

# St Joseph's Catholic Primary School Science Policy

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## Introduction

This policy document is a statement of the aims, principles and strategies for the teaching and learning of Science at St. Joseph's Catholic Primary School and should be viewed in relation to our Mission Statement which states:

**At St. Joseph's, we live,  
love and learn by the  
example of Jesus.**

It is also important to appreciate the importance of Science in enabling our learners to achieve the '5 outcomes' as outlined in *Every Child Matters*.

Through appropriate learning experiences in Science, we aim to ensure that our learners:

- ✚ Are safe
- ✚ Are healthy
- ✚ Achieve economic well-being
- ✚ Enjoy and achieve
- ✚ Make a positive contribution

This policy is directed towards teachers, pupils, parents and governors of the school and is intended as an on-going working document for those concerned, and as such, is liable to regular modification for the benefit of those who have access to, or are influenced by its content.

The individual nature of St. Joseph's School in relation to the National Curriculum forms the basis of this policy, which was drawn up in consultation with all teaching staff and with reference to Hertfordshire County guidelines and various relevant publications.

Through its implementation and constant review, it is envisaged that this policy will;

1. provide the opportunity / stimulus for a wide variety of detailed, well-planned investigations which allow children to experience success at their own level whilst acquiring scientific skills and a broad, well- balanced knowledge base as outlined in the National Curriculum;
2. provide a structured yet adaptable framework which enables both pupils and their teachers to approach scientific investigation with confidence and a deep awareness of the role of Science in their everyday lives;
3. encourage the desire and motivation (within both pupils and teachers) to undertake challenging and open-ended Science activities on the various themes contained in the National Curriculum for Science;
4. promote / enhance attributes such as confidence, awareness, curiosity, enthusiasm, resourcefulness, imagination, ingenuity, and inventiveness through developing lively, enquiring minds capable of sound reasoning based on accumulated knowledge and previous relevant experience;
5. raise awareness of the close links with other curriculum areas, particularly ICT, Geography, Mathematics and Design & Technology;

6. raise awareness of the social, moral, cultural and ethical implications of various scientific discoveries;
7. Ensure that each individual child is given equal access to all of the features of the National Curriculum for Science.

### The Science Curriculum/The National Curriculum

The content of the revised National Curriculum for Science is set out in the programmes of study and applies across four strands which outline the expected standards of pupil performance within the programmes of study

The four strands of the Science curriculum are as follows:

Science 1 – Scientific enquiry

Science 2 – Life processes and living things

Science 3 – Materials and their properties

Science 4 – Physical processes

The programmes of study outlined in the National Curriculum emphasize that pupils should be given opportunities to:

“...use focused exploration and investigation to acquire scientific knowledge, understanding and skills.”

In order to achieve this “focus”, the school has adopted the QCA scheme for Science, which allows the children to study all aspects of the Science curriculum in a structured and progressive format, thus ensuring a more coherent and balanced range of experiences for all concerned.

### Equality of Opportunity

At St. Joseph’s, we believe that all children have a right to full and equal access to all areas of the curriculum, including Science.

Provision is made for those with special educational needs in order to ensure that they are able to achieve to their full potential in any Science activity undertaken.

In planning/delivering various Science topics, teachers are encouraged to refer to the contribution of all groups of society in scientific research and development, thus providing good role models for all pupils.

### Planning

The QCA scheme provides the teacher with their annual and medium-term plans which they use in order to formulate their short-term plans on a weekly basis. The school has also purchased the Heinemann Explore Science Scheme to assist teachers with planning and assessment. The weekly plans are submitted to the Headteacher/Science Co-ordinator at regular intervals for monitoring purposes. The weekly planning sheets provide the teacher with the opportunity to provide suitable experiences for all pupils. The planning format will constantly be reviewed.

The Science Co-ordinators File contains the complete QCA scheme and each teacher has their own individual copy for planning purposes.

## Teaching and Learning

“Good lessons are associated with high pupil expectation, sound preparation, motivating work and relevant starting points”

(HMI Science Inspection Document)

Through the QCA scheme of work, the children revisit various topics within a structured, yet adaptable framework, enabling them to consolidate previously acquired knowledge and skills and use this as a springboard to further learning.

Progression within and across the Key Stages can be seen in the increasing depth of study and the increasing complexity of concepts and the application of these concepts to a wider range of contexts (both real and imagined). Hence, unnecessary repetition should not occur if individual teachers refer to the Medium-term planning sheets which detail the previous units / activities undertaken earlier in the scheme.

Each topic also provides the opportunity to develop a wide range of investigative skills in relation to the concepts / knowledge covered in the suggested activities.

Whenever possible, teachers will use the opportunity to use their Science teaching as a means of developing various cross-curricular links with ICT, Geography, PHSE, Mathematics, Design & Technology, History and Literacy.

## Teaching Strategies

In order to ensure the highest quality of Science education/experiences for the pupils, a wide range of teaching methods/strategies will be used as appropriate to the activity being undertaken.

These strategies, used appropriately, will enable the teacher to teach with confidence and adaptability, as well as motivating the children to foster their own learning.

## Investigative Science-Scientific Enquiry

Through their involvement in practical investigative Science, not only are we enabling the children to develop various essential skills of enquiry, we are also making their Science meaningful and transferable to their everyday lives / experiences.

Teacher intervention is of paramount importance in developing the essential skills for sound scientific enquiry and this may be necessary on an individual, group or whole class basis. Whilst such intervention cannot always be “planned for”, it is encouraged as a means of directing the children towards the desired outcome of an activity.

Scientific enquiry is the perfect medium for enabling all children, no matter what their ability, to learn. It provides them with the opportunity to actually experience the concepts being studied, and to work in collaboration with others, thus developing their communication skills in a variety of ways.

## Organisation

As with all areas of the curriculum, good Science teaching involves the use of a variety of teaching styles / methods dependant on the activity being undertaken and the age group being taught.

An appropriate blend of whole class teaching (introductions, plenary sessions, demonstrations), group work (investigations, assignments, discussions) and individual work (reports, research etc.) will be experienced by the children as they progress through the school, and this “blend” will usually be dictated by individual teaching styles and the topics being studied.

Whatever the activity planned by the teacher, it will take into consideration those children with special needs from both ends of the spectrum. The Medium term plans (QCA) provide the teacher with the envisaged learning outcomes for both more and less able children which he / she can use when planning specific activities. Hence, there is scope for the more able to extend their own learning whilst allowing all children to progress at their own pace.

Differentiation is therefore by both task and by outcome, as appropriate to the activity being undertaken and the child/children being taught.

### Monitoring - Assessment

Assessment is used to:

- ✓ provide diagnostic information about individuals/groups
- ✓ plan future teaching and learning
- ✓ provide summative information for teachers
- ✓ provide information for parents
- ✓ contribute to each child's curricular record

The school has adapted the *Heinemann Explore Science* Scheme which provides focussed assessment tasks at the end of each topic and a range of further assessment materials are also available as required.

Teachers are also actively encouraged to ensure that they assess the children's ability to conduct sound scientific investigation as frequently as possible (Science 1). This should provide subsequent teachers with a detailed analysis of each individual's achievement/progress in this area.

Following a Science day, a new way of assessing the children's understanding and ability in Scientific Enquiry has been put in place as of December 2007. At the front of each child's book will have a sheet with all the scientific enquiry targets that are to be met for that year. Teachers will be able to sign and date each target as and when it is met. As well as this at the beginning of each topic children will have in their books the targets/learning intentions for the topic. The teacher will again tick if target is met and children will be able to see what is expected of them and which areas they need to work on. This will be very informative to teachers when planning, assessing and reporting. This will be reviewed on a regular basis.

### Monitoring - Pupil Records

Record keeping should be seen as a valuable planning tool and a useful means of ensuring full coverage of the Science curriculum.

Records of pupils achievements are kept to:

- ✓ plan pupil's future learning

- ✓ report progress to parents
- ✓ maintain a written record of pupil's learning
- ✓ provide a curricular record for each pupil
- ✓ identify areas for improvement (both individual and group)

### Reporting

Parents receive a full written report about their child's progress and achievements in Science in the Spring term and the Summer term for the Foundation Stage. This report gives details of the skills that the child has acquired through the various units of work covered, and provides the opportunity to acknowledge the efforts of individuals as appropriate.

Any matters arising from this written report can then be discussed with the class teacher at the subsequent parental consultations.

Parental consultations provide the teacher with a forum for discussing any matters relating to pupils understanding and enjoyment of the science topics being covered during these terms.

Parents are welcome to come into school at any time, through prior appointment, to discuss any concerns or issues arising from the work being undertaken in Science. The Co-ordinator is always available to support staff and to talk to parents, in such cases, if the need arises.

### The Role of the Co-ordinator

In planning, the Co-ordinator should:

- ✓ plan work with teachers
- ✓ review and contribute to teacher planning
- ✓ encourage cross-curricular links as appropriate
- ✓ prepare the Science policy and review the scheme of work
- ✓ develop the Science policy and review the scheme of work in collaboration with staff
- ✓ prepare an annual subject development plan

The Co-ordinator will assist staff by:

- ✓ leading staff meetings
- ✓ planning/leading INSET activities
- ✓ providing consultancy/advice
- ✓ specifying and ordering all resources
- ✓ co-ordinating staff requests for resources
- ✓ providing appropriate assessment materials
- ✓ monitoring / maintaining the condition and availability of resources.

The Co-ordinators' responsibility for monitoring and evaluating includes:

- ✓ analysing pupil's access to the subject
- ✓ reviewing teacher's plans
- ✓ reviewing teacher/pupil records
- ✓ reviewing assessment and SAT results
- ✓ leading curriculum review meetings
- ✓ ensuring the high profile of Science throughout the school

### I.C.T

Interactive whiteboards are well established now in all classrooms, the school has purchased a variety of software to help deliver the science curriculum. This includes *Collins Virtual Experiments* in Years 3-6, *RM Easiteach* for Reception to Year 6, *Heinemann Explore Science* CD ROMS for Materials, Living Process and Physical Processes in Key Stage 2, visualisers, digital microscopes and digital cameras. Teachers also have access to the internet in every classroom from Nursery through to Yr 6. This allows access to a whole range of resources on line including Knowledge Box which has a wide range of interactive activities and resources for science.

### Resources

The majority of Science resources are stored in the Science cupboard in the Resources Room. The majority of resources are organised by topic and housed in various boxes depending on their size.

The Co-ordinator consults with all class teachers about the resource implications of their Science topics (as outlined in the QCA scheme ) and any requests for resources are addressed immediately - budget permitting.

An audit of Science resources is carried out annually.

### Review

This policy should be viewed as a working document for the benefit of all concerned in the Science education of the children at St. Joseph's Catholic Primary School.

An annual review of this policy should ensure that the high standard of Science education throughout the school is maintained and that the document remains both relevant and accessible to all concerned.

Review date: July 2010

Catherine Reynolds (July 2009)