

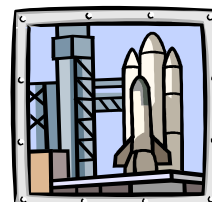
Leftwich Community Primary School

SCIENCE POLICY

This document is a statement of the aims, principals and strategies for the teaching and learning of Science at Leftwich Community Primary School.

What is Science?

Science is a body of knowledge built up through the testing and investigating of ideas. Science is also a methodology, a practical way of finding reliable answers to questions we may ask about the world around us. It stimulates creative thought where children will begin to appreciate the way Science will affect their future on a personal and global level.



Through Science in our school we aim to:

Encourage children to develop positive attitudes to Science, stimulating a natural sense of curiosity and a sense of awe about their world around them.

Encourage children to build up a body of scientific knowledge and understanding that will be used as a foundation for future enquiry. To understand the uses and implications of Science today and for the future.

Deliver the National Curriculum Science in ways which are imaginative, purposeful, accurate, skilful, well controlled and enjoyable.

Make links between Science and other subjects.

Develop the understanding and use of scientific language, recording and techniques.

Enable children to become effective communicators of scientific ideas, facts and data. They should be able to choose for themselves the most appropriate way do this.



Develop the skills needed for investigation – observing, measuring, predicting, hypothesising, experimenting, communicating and interpreting.





Organisation of Science

Science is a core subject in the National Curriculum, where the fundamental skills, knowledge and concepts are set out as programmes of study, including 'Working Scientifically', where children are taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content. See the National Curriculum for full programmes of study.

Principles of Teaching Science at EYFS

Reception classes are taught the required science elements of the Foundation Stage document through cross curricular themes which are initiated by the children themselves. Science work in the EYFS curriculum, is mainly in the area 'Understanding the World' and sub area 'The World'. All work is practical and monitored through observation and children will cover all EYFS objectives in covering their Science work. Children should know about similarities and differences in relation to places, objects, materials and living things. They should be able to talk about the features of their own immediate environment and how environments might vary from one another. They will make observations of animals and plants and explain why some things occur and talk about changes.

Principles of Teaching Science at Key Stage 1

The principal focus of teaching science in key stage 1 is to enable pupils to experience and observe phenomena, looking closely and the natural and human constructed world around them. Children should be encouraged to be curious and ask question about what they notice. They should use different types of scientific enquiry to answer questions. These should include observations over time, noticing patterns, grouping and classifying. They should use simple scientific language to communicate ideas, to a range of audiences in a variety of ways. We strive to make majority of the learning of science taught through first hand experiences.

Principles of Teaching Science at Lower Key Stage 2

The principal focus of teaching science in lower key stage 2 is to broaden pupils' scientific view of the world around them. This will be done through exploring and talking about and testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments. Children should develop their ideas about relationships, functions and interactions and be asking their own questions about what they observe. They should be making their own decisions about which types of scientific enquiry are the best ways to answer their questions. These should include observing changes over time, noticing patterns, grouping and classifying, carrying out simple comparative and fair tests. Children should be encouraged to draw simple conclusions and use some scientific language to talk about and then write about what they have found out.

Principles of Teaching Science at Upper Key Stage 2

The principal focus of teaching science in upper key stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. This will be done through exploring and talking about their ideas, asking their own questions about scientific phenomena and analysing relationships, functions and interactions in a more systematic way. Children will encounter more abstract ideas and begin to recognise how these ideas will help them to understand and predict how the world around them operates. They should also recognise that scientific ideas change and develop over time. Children should now be selecting the most appropriate form of scientific enquiry to answer questions. These will include observing changes over periods of time, noticing patterns, grouping and classifying, carrying out comparative and fair tests and finding things using secondary sources of information. Pupils should now be able to draw conclusions based on their own data and observations and use evidence to justify their ideas and use their scientific knowledge and understanding to explain their findings.

Planning

Planning is a process in which all teachers are involved in to ensure that the school delivers full coverage of the National Curriculum and Foundation Stage.

The school aims to be as creative as possible when teaching science making it as cross-curricular as possible.

It is the policy of our school that children are made aware of the learning objectives of each topic as it is covered. These objectives will be placed in each child's Science book alongside each topic. As the 'Working Scientifically' objectives underpin our work, an appropriate level of these objectives will be highlighted to the children. This way children will be aware of the skills they are developing throughout the year. Classes will be made aware of the objectives they are covering and where they next steps will be. Objectives are highlighted in KS2, in science books at the beginning of a topic.

Currently, we are exploring the idea of working without highlighting first the objective the children will be focusing on for a particular lesson. This will only be in certain lessons and they will be lessons which lend themselves to this particular way of learning – e.g. learning about magnetism. The idea of this is to:

- Hand the learning over to the pupils
- Giving the objectives to a pupil before they start gives away the ending before the uncovering of the learning begins
- Giving the objectives to pupils could discourage them from pursuing potentially constructive lines of enquiry that appear tangential to the objectives.

The work here will be recorded in floor books and the children will reflect at the end and decide for themselves what they had learnt from the lesson. This could inspire them to decide what they want to investigate next based on their findings.

The time allocated to teaching Science is in line with current recommendations.



Teaching Methods

We endeavour to teach Science through carefully structured first-hand experience, linked to the teaching of skills, knowledge, concepts and attitudes. In this way, children may be helped to make sense of their experiences and apply their learning to new situations. As children progress through the school, they should be encouraged to take increasing control of their learning. Pupils should also be taught to record their work in a methodical, logical and careful scientific manner.

Science is taught both as a discrete subject and in a cross-curricular way. As Literacy, Numeracy and ICT feature strongly in Science; Science can be used to enable pupils to practice these skills. Pupils will be encouraged to use their speaking and listening skills to describe what they see, predict and organise themselves. In Numeracy the children should be able to practice their data handling and measuring skills.

There is no specialist teaching in science, it is taught by classroom teachers. Where able, Teaching Assistants will support group activities, help with the organisation of resources and provide extra help for children with particular needs.

Assessment

Our assessment in Science is continuous and ongoing and will be used to inform the teacher about ways to organise further learning, ensuring that work planned is of an appropriate level of difficulty and shows satisfactory progression. In the Foundation Stage, we assess children's knowledge and understanding according to the EYFS Learning and Developmental stages.

In KS1 and KS2, we use a range of assessment materials to ensure that children are making appropriate progress. These can include some assessment tasks. Pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programmes of study. We ensure that assessment is based on observation, participation and written outcomes.

The progress of the children is recorded on the school online tracking system 'SPTO'. The science leader monitors progress of children in each class ensuring appropriate progress is being made and the curriculum is being covered. We ensure that planning meets the needs of those children working at a deeper level of understanding and children who are not yet working at their expected level.



I.C.T

The use of ICT will be built into the delivery of the science curriculum wherever possible. The children are given the opportunity to research, predict, test and improve their ideas by using relevant ICT resources to improve understanding, aid communication and enhance presentation.

Personal, Social and Health Education

Health education is based units of work on ourselves, health and growing, teeth and eating, moving and growing, keeping healthy and life cycles. These units are taught as part of cross-curricular themes. Sex and Relationship Education is taught following the Christopher Winter project (See SRE policy)



Resources

Resources are stored centrally, alongside printed material available. We also have extensive grounds which are a valuable resource, including our woodland, garden and kitchen areas. Visitors are invited in to support our curriculum where possible, for example, vets, nurses, dentists.

Differentiation and Special Needs

Science is taught in mixed ability classes throughout the school. Both high and low attaining ability children will be provided with suitably differentiated work which will allow the development of a scientific education at an appropriate level.

The Learning Environment

Classrooms will have displays of current Science in hand. The profile of Science will reflect its place as a core subject. The displays should be interesting and interactive taught within cross-curricular themes. Relevant Scientific vocabulary being introduced in current units of work should also be displayed. These are in the form of ‘Science Learning Walls’.

Celebrations of Success

The school does endeavour to have project weeks where a cross curricular project, with an overall Science theme is completed throughout the whole school. We aim to work with local industries such as Robert’s Bakery. School ‘Science Week’ has been a great success over a number of years now where children of all ages have had opportunities to work together on fun Science activities. This has become now an annual event which children remember and look forward to. Our eco work has recently been enormously successful and we are due to gain ‘eco’ status to reflect the work we do here.

We are currently involved in a ‘Pollination Project’ – ‘POLLI-NATION’. This is a 4-5-year project aimed at increasing the amount of pollinating plants around the school. We are currently investigating the possibility of having bee hives on the school grounds.



Equal Opportunities and Inclusion

At Leftwich we work to ensure that all children have the opportunity to gain scientific knowledge and understanding regardless of gender, race, class, physical or intellectual ability. We will try wherever possible to use different teaching approaches in order to maximize the learning experiences of children with differing learning intelligences, such as visual, oral and kinaesthetic. We will try to ensure that expectations do not limit children's achievements and that assessments do not involve any cultural, social, linguistic or gender bias.

Science Subject Manager

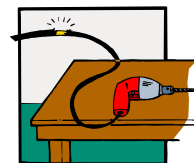
Is responsible for,

- the science policy document.
- offering appropriate advice, support and current information to teachers.
- monitoring the continuity, progression and assessment.
- provision and organisation of resources.
- keeping abreast of new developments, participating in and providing relevant INSET.

Health and Safety

The school's safety policy is based on guidelines provided by Cheshire West and Chester Council and the Association for Science Education. A copy of this should be read and signed and dated by all members of staff. Teachers should ensure that all work to be carried out will comply with all health and safety procedures.

Equipment will be checked regularly and damage reported and defective equipment taken out of action. Risk assessments will be undertaken for all practical activities. We encourage children to risk assess for themselves.



Review

This policy was reviewed and agreed by governors in December 2016. It will be reviewed again in December 2018, unless new developments in the teaching of science may make it necessary for a review before this