

Science Policy for Lacewood Primary School



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A Statement of Policy for the Science Curriculum

Introduction

This document is a statement of the aims, principles and strategies for the teaching and learning of science at Lacewood Primary School. This document is intended to be used by all teaching staff and school governors; and copies are available for parents from the head teacher and the school website.

Values

Science is an essential part of the learning experience. It enables children to appreciate and make sense of the developing world around them. It provides them with opportunities to develop skills, which can be applied across the curriculum.

At Lacewood, science is about children developing a sense of investigation and enquiry, extending their knowledge and understanding of the world around them. Our curriculum includes opportunities for children to develop their knowledge about life processes and living things, materials and their properties, physical processes and to develop skills of working scientifically.

All aspects of our key principles at Lacewood Primary School underpin our curriculum, which promotes our school motto and ethos of always trying your best to be your best. Our curriculum is led by our whole school core principles of developing every child's learning characteristics, in line with our school learning buddy approach, of:

Co-operation and independence (Bee) 

Thinking skills and problem solving (Owl) 

Effort, resilience and commitment (Snail) 

Collecting ideas and making links in their learning (Squirrel) 

Aims and purposes

Our aims in teaching science are:

- To help children to develop a naturally questioning and curious mind about the world around them.
- To help children develop their intellectual and practical skills, including a spirit of enquiry which allows them to explore and investigate science and make sense of the world around them.
- To build on children's own starting points in science when developing their understanding and knowledge, recognising that they bring to school a variety of experience.
- To come to understand the nature of 'scientific method' involving careful observation, hypothesising, fair testing, drawing meaningful conclusions and evaluating.
- To give opportunities for children to become independent and investigative learners, while working individually and as a group.
- To recognise that learning in science can and should hold boundaries.

Organisation

Science and the National Curriculum

At Lacewood, staff plan a structure and sequence of lessons to ensure they have developed the skills detailed in our Science knowledge and skills progression document, required to meet the aims of the national curriculum. Our science curriculum develops children's interest, awe and wonder through a range of activities including experiments, research and cross curricular tasks.

Early Years Foundation Stage

In the Foundation Stage, children are taught Science through the key areas of learning set out within the EYFS Statutory Framework. Through a broad range of teacher-led, child-initiated and continuous learning opportunities, children will be taught to:

- Use their senses to investigate a range of objects and materials
- Find out about, identify and observe the different features of living things, objects and worldly events
- Look closely at similarities, differences, patterns and change
- Ask questions about why things happen and why things work
- Develop their communication and co-operation skills
- Talk about their findings, sometimes recording them
- Identify and find out about features of the place they live and in the natural world around them.

Key Stage 1 and 2

In Key Stage 1 and 2, Science will be taught in planned and arranged topic blocks by the class teacher, these are, where appropriate linked to the Year group's overall Topic theme. This ensures that all topics are covered and enables progression through the year groups. Children have weekly Science lessons, with teachers following the scheme of work, but adapting lessons where necessary to suit the needs of their class.

The following topics are covered throughout **Key Stage 1:**

- Animals, including Humans
- Everyday Materials
- Plants
- Seasonal Changes
- Living Things & their Habitats

The following topics are covered throughout **Key Stage 2:**

- Plants
- Living Things & their Habitats
- Animals, including Humans
- Rocks
- Light
- Electricity
- Sound
- Properties and Changes of Materials
- Earth & Space
- Evolution & Inheritance
- Forces & Magnets

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
1	Animals including Humans: the human body, senses (Biology) Seasonal Changes: Autumn- weather variations, day length variation (Physics)	Everyday Materials: names of materials and physical properties (Physics/ Chemistry) Seasonal Changes: Winter (Physics)	Working Scientifically/ Materials: Investigations of materials and umbrella investigation. Seasonal Changes: Spring (Physics)	Animals including Humans: identifying carnivores, herbivores and omnivores & pets (Biology) Seasonal Changes: Spring (Physics)	Plants: growing plants, identifying and labelling structures (plants and trees), naming a variety of garden plants, deciduous and evergreen trees (Biology) Seasonal Changes: Summer (Physics)	Animals including Humans: identifying a variety of common animals (Biology) Seasonal Changes Summer (Physics)
2	Living things and their habitats: Living Things (biology)	Living things and their habitats: Habitats (biology)	Materials: Uses of everyday materials (Physics)	Animals including humans: (biology)	Plants: (biology)	
3	Materials: Rocks & soils (Chemistry)	Materials: Rocks, soils & fossils (Chemistry) Animals including humans - Teeth (Biology)	Animals including humans: Skeleton, muscles and the digestive system (Biology)	Light & Dark: What is light? (physics)	Forces: How do magnets work? (Physics)	Plants: How do plants grow? (Biology)
4	States of Matter: Solids, Liquids and Gases (Chemistry)	Electricity: Simple Circuits Conductors and Insulators (Physics)	Living things and their habitats: (Biology)	Living things and their habitats: Food Chains (Biology)	Animals including humans: Digestive System (Biology)	Sound: (Physics)
5	Earth and Space: Earth, Moon and Sun (physics)	Materials: Reversible and Irreversible changes (chemistry)	Forces: Gravity and other forces (physics)	Animals including humans: The Heart (biology)	Animals including humans: Puberty (biology)	Forces: Gears, Levers and Pulleys (physics)
6	Light: (Physics)	Electricity: (Physics)	Living things and their habitats: (Biology)	Living things and their habitats: (Biology)	Evolution and Inheritance: (Biology)	

At the beginning of each lesson, teachers plan opportunities for pupils to recall prior learning. This enables pupils to consolidate their previous learning, while also preparing them for future learning, in line with the sequence of lessons. This is particularly important for our EAL and SEND children, who may need more opportunities to retain and embed scientific vocabulary and concepts.

Through our planning, we involve problem solving opportunities that allow children to apply their knowledge, and find out answers for themselves. Children are encouraged to ask their own questions and be given opportunities to use their scientific skills and research to discover the answers. This curiosity is celebrated within the classroom. Planning involves teachers creating engaging lessons, often involving high-quality resources to aid understanding of conceptual knowledge. Teachers use precise questioning in class to test conceptual knowledge and skills, and assess pupils regularly to identify those children with gaps in learning, so that all pupils keep up. Tasks are selected and designed to provide appropriate challenge to all learners, in line with the school's commitment to inclusion.

Teachers encourage children to use a range of scientific vocabulary as they progress through each year group. Time is spent during lessons introducing and reinforcing age-appropriate scientific vocabulary and children are given opportunities to consolidate their use of vocabulary as they move through the year groups.

Working Scientifically skills are embedded into lessons to ensure that skills are systematically developed throughout the children's school journey and new vocabulary and challenging concepts are introduced through direct teaching. This is developed through the years, in-keeping with the topics.

Teachers demonstrate how to use scientific equipment, and the various Working Scientifically skills in order to embed and develop scientific understanding. Teachers find opportunities to develop children's understanding of their surroundings by accessing outdoor learning and using the local environment eg: The local RSPB Wetland's Centre

Regular events, such as Science Week, allow all pupils to come off-timetable, to provide broader provision and help develop the children's Science Capital. These events often involve families and the wider community.

The Role of the Subject Leader

- To take the lead in policy development and planning science units into the school's curriculum, to ensure progression and continuity throughout the school.
- To collect and moderate evidence of achievement in each year group.

- To support colleagues in the development of planning and implementation of units of work.
- To keep up to date with developments in science education and disseminate to staff as appropriate.
- To lead in service training.
- To monitor the teaching of science and the delivery of units of work throughout the school annually.
- To ensure effective use of resources available.

Planning

- Units of work allocated to each year group provide balanced coverage of all National Curriculum requirements as identified in the programmes of study.
- In Foundation Stage, units of work are planned in line with early learning goals.
- It is intended that teachers use the National Curriculum guidance to aid delivery of our long and medium term plans.
- The units of work will be allocated to each year group will be evaluated yearly by the class teacher.
- Where appropriate, links between science and other subjects will be made and taught through cross-curricular approaches.
- There is no specialist way of teaching science. It is taught by the class teacher in a variety of ways.
- Each year group will study the relevant science units for their year group.
- A variety of methods and approaches are used by teachers as they feel appropriate. These include whole class teaching, group work or individual enquiry.
- Differentiation of the planned activities tries to ensure that all children access the Science curriculum.
- Emphasis when teaching science is on first-hand experience therefore much is taught through practical investigative work.
- Children record their findings in a variety of ways.

Resources

- The class teacher resources units studied by each year group. This is an on-going process as funding allows.
- Scientific equipment is also kept in labelled trays or boxes. Posters, charts and information for children are also stored in the science room or in classrooms.
- Most resources are kept in the main resource room.

ICT

Teachers try to incorporate ICT into tasks in a meaningful and relevant way. Findings can be communicated through word processing or data bases. Other equipment has also been purchased to support ICT in science which includes; data loggers and microscopes. In addition, staff are encouraged to incorporate new technologies, initiatives and on-line resources to enhance their day to day teaching.

Health and Safety

Teachers are to ensure all health and safety standards are adhered to. The 'Be Safe' manual should be referred to closely and is situated on the staff room notice board for reference by all staff.

Assessment, Recording and Reporting

Informal formative assessments are carried out by teachers in the course of their teaching.

Suitable methods of assessment include;

- Effective, constructive comments when marking work.
- Discussion during an activity.
- Specific activities for individual pupils.
- The class teacher identifies the children who have not achieved the appropriate level in the relevant Science unit.
- The class teacher reports to parents annually as part of our on-going record of achievement.

Equal Opportunities and Special Needs

All pupils have equal opportunity to reach their full potential across the Science Curriculum regardless of their race, gender, cultural background, ability or any physical or sensory disability. Wherever practicable, provision will be made for pupils with special educational needs, when this affects their ability to participate and achieve in a Science lesson.

