St. Joseph's Catholic Primary School

Educating in Faith, Love and Hope

POLICY FOR SCIENCE

Person Responsible: Science Leader (Sue Branagan)
Date of review: Summer 2017
Date of next review: Summer 2019

Mission Statement

At St Joseph's we welcome all
as members of our school family.
We learn and care for each other as brothers and sisters; enriched by the teachings of Jesus.

We encourage creativity;
valuing our unique talents and skills as gifts from God.
Working alongside pupils and parents/carers,
we can all succeed and realise great things.

Serving the communities within the Parish of St Joseph's and St Francis and beyond,
we reach out to all.
We respect each other, our different cultures and faiths; celebrating our richness and diversity.

Through worship and prayer we show our love; striving to achieve our very best.

Introduction

Children at St. Joseph's School should be motivated and engaged by the practical elements of Science; this in turn should lead them to understand and discuss the nature and existence of the natural world around them. Through developing an interest in the subject, they should come to see how scientific skill, enquiries, the use of specific language and investigations form part of our everyday existence and nature of God's world. These skills should be used in conjunction with children's ability to communicate affectively and problem solve in a collaborative way.

It is our overall aim that children should be keen to know more; make progress that is appropriate for them and begin to relate and understand scientific concepts as a cohesive subject.

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 enhance 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 a 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 encourage links 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 independently obtain information using internet based resources.

Principles of teaching and learning

Differentiation and Additional 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, has a clear idea of the concepts and skills to be taught. The importance of Attainment Target 1 (Experimental and Investigative Science) which has a fifty per cent

weighting at Key Stage 1 and a forty per cent weighting at Key Stage 2, will be stressed. The other Attainment Targets (AT2, AT3 and AT4) will be taught using an experimental and investigative approach.

Variety
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. Children are encouraged to take a leading role during an investigation from creating questions through to considering how their findings relate to the real world.

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.

Computing should be used to explore scientific hypothesis, observations should then be discussed using key scientific vocabulary. The use of Computing to measure and record information should be made explicit to the children and is an opportunity for data handling, use of graphs to be implemented for a rich cross curricular experience.

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.

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. How this is achieved is indicated in our scheme of work for science.

Assessment for Learning, recording and reporting
Every unit of work provides assessment opportunities for all scientific strands including working scientifically. Assessment opportunities will be identified within schemes of work by way of a unit title page. The children will develop skills to work independently and with peers to assess their progress against key unit objectives. In both Key stages 1 and 2 the assessment will be at the end of each unit. Formal assessments will be used to support teacher assessment. Levels awarded will be related to the National Curriculum level descriptions and will be moderated within the school.

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. Marking for improvement comments in a child's book must be relevant to the learning objective to help children to better focus on future targets. It is imperative that children are given the time

to reflect on their learning, through opportunities such as pupil conferencing (a chance for children to discuss their work and identify next step in a one to one discussion with an adult).

Equality of Opportunity
All children have equal access to the science curriculum and its associated practical activities. The SLT, Class Teachers and TAs at St. Joseph's Catholic 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.

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. A simple, teacher lead, risk assessment will be carried out for all practical activities. The Subject Leader, together with the Head teacher will review risk assessments annually. If colleagues are in any doubt further support should be sought from CLEAPSS (School Science Service Helpline 01895251496).

Management and administration
An annual key stage meeting will be held to review the needs of science. Personal development of staff and training needs will be discussed. The Science Subject Leader will organise and lead these meetings.

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 there is a bank of scientific equipment clearly organised in a designated area of the school. All who use this equipment should respect, by care and return of items, so that the use of the equipment is prolonged. Teachers are responsible for planning ahead of their teaching to ensure that what they require for their teaching is available. If it is not readily available one of the subject leaders should be consulted.

Review
The Science Subject Leader will monitor classroom teaching in all year groups at selected times. The effectiveness of the science curriculum will be evaluated in discussions with the Head teacher and relevant SLT members. Priorities for in service support and external review will be established.

This policy will be reviewed annually by the Science Subject Leader on a two yearly basis.

Reviewed by: Sue Brangan May 2017