

Saint Francis of Assisi Catholic Primary School

Science Policy – May 2017

Introduction:

At Saint Francis of Assisi Catholic Primary School we are committed to providing all children with learning opportunities to engage in Science. This policy reflects Saint Francis of Assisi School values and philosophy in relation to the teaching and learning of Science. It sets out a framework within which teaching and non-teaching staff can work, and gives guidance on planning, teaching and assessment. The implementation of this policy is the responsibility of all teaching staff. The responsibility for monitoring and review rests with the science co-ordinator.

- Science teaches an understanding of natural phenomena.
- It aims to stimulate a child's curiosity in finding out why things happen in the way they do.
- It teaches methods of enquiry and investigation to stimulate creative thought.
- Children learn to ask scientific questions and begin to appreciate the way science will affect their future on a personal, national, and global level.

Aims and Objectives:

We live in an increasingly scientific and technological age where children need to acquire the knowledge, skills and understanding to prepare them for life in the 21st century.

Through the framework of the National Curriculum 2014, science aims to:

- To stimulate children's interest and enjoyment in the area of science
- Equip children to use themselves as starting points for learning about science, and to build on their enthusiasm and natural sense of wonder about the world.
- Develop through practical work the skills of observation, prediction, investigation, interpretation, communication, questioning and hypothesising, and increased use of precise measurement skills and ICT.
- Encourage and enable pupils to offer their own suggestions, and to be creative in their approach to science, and to gain enjoyment from their scientific work.
- Enable children to develop their skills of co-operation through working with others, and to encourage where possible, ways for children to explore science in forms which are relevant and meaningful to them.
- Encourage children to collect relevant evidence and to question outcome and to persevere.
- Encourage children to treat the living and non-living environment with respect and sensitivity.

- To encourage children to raise questions and learn how to investigate and explore these using both firsthand experience and secondary sources.
- To help children understand the nature of scientific ideas and to obtain and test the evidence for them.
- To help children recognise and assess risks and hazards to themselves and to others when working with living things and materials and to take action to control them.

We believe science encompasses the acquisition of knowledge, concepts, skills and positive attitudes. Through the Programmes of Study in the Science National Curriculum 2014, children will acquire and develop these skills throughout their Primary years. We believe that science promotes communication in a specific and precise language involving mathematical and logical thinking. It allows children to develop ways of finding out for themselves and gives them practice in problem solving. In science, pupils are encouraged to be open-minded and to try and make sense of what they see and find out.

Programmes of Study:

Provision is made for different ages and levels of ability Children are given opportunities to:

- Take increasing responsibility for their work.
- Work independently and in groups.
- Be involved in tasks of varying duration.
- Undertake teacher directed and child initiated tasks.

Children undertake a range of activities designed to enhance their scientific knowledge and understanding including:

- Planning experimental work, obtaining, considering and presenting evidence. Scientific enquiry should include: observations over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing and research using secondary sources.
- Using ICT where appropriate.
- Evaluating their work.
- Taking part in investigative activities both in the local and wider environment.
- Undertaking trips and visits where appropriate.

Content:

Refer to the Science National Curriculum 2014, which states the curriculum's purpose of study, aims, scientific knowledge and conceptual understanding, the nature, processes and methods of science and spoken language.

School curriculum:

Key stage 1 and 2 overview

The programmes of study for science are set out year-by-year for the key stages 1 and 2. Each year group will teach their programmes of study through topic and context based teaching. Each year group will participate in a science week in the summer term. Working scientifically will be taught alongside two units in every year group.

Year 1

Autumn 1- Animals, including humans
Spring 1- Everyday materials and working scientifically
Spring 2- Seasonal changes
Summer 1 (science week)- Plants and working scientifically

Year 2

Spring 1- Animals including humans
Spring 2- Living things and their habitats
Summer 1 (science week)- materials and working scientifically
Summer 1- Plants and working scientifically

Year 3

Autumn 2- Light and working scientifically
Spring 1- Rocks
Spring 2- Animals, including humans
Summer 1 (science week)- Forces and magnets and working scientifically
Summer 2- Plants

Year 4

Autumn 2- States of matter and working scientifically
Spring 2- Electricity
Summer 1 (science week)- Animals, including humans and working scientifically
Summer 1- Sound
Summer 2- Living things and their habitats

Year 5

Autumn 2- Forces and working scientifically
Spring 1- Earth and Space
Summer 1 (science week)- Properties and changes of materials and working scientifically
Summer 1- Animals, including humans

Summer 2- Living things and their habitats

Year 6

Spring 1- Animals, including humans

Summer 1 (science week)- Electricity and working scientifically

Summer 1- Evolution and inheritance

Summer 2- Light and Living things and their habitats

Foundation Stage

We teach Science in the Reception class as an integral part of the topic work covered during the year. As the reception class is part of the Foundation Stage of the National Curriculum, we relate the scientific aspects of the children's work to the objectives set out in the Early Learning Goals (ELGs), which underpin the curriculum planning for children aged three to five. Science makes a significant contribution to the objective in the ELGs of developing a child's knowledge and understanding of the world, e.g. through investigating what floats and what sinks when placed in water.

Equal Opportunities:

All children, regardless of race or gender, will have equal opportunities to participate in all activities. Positive attempts will be made to develop and use a wide range of resources and activities, which reflect the interests, and cultural background of all pupils. Appropriate provision will be made for children with special educational needs. Individual staff expertise and skills will be utilised to the benefit of both children and staff. Careful monitoring and evaluation of policy will be undertaken to ensure maximum effectiveness. The help of governors and other interested people will be encouraged and used where appropriate.

Inclusion:

In school we aim to meet the needs of all our children by differentiation in our science planning and in providing a variety of approaches and tasks appropriate to ability levels. This enables children with learning and/or physical difficulties to take an active part in scientific learning and practical activities and investigations and to achieve the goals they have been set. Some children will require closer supervision and more adult support to allow them to progress whilst more able children will be extended through differentiated activities. By being given enhancing and enriching activities, more able children will be able to progress to a higher level of knowledge and understanding appropriate to their abilities.

Cross Curricular Links:

Teachers should plan lessons where possible linked to context based learning. Teachers will be committed to linking the children's learning in science to other curricular areas. Speaking and listening will be actively promoted during scientific investigations. The children develop many of their non-fiction reading and writing skills in science. Mathematical skills such as weighing and measuring are an important part of science lesson. Where appropriate, children will record their findings using charts, tables and graphs using ICT. Science activities may be planned into mathematics and English as long as the mathematics and English skills are also being addressed.

Assessment and recording:

Assessment for learning is continuous throughout the planning, teaching and learning cycle. We focus on assessing one science skill at a time, and we assess children's work in science by making judgments as we observe children during lessons, question, talk and listen to children, and review their written work.

At the end of each topic, each child's achievement is recorded on an individual a class assessment sheet. This is recorded as beginning, working towards and secure.

Resources:

- Appropriate books will be available in the classroom libraries at all times.
- Children will be taught to use a range of scientific equipment.
- Children will have regular use of ICT resources during science sessions.
- Newspapers, magazines etc. will be used as appropriate.
- Children will have direct access to resources, within health and safety limitations, which they will be taught to use with respect.
- Parents will be informed of the science topics so that they can support the work at home if appropriate. Health and Safety:
- A risk assessment will be made, as part of the planning process, before any potentially dangerous scientific activity is undertaken.
- Children will be informed of any risks or hazards but will also be encouraged to assess and identify risks for themselves.
- Children will be shown how to use scientific equipment safely.

Staff Development/INSET:

Opportunities will be taken for staff to undertake training in Science to develop and reinforce knowledge and skills and to review the latest developments.

Where appropriate staff expertise from within the establishment or from other schools or the Advisory Service will be used to support staff development.

The Science Leader will be responsible for the development and monitoring of the Curriculum at each Key Stage.

Evaluation:

This policy will be reviewed as and when necessary. Updated October 2015