

Langmoor Primary School - Science

Science makes an increasing contribution to all aspects of life. It provides the foundation for understanding the world around us. At Langmoor we do not only teach pupils about the world they live in, but also emphasise on skills which enable them to explore how to study it and make sense of various phenomena. Science provides a methodology for explaining, making predictions and analysing natural phenomena. As such, it is a fundamental aspect of all children's learning.

Aims:

The National Curriculum for science aims to ensure that all pupils:

- Develop lively, **enquiring minds** and the ability to question.
- Build on children's natural curiosity and enable them to understand and care for the world in which they live in.
- Learn scientific knowledge and skills.
- Understand how to safely and responsibly use science equipment.
- Provided with an environment in which they can **investigate and communicate** their findings in a variety of ways.
- Make potential scientific links with all other areas of the curriculum.
- Develop scientific knowledge and conceptual understanding through the specific disciplines of biology chemistry and physics.
- Are equipped with the scientific knowledge required to understand the **uses and implications** of science today and for the future.
- Build an understanding of the **nature, processes and methods of science** through different types of science enquires that help them to answer scientific questions about the world around them.

Objectives:

In order to achieve our aims we will:

- Teach science in a positive, interesting and engaging way for the children.
- Provide regular opportunities for children to plan, predict, carry out and evaluate their investigations.
- Use practical, hands on approach using everyday materials and experiences.
- Ensure continuity and progression through adherence to the key learning objectives (KPI's) outlined in the curriculum.
- Provide opportunities for children to use skills from other curriculum areas e.g. Literacy, Numeracy and ICT to enhance science.

Organisation of Science in School

The aims and objectives for Science reflect the requirements of the new National Curriculum 2014. The National Curriculum documents for science set out a clear, full and statutory requirements for all children. It determines the content of what will be taught, and sets attainment targets for learners.

Early Years Foundation Stage

The EYFS aims to give the children skills so they are ready to access the National Curriculum in KS1. The Early Learning Goal 'understanding the world' strand has considerable scientific content. Children are encouraged to participate in activities based on first hand experiences that allow them to undertake exploration, observation, problems solving, predication, critical thinking, decision making and discussion. The skills acquired in Early Years Foundation Stage are further developed and refined in KS1.

Key Stage 1 and Key Stage 2 - Topics

At Langmoor, Science is taught as a discrete lesson and where possible links are made to other subjects. In Key stage one, these topics are covered in a two year rolling cycle, however in Key Stage 2 all singular topics are covered in depth.

KS1

Cycle 1			Cycle 2		
Autumn	Spring	Summer	Autumn	Spring	Summer
Light and dark	Materials using senses	Growth life cycle	Materials	Classifying animals	Growth life cycles
Seasonal materials	Heating/changing shape	Human Inc. Animals	Making bread/kneading	Habitats	Visit the allotment - Veg soup.

KS2

Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> ▪ Animals Inc. Human ▪ Light ▪ Forces and magnets ▪ Rocks ▪ Plants 	<ul style="list-style-type: none"> ▪ Animal Inc. humans ▪ Sound ▪ States of matter ▪ Electricity ▪ Living things & their habitats 	<ul style="list-style-type: none"> ▪ Animals Inc. humans ▪ Earth & Space ▪ Properties and changes of materials ▪ Forces ▪ Living things 	<ul style="list-style-type: none"> ▪ Animals Inc. humans ▪ Electricity ▪ Evolution and inheritance ▪ Forces ▪ Living things and their habitats.
Joined Key Stage project - Seasons			

Working Scientifically within the Curriculum

All teachers at Langmoor ensure that there are frequent opportunities for pupils to work scientifically within the curriculum. Working scientifically specifies the understanding of the nature, processes and methods of science.

Year 1 and 2

Pupils are taught to:

- Ask simple questions and recognise that they can be answered in different ways.
- Observe closely, using simple equipment.
- Carry out simple tests.
- Identify and classify.
- Use observations and ideas to suggest answers.
- Gather and record data to help answer questions.

Year 3 and 4

Pupils are taught to:

- Ask relevant questions and use different types of scientific enquiries to answer them.
- Set up simple practical enquiries, comparative and fair tests.
- Make systematic and careful observations, and where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.
- Gather, record, classify and present data in a variety of ways to help answer questions.
- Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.
- Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.
- Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.
- Identify differences, similarities or changes related to simple scientific ideas and processes.
- Use straight forward scientific evidence to answer questions or to support findings.

Year 5 and 6

Pupils are taught to:

- Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.
- Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.
- Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.
- Use test results to make predictions and set up further comparative and fair tests.
- Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.
- Identify scientific evidence that has been used to support or refute ideas or arguments.

Assessment

Assessment is collated using a wide range of methods. They are both formative and summative. Assessment is used to inform the teacher for future planning, promote continuity and progression. We base our assessments on observations, participation, questioning, and written outcomes.

Monitoring and evaluation

The Science Subject Leader, in conjunction with the Head teacher and the Senior Leadership Team, is responsible for the monitoring and evaluation of science standards and provision within the school. The science subject leader maintains a 'Monitoring Portfolio' of evidence from monitoring and evaluating activities, these include, planning, assessment, work samples, teacher observations, analysis of standards achieved and enquiries carried out. Governors are supplied with the key findings and relevant documentation and the governors responsible for the curriculum make visits to discuss and observe teaching and learning.

Role of the coordinator

The role of the co-ordinator is to:

- Coordinate the teaching of Science within all Key Stages.
- Monitor the use of the policy and curriculum map.
- Monitor and maintain resources for the whole school.
- Provide information about science for the school development plan.
- Organise CPD for staff in conjunction with the OLP (Oadby Learning Partnership).

- Organise science day / visitors to lead session during science week.
- Lead staff meetings to develop the teaching of Science within the school.

Governors

Linked governors will carry out a governor visit, meeting with the subject leader and class teachers to ensure they have a comprehensive picture of the subject, pupils learning and policy. This will be recorded in a link governor summary report as part of our monitoring process.

Updated and reviewed in October 2016 (Science Co-ordinator - Miss N Ayub)

To be reviewed again in October 2019