Our Lady and St Thomas
Science Policy Reviewed March 2020

Mission Statement

"You are unique, talented and loved by God"

Our Lady & St Thomas Primary school recognises that we are all unique and loved by God. We celebrate the uniqueness of each individual child in our care and aim to provide a rich and relevant school experience within the context of a Christian Catholic environment, dedicated to promoting Gospel values.

By communicating these values, we endeavour to enable our children to achieve their full potential and become literate, numerate and caring adults with life enhancing skills and attitudes.

As a Rights Respecting School we uphold the articles from the United Nations Convention on the Rights of the Child.
These articles underpin our Computing policy:
Article 29 (goals of education) Education must develop every child's personality, talents and abilities to the full. It must encourage the child's respect for human rights, as well as respect for their parents, their own and other cultures, and the environment.
Article 3 (best interests of the child) The best interests of the child must be a top priority in all things that affect children.
Article 17 (access to information from mass media) Every child has the right to reliable information from the media. This should be information that children can understand. Governments must help protect children from materials that could harm them.

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 2014.

Through science pupils at Our Lady and St Thomas Primary School will continue to deepen their respect, care and appreciation for the natural world and all its phenomena, with a real emphasis on how we impact our world.

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 progressively build children's enquiry skills
- 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.

Objectives

The following objectives derived from the above aims will form the basis of our decisions when planning a scheme of work. 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 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 and to appreciate the meaning of a 'fair test'.

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.

To develop pupils' use of ICT in their science studies

- to give pupils opportunities to use ICT (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 the internet.

Strategies

Differentiation and Additional Educational Needs

The study of science will be planned to offer children the opportunity to reach the same outcome. They will be given appropriate scaffolds and support to complete the task set. 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

Pupils will be involved in a variety of structured activities and in more open-ended investigative work:

- activities to develop good observational skills
- practical activities using measuring instruments which develop pupils' ability to read scales accurately
- structured activities to develop understanding of a scientific concept
- Open ended investigations.
- On some occasions pupils will carry out the whole investigative process themselves or in small groups.

Relevance

Wherever possible science work will be related to the real world 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 Understanding of the World. Children are encouraged to investigate through practical experience; teachers guide the children and plan opportunities that allow the children to experience and learn whilst experimenting for themselves. By careful planning, pupils' scientific skills and knowledge gained at Key Stage 1 will be consolidated and developed during Key Stage 2.

Pupils in Key Stage 1 will be introduced to science through focused observations and explorations of the world around them. These will be further developed through supportive investigations into more independent work at Key Stage 2. The knowledge and content prescribed in the National Curriculum will be introduced throughout both key stages in a progressive and coherent way.

The programmes of study describe a sequence of knowledge and concepts. While it is important that pupils make progress, it is also vitally important that they develop secure understanding of each key block of knowledge and concepts in order to progress to the next stage. Within Key Stage 2, we have mixed age classes and to ensure coverage of all science blocks we will teach in a three year cycle. The expectation being, that the children will have a secure understanding within year 3 and this will be deepening in the higher year groups.

Assessment

Formative assessment is used to guide the progress of individual pupils in Science. It involves identifying each child's progress in each area of the Science curriculum, determining what each child has learnt and what therefore should be the next stage in his/her learning. Teachers in the course of their teaching usually carry out formative assessment informally however the beginning of each lesson will involve a 'Flashback' activity where the children answer questions based on last lesson, last topic and last year.This will inform any future planning.

Other suitable tasks include:

- Small group discussions, usually in the context of a practical task.
- Specific arrangements for particular pupils.
- Individual discussions in which children are encouraged to approve their own work and progress.

Summative assessment takes place at the end of topic in the form of a focuses task relating to aspects of the topic explored.

Wherever possible experimental and investigative work should form the basis for the teaching of Science. Children should be given as many opportunities as possible to carry out investigations and experiments.

Reporting to parents is done termly through parents' evenings and annually through a written report.

Equality of Opportunity

All children have equal access to the science curriculum and its associated practical activities. The SLT, Class Teachers and TAs at Our Lady and St Thomas Primary School 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 and Teaching Assistants will check equipment regularly and report any damage, taking defective equipment out of action. A simple risk assessment will be carried out for all practical activities any perceived hazards will be reported to the Head who will determine the appropriateness of said activity.

Assessment for Learning, recording and reporting

Throughout the school teachers will assess whether children are working at expected level, greater depth or below the expected level for their age based on their understanding and application of the content of the National Curriculum 2014. Progress and attainment is reported

to parents through parents' evenings and end of year reports. Evidence will be collated in science books across the years of work (in KS2 books will be kept across the three years of work).

Marking for Improvement (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.
In line with our marking policy, verbal feedback will be used within the lesson to set targets and move learning forward. Whole class feedback will be given in a following session with target questions shared as needed, the children will record only the answers in their books.

Role of the subject Leader

The Subject Leader should be responsible for improving the standards of teaching and learning in Science through:

- Monitoring and evaluating pupil progress;
- Provision of Science;
- The quality of the Learning Environment;
- Taking the lead in policy development;
- Auditing and supporting colleagues in their CPD;
- Purchasing and organising resources;
- Keeping up to dates with changes in the subject.

Resourcing

Specialist pieces of equipment and those posing a potential safety risk will be held centrally and staff access when required

Policy Review

This policy was reviewed and updated by E Pearson Science Lead- March 2020.