do not touch, smell or taste anything, unless a teacher assures you that it is safe.’
- Handling hot things – Remind children that things that have been heated stay hot for some time. The children should see safety precautions in use e.g. oven gloves. Should a child get a burn, place the affected part under the cold tap immediately and seek advice from a first aider.
- Plants and animals – The regulations governing the use of plants and animals in schools will be followed. Hygiene will be encouraged with children washing hands after handling animals or plants. Children will learn that pets can bite, peck etc. Some plants can be poisonous, cause skin irritation and should not be eaten.
- Allergies and Skin conditions – Teachers should be aware of any allergies or skin reactions that children have. Some children are sensitive to soap or food additives.
- Tools – The correct use of tools should be encouraged and tools should be kept in good condition.
- Batteries and bulbs – Children should be made aware of the dangers of putting batteries in their mouths and should wash their hands after using them. Any leaking batteries should be disposed of immediately and they should never be cut open.
- Cooking – Children will learn simple hygiene rules.
- Thermometers – Mercury thermometers will not be used in the school.
- Balloons – If children are blowing up balloons they will use a pump and not their mouths.

Care for the environment

When working outside children will:

- Follow the country code
- Preserve natural habitats
- Feed and house animals correctly and return them to the place where they were found as soon as the study is over
- Not disturb birds nests or other animal homes
- Begin to realise that no environment is totally without life, however unattractive it may appear at first sight.
- Choose bird food with care

Role of the Science Coordinator

The Science Coordinator is responsible for:

- Implementation of the Science Policy across the age range, monitoring and reviewing as necessary.
- The management of resources, including requisition and organisation.
- Liaising with the Head Teacher and staff about future INSET needs of staff and the school.
- Attending relevant courses and directing colleagues towards courses as the need arises.

- Offering assistance and support to colleagues.
- Be involved in long term planning for the whole school