Langmoor Primary School – Science

1. Statement of Intent:

Langmoor Primary School recognises and values the importance of Science and scientific enquiry. We aim to build science capital for all our pupils, regardless of their background and starting points. We intend to inspire our pupils to continue to use Science in their everyday lives, further education and careers – promoting STEM subjects. This is done through adhering to the aims of the National Curriculum objectives. Our curriculum provides a meaningful and coherent science education based on progression and sequencing of knowledge and skills across the key stages.

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.

2. 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.

At Langmoor Primary School, we aim to provide children with activities which encourage them to ask questions, predict and hypothesise; to observe, measure and manipulate variables; to interpret their results and evaluate scientific evidence.

Throughout their study of science pupils should have the opportunity to develop and use communication skills and techniques such as reporting their work to a variety of audiences.

Pupils will be encouraged to present information in an ordered manner through drawings ,writing, diagrams, tables, charts, and graphs; and use books, charts and other sources from which they can gain information.

Pupils will be given the opportunity to use computers to store, retrieve and present their work.

Opportunities will also be provided for pupils to develop an awareness of the importance of science in everyday life including its relationship to personal health and safety. This may be provided through investigations, secondary sources of information or visits.

Pupils will be encouraged to consider domestic and environmental contexts as starting points for their work in science.

3. 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.
- Teachers will seek to foster English, Maths and Computing skills in Science.
  English: presentation skills, written accounts.
  Maths: using stopwatches, recording data using diagrams and graphs, reading/writing/interpreting graphs.
  Computing: using controlled equipment such as data loggers.

4. 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. Science is taught as a single discrete subject. In KS2, Science is taught one afternoon a week (2hours) and in KS1 it's covered twice a week, every half term (alternating with humanities to allow in-depth thinking and experiments to take place)

KS1

Year 1	Year 2
▪ Animals including humans ▪ Senses ▪ Everyday materials ▪ Plants ▪ Seasonal changes	▪ Everyday materials ▪ Animals including humans ▪ Plants ▪ Habitats
Seasonal changes are spread across the year to ensure children are observing their environment with hands-on activities.	

KS2

Year 3	Year 4	Year 5	Year 6
▪ Animals Inc. Human ▪ Light ▪ Forces and magnets ▪ Rocks ▪ Plants	▪ Animal Inc. humans ▪ Sound ▪ States of matter ▪ Electricity ▪ Living things & their habitats	▪ Animals Inc. humans ▪ Earth & Space ▪ Properties and changes of materials ▪ Forces ▪ Living things	▪ Animals Inc. humans ▪ Electricity ▪ Evolution and inheritance ▪ Forces ▪ Living things and their habitats.

5. 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

During years 1 and 2, pupils should be encouraged to develop investigative skills and understanding of science in real world contexts. Pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- 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

The primary focus of science teaching in lower key stage 2 is to allow children to develop a greater understanding of the world around them through science. When working scientifically, children should discuss, test and develop ideas about every day phenomena and the relationships between living things and environments that are familiar to them. During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- 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

The primary purpose of science in upper key stage 2 is to enable pupils to develop a broad and deep understanding of a wide range of scientific concepts. They should explore these in an investigative way which encourages them to analyse and reason with a variety of scientific phenomena. During years 5 and 6, pupils should be taught to use the following

practical scientific methods, processes and skills through the teaching of the programme of study content:

- 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.

6. Assessment

Both formative and summative assessments assessing children's work will be carried out throughout the area of study in order to assess pupils' progress. Some of these assessments may be moderated within year groups, and key stage groups so that they are standardised within the school. Appropriate records will be kept by each class teacher and a National Curriculum level will be recorded for each child at the end of each school year.

Samples of work are viewed from children of differing abilities in each year group to support teachers and the subject leader in assessing children's work. So that appropriate judgements can be made about standards and progression within the school.

Parents are invited to attend termly Parents' Evenings where there will be an opportunity for parents to discuss their child's progress. At the end of each academic year parents will receive a formal written report on their child's progress. Parents will also be given opportunities to see the work their child has been doing. Reporting to the next class teacher occurs at the end of each academic year by means of the school computerised science record forms and discussions between staff.

7. SEN and G&T

In order for children to fulfil their maximum potential each child needs to be provided with work that is tailored to their specific needs, and which keeps pace with their developing abilities. There are a number of ways that this can be approached but no one method is sufficient in itself. Effective teaching demands the use of as much variety as possible to encourage achievement.

In order to provide work that is appropriately challenging it is important to ensure that the curriculum will:

a) Build on pupils' past achievements.

b) Remove barriers that may prevent participation.

c) Provide opportunities for success.

d) Present pupils with challenges that will allow for more achievement.

- Equal opportunities. Effective science work and planning should provide equal opportunities for boys and girls and any children with special education needs. There is a need to ensure that all children receive equal access to the science curriculum.

8. 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.

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

10. 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.

11. Evaluations and Review.

Minor changes may need to be made to this policy after some time.

A regular review of the policy will ensure that the policy addresses the changing demands of the school and any changes in legislation. The structure of the document should allow any such modifications to be made relatively easily. We need to review the policy on a regular basis to ensure that it is kept up to date.

Updated and reviewed in October 2023

To be reviewed again in October 2025