

LEYS FARM JUNIOR SCHOOL

SCIENCE POLICY 2020

Leys Farm Junior School's policy for science is based on the new primary curriculum which has been statutory since September 2014. The implementation of this policy is the responsibility of all teaching staff.

Aims and Objectives of Science at LFJS

'A high-quality science education provides the foundations for understanding the world. 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,' National Curriculum, 2014.

At LFJS we believe that the best science teaching develops pupils' curiosity in the world around them. For our pupils to achieve well in science, they need to acquire necessary scientific knowledge but must also enjoy the experience of an engaging and purposeful practical approach, in order to develop important scientific and transferable skills.

Intent

- to provide our pupils with scientific knowledge as stated in the National Curriculum, but to see science teaching as limitless and a response to children's natural curiosity;
- to equip children with the scientific skills to plan and explain different and appropriate types of enquiries;
- children to be able to be critical of their own investigations in terms of reliability and validity;
- to make links between science learning and other areas of the curriculum;
- give children access to high-quality outdoor learning to further extend their scientific understanding of the world around them;
- through high-quality science teaching, we intend to help our pupils understand how major scientific ideas have played a vital role in society. Most importantly, we aim to prepare our pupils for life in an increasingly scientific and technological world.

Implementation

By delivering high quality, interesting and engaging science lessons where children's questions are encouraged, teachers aim to ensure the expectations of the National Curriculum are met and sometimes exceeded.

Science should be taught in a global or historical context where possible linking where possible to current themes of learning so the subject is covered in depth. Teachers should develop and extend pupils' scientific knowledge and understanding about science, where possible, through first-hand practical experiences, in order to develop their understanding of how to test an enquiry precisely. Children's scientific vocabulary and ability to articulate scientific concepts clearly and precisely should be encouraged and modelled enthusiastically by all teachers. Children should be frequently involved in school gardening projects or outdoor learning, providing opportunities to learn from the outdoor environment. Opportunities for children to work collaboratively in pairs, groups and/or individually should be provided in order to share ideas. Children's research skills need to be developed through the appropriate use of secondary sources. Children's questioning, predicting, observing, measuring and interpreting skills should be built upon, ensuring they are open-minded when given or obtaining facts and results and show an understanding of validity and reliability by the end of KS2.

Impact

Children will:

- revise and build upon the knowledge and understanding gained from KS1;
- have been taught the necessary science content needed to understand the world around them and as a basis for future learning as set out in the National Curriculum;
- have been taught how to plan, perform and analyse experiments and investigations in order to answer given and their own questions;
- be able to present findings in a variety of ways by the end of KS2;
- have gained practical skills linked to outdoor learning;
- be able to make clear links with other curriculum subjects.

Monitoring and Reviewing

We monitor and review the implementation and impact of the teaching of science at LFJS by:

- learning walks/lesson visits (by subject leaders and headteacher/SLT);
- sharing and scrutiny of planning;
- scrutiny of work produced in children's workbooks across the curriculum linked to science;
- discussions and sharing of good practice through necessary CPD and staff training.

Science Curriculum Planning

Teachers at LFJS plan science lessons guided by the National Curriculum (2014). The science leader provides a long-term plan in order to ensure correct coverage of the units of learning set out within the National Curriculum, with mixed-age classes and any lost learning in mind. Science is matched where possible to overarching themes of learning, in order to ensure cross-curricular learning and to ensure the science curriculum is broadened. Areas of learning are updated yearly in order to ensure all children are taught the appropriate content of biology, chemistry, physics and Earth science. Please refer to the long-term plan for details of the specific areas of learning covered in each class over the year. Teachers should also use the 'Big Ideas of Science' document to ensure they are fully aware of the knowledge and skills content that needs to be revised, and the content that needs to be implicitly taught.

All Science lessons are planned using a LFJS medium term planning proforma and have focussed learning objectives (knowledge and/or enquiry based), differentiation and success criteria to ensure that pupils make at least good progress over a series of linked lessons.

'Working scientifically' needs to be embedded throughout the areas of learning wherever possible as we aim to involve children in first-hand investigative work. This focuses on the key aspects of scientific enquiry which enable pupils to find answers to their own scientific questions. Ideas for appropriate investigations are provided by the science subject leader if teachers are unsure.

Assessment

At present, children's **attainment** is measured termly, based on age-related expectations set out in the National Curriculum and the 'Big Ideas of Science' document. Children are compared against these expectations and are categorised into 'working towards and

working towards plus ' - still working towards the national standard, 'expected' - having reached expected standard and 'greater depth' - having mastered the expectations for each of their units of learning. Work is marked and feedback given in Science Books and children are to be given an assessment task to showcase their new learning. Children are given short impact tests at the beginning and end of their science topics, in order to give further evidence of having met expectations.

Science Books are to be passed on and continually used when a pupil enters a new year, in order to ensure they have displayed coverage of all the curriculum needs by the end of Year 6. Gardening skills are further assessed with an assessment booklet for each child, based upon the RHS Gardening Skills Assessment Criteria, showing the skills they have acquired as they progress through the years and any gaps that teachers should plan for.

Impact of Science on Teaching in Other Areas of the Curriculum

At LFJS, we value the links that science has on other curriculum areas. Collaborations should be made frequently with other subject areas by planning projects that encompass other curriculum skills: scientific texts and non-fiction books should be made available to all children in order to promote a love and curiosity of the subject alongside exposing them to different genres. Parts of investigations should be communicated professionally using the LFJS Investigation Proforma and the link between Maths and science must be developed through data collection, analysis and graph drawing. Links between science, computing, engineering and DT are to be created through project work. Science should also be explored in a global and historical context, with children beginning to understand how ideas have developed, and how they are currently developing. Teachers are also encouraged to make links with science within English writing lessons.

British Values

It is important to us that links are made to British values within science. We aim to include the work of scientists that will reflect the diversity of the world we live in. We aim to develop respect for differing opinions on scientific matters, exposing children to a variety of scientific opinions whilst ensuring tolerance is at the forefront in line with our Strengths work. We constantly ensure children are aware of the ethical guidelines that direct scientific work in line with the rule of law.

Cultural Capital

We are aware that children's understanding of the world around them will differ vastly based upon their life experiences. We aim to give them experiences that impart knowledge and make links within their learning by providing a rich, experienced based scientific education and by creating outdoor learning opportunities and cooking workshops which further their development. We are constantly on the look out for scientific opportunities which will further the children's cultural capital, such as using volunteers in school with a diverse range of skills. Children are taught that the units they are learning about in science are either biology, chemistry and physics so that they are clear about the different areas and focus of science.

Health and Safety

Teachers are aware of the necessity to plan safe activities in science, and are aware of the need to seek advice when uncertain. Pupils need to be made aware of the need for personal safety and the safety of others during science lessons and are to be reminded as appropriate.

Resources

All science resources are stored in the science cupboards in themed boxes. The subject leader must be informed of any changes regarding science resources i.e. missing or broken resources and/or when new or replacement resources are required. Alongside practical equipment, teachers are encouraged to use:

Natural Curriculum

Explorify

PSTT

ASE

Reviewed: November 2020