



Science Policy

Rationale

Science is a systematic investigation of the physical, chemical and biological aspects of the world which relies on first hand experiences and on other sources of information. The scientific process and pupils' problem-solving activities will be used to deepen their understanding of the concepts involved. The main aspects of science to be studied will be determined by the programmes of study of the National Curriculum, using the children's misconceptions and interests as a starting point for their learning. Through science pupils at Our Lady of Lourdes will continue to deepen their respect, care and appreciation for the natural world and all its phenomena.

Aims

- to develop pupils' enjoyment and interest in science and an appreciation of its contribution to all aspects of everyday life.
- to build on pupils' curiosity and sense of awe of the natural world.
- to use a planned range of investigations and practical activities to give pupils a greater understanding of the concepts and knowledge of science.
- to introduce pupils to the language and vocabulary of science.
- to develop pupils' basic practical skills and their ability to make accurate and appropriate measurements.
- to develop pupils' use of computing in their science studies.
- to extend the learning environment for our pupils via our environmental areas and the locality.
- to promote a 'healthy lifestyle' in our pupils.
- to promote questioning through real-life experiences and outcomes.
- to study the impact Science and noted scientists have had on our lives today.
- to build on the children's knowledge lesson by lesson, ensuring they retain the 'sticky' concepts they have been taught.

Objectives

The following objectives derived from the above aims will form the basis of our decisions when planning. Assessment will also be related to these objectives:

To develop pupils' enjoyment and interest in science and an appreciation of its contribution to all aspects of everyday life.

- to develop a knowledge and appreciation of the contribution made by famous scientists to our knowledge of the world including scientists from different cultures.
- to encourage pupils to relate their scientific studies to applications and effects within the real world
- to develop knowledge of the science objectives contained within the programmes of study of the National

Curriculum

- to build on pupils' curiosity and sense of awe of the natural world.

- to develop in pupils a general sense of enquiry which encourages them to question and make suggestions.
- to encourage pupils to predict the likely outcome of their investigations and practical activities.
- to use a planned range of investigations and practical activities to give pupils a greater understanding of the concepts and knowledge of science.
- to provide pupils with a range of specific investigations and practical work which gives them a worth-while experience to develop their understanding of science.
- to develop progressively pupils' ability to plan, carry out and evaluate simple scientific investigations.
- to develop pupils' use of computing in their science studies.
- to give pupils opportunities to use computing (including digital microscope, video, digital camera, data logger) to record their work and to store results for future retrieval throughout their science studies.
- to give pupils the chance to obtain information using data bases.
- to develop the ability to record results in an appropriate manner including the use of diagrams, graphs, tables and charts.
- to introduce pupils to the language and vocabulary of science.
- to give pupils regular opportunities to use the scientific terms necessary to communicate ideas about science.
- to develop pupils' basic practical skills and their ability to make accurate and appropriate measurements.
- within practical activities give pupils opportunities to use a range of simple scientific measuring instruments such as thermometers and force meters and develop their **skill in being able to read them**.

Principles of teaching and learning

Differentiation and Special Educational Needs

The study of science will be planned to give pupils a suitable range of differentiated activities appropriate to their age and abilities. Tasks will be set which challenge all pupils, including the more able. For pupils with SEN the task will be adjusted or pupils may be given extra support. The grouping of pupils for practical activities will take account of their strengths and weaknesses and ensure that all take an active part in the task and gain in confidence.

Breadth and Balance

We will ensure that all staff, including those in a supportive role, have a clear idea of the concepts and skills to be taught.

We will select the content to ensure a balanced coverage of the National Curriculum programmes of study. The curriculum is designed to explore the children's misconception, learning, next steps and essential 'sticky' knowledge. This is supported by access to the Explore, Engage and Extend scheme (PSTT) and TAPS assessment materials.

Variety

Pupils will be involved in a variety of structured activities and in more open-ended investigative work that support all aspects of the substantive and disciplinary aspects of the science curriculum.

Relevance

Wherever possible science work will be related to the real world and the children's interests, hobbies and experience and everyday examples will be used.

Cross-curricular skills and links

Science pervades every aspect of our lives and we will relate it to all areas of the curriculum. We will also ensure that pupils realise the positive contribution of both men and women to science and the contribution from those of other cultures. We will not only emphasise the positive effects of science on the world but also include problems, which some human activities can produce.

Continuity and Progression

Foundation Stage pupils investigate science as part of Knowledge & Understanding of the World. By careful planning, pupils' scientific skills and knowledge gained at Key Stage 1 will be consolidated and developed during Key Stage 2. Our long term planning grids make explicit reference to this progression and next steps for learning.

Equal Opportunities

All children have equal access to the science curriculum and its associated practical activities. The SLT, Class Teachers and TAs at Our Lady of Lourdes are responsible for ensuring that all children, irrespective of gender, learning ability, physical disability, ethnicity and social circumstances, have access to the whole curriculum and make the greatest possible progress. Where appropriate, work will be adapted to meet pupils' needs and, if appropriate, extra support given. More able pupils will be given suitably challenging activities. Gender and cultural differences will be reflected positively in the teaching materials used.

All children have equal access to the Science Curriculum, its teaching and learning, throughout any one year. This is being monitored by analysing pupil performance throughout the school to ensure that there is no disparity between groups.

Health and safety

Pupils will be taught to use scientific equipment safely when using it during practical activities. Class Teachers, Teaching Assistants and the Subject Leader will check equipment regularly and report any damage, taking defective equipment out of action. The LEA has adopted the ASE book 'Be Safe' as its model risk assessment and therefore this should be consulted when necessary. All teachers have the log in details to access this online. If an activity is not covered by 'Be Safe' then we will contact CLEAPSS (School Science Service Helpline 01895251496) for further advice.

Assessment

Assessment opportunities will be identified within schemes of work and will be largely formative. Assessments will be informed by ASE and TAPS documents, which give staff indicators of what an expected

standard in each topic should look like. Children will carry out an investigation with a measured outcome. This information is then added to the half termly progress grids for Science.

Marking (see policy)

Much of the work done in science lessons is of a practical or oral nature and, as such, recording will take many varied forms thus making marking different. It is, however, important that written work is marked regularly and clearly, as an aid to progression and to celebrate achievement. When appropriate, pupils may be asked to self-assess or peer assess their own or other's work.

Role of the subject Leader

The Subject Leader will provide professional leadership and management for science and will ensure that it is managed and organised so that it meets the aims and objectives of the school. The Subject Leader will monitor teaching and learning within the subject and will initiate reviews of the scheme of work. The Subject Leader will manage the resources for science and will maintain the stock to meet the needs of the curriculum.

Resourcing

In order to encourage an investigative approach to learning all classrooms contain sufficient basic equipment to allow simple investigations, observations and measurements to be carried out in small groups.

The science Subject Leader will see that this level of resourcing is maintained and will discuss the budget for science with the HT.

More specialist pieces of equipment and those posing a potential safety risk will be held by the SL and staff access when required.

Review

The Science Subject Leader will monitor classroom teaching in all year groups according to the monitoring schedule. The effectiveness of the science curriculum will be evaluated in discussions with the HT and SMT. Priorities for in service support and external review will be established.

This evaluation will form the basis for an action plan, which will then inform the School Improvement Plan.

This policy will be reviewed biannually by the Science Subject Leader or as necessary in view of government or LA initiatives, analysis of assessments or curriculum development.