



St Columba's RC Primary School

Science Policy

MISSION STATEMENT

We are companions on a journey
Living
Learning
Loving
Laughing
In the footsteps of Our Lord

Teaching science at St Columba's allows our children to experience and explore the world around them. We have five principles to teach Science at St Columba's, these are :

Wonder : To question the world around us

Investigate: To observe and experiment

Understand: Working Scientifically to gain knowledge

Discover: Using a variety of equipment and different learning environments

Enjoyment: teamwork by listening to others

Aims and Expectations

Our aims in teaching science are to enable children:

To develop an everyday application of scientific knowledge in the world around them

To develop a respect for all living things and the environment and an understanding of their interdependence

To promote the learning of skills, understanding and key vocabulary through a scientific attitude to the solving of problems

To develop the skills of investigation: hypothesising, observing, measuring, predicting, experimenting, communicating, interpreting, explaining and evaluating and testing hypotheses

To communicate and record information following practical observations

To promote confidence in the use of appropriate scientific equipment correctly and safely, including the use of ICT to collect and display data

To encourage the ability to make predictions and suggest explanations based on an understanding of the world around them and scientific knowledge

To develop an ability to understand and interpret scientific information presented in verbal, mathematical, diagrammatic or graphic form and translating such information from one form to another

To make links between science and other subject areas

To have an enjoyable experience of science so they will develop a deep and lasting interest and may be motivated to study science further

Teaching and Learning

2.1 Planning

The principal aim is to develop children's knowledge, understanding and skills. We achieve this by providing the children with a broad and balanced curriculum. In addition we employ a variety of teaching strategies to allow our children to develop their scientific understanding and skills, through whole class, small group or individual work. At St Columba's we recognise that children have different learning styles and we take this into account when planning and delivering the science curriculum.

Planning for science is a process in which all teachers are involved to ensure that the school gives full coverage of the National Curriculum. The school teaches science through a topic based approach. In all year groups, science is a driver subject for a majority of the topics which ensures that the subject is high profile in our school. Content is taught carefully and thoroughly. Scientific enquiry, known as 'Working Scientifically' in the 2014 curriculum, is taught through the school and embedded.

2.2 Early Years Foundation Stage

Science in the Early Years Foundation Stage (EYFS) is an integral part of the topic work covered during the week. It is taught within the learning area of 'Knowledge and Understanding of the World' and Expressive Art and Design but as with other year groups, links to their topics where appropriate and relevant.

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 0-5. Science makes a significant contribution to the objectives in the ELGs of developing a child's knowledge and understanding of the world.

2.3 Key Stage 1 and 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.

Individual class teachers are responsible for modifying and adapting any resources they use to suit the needs of the children in their class. Teachers must ensure that the objectives of the National Curriculum are covered.

Cross curricular links

3.1 English

Science contributes to the teaching of English at St Columba's by actively promoting the skills of reading, writing, speaking and listening. The children develop oral skills in science lessons through discussions and through recounting their observations and scientific experiments. They develop their writing through reports and projects and by recording information. The work of famous Scientists is also studied in each year group, through English.

3.2 Mathematics

Science contributes to the teaching of mathematics in a number of ways. When the children use weights and measures, they are learning to use and apply numbers and data. Through working on investigations they learn to estimate and predict. They develop accuracy in their observation and recording of events. Many of their answers and conclusions include numbers.

3.3 Personal, social and health education (PSHCE) and citizenship

Science makes a significant contribution to the teaching of PSHCE and citizenship. This is mainly in two areas. Firstly, the subject matter lends itself to raising matters of citizenship and social welfare. For example, children study the way people recycle material and how environments are changed for better or worse. Secondly, the subject gives children numerous opportunities to debate and discuss. Science at St Columba's is also used to cover many elements of the RSHE curriculum from September 2020.

3.4 Spiritual, moral, social and cultural development

Science teaching offers children many opportunities to examine some of the fundamental questions in life, for example, the evolution of living things and how the world was created. Through many of the amazing processes that affect living things, children develop a sense of awe and wonder regarding the nature of our world. This is developed daily through our RE programme, Come and See. Science raises many social and moral questions. Through the teaching of science, children have the opportunity to discuss, for example, the effects of smoking, and the moral questions involved in this issue. We give them the chance to reflect on the way people care for the planet, and how science can contribute to the way we manage the earth's resources. Science teaches children about the reasons why people are different and, by developing the children's knowledge and understanding of physical and environmental factors, it promotes respect for other people.

3.5 ICT

Information and communication technology enhances the teaching of science at St Columba's because there are some tasks for which ICT is particularly useful. It also offers ways of impacting on learning which are not possible with conventional methods. Software is used to animate and model scientific concepts, and to allow children to investigate processes which it would be impracticable to do directly in the classroom. Children use ICT to record, present and interpret data, to review, modify and evaluate their work, and to improve its presentation. Children learn how to find, select, and analyse information on the Internet and on other media. They can also use e-mail to communicate on their scientific findings with children in other schools and countries.

3.6 Inclusion

At our school we teach science to all children, whatever their ability and individual needs. Science forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our science teaching we provide learning opportunities that enable all children to make good progress. We strive hard to meet the needs of those pupils with special educational needs, those with disabilities, those with special gifts and talents, and those learning English as an additional language, and we take all reasonable steps to achieve this. When progress falls significantly outside the expected range, the child may have special educational needs.

Staff will use a range of factors – classroom organisation, teaching materials, teaching style, and differentiation – so that we can take some additional action to enable all our children to learn more effectively. Assessment against the National Curriculum allows us to consider each child's attainment and progress against expected levels. This ensures that our teaching is matched to the child's needs. We enable all pupils to have access to the full range of activities involved in learning science.

Assessment

Assessment is in line with the school's Assessment Policy. Assessment opportunities are included in the study of each unit of work. Assessments should be based on the National Curriculum level descriptors. We use a variety of strategies to assess progress in science including; questioning, observation, discussion and marking. Topics begin with an assessment of what the children already know and recaps on any prior learning in this area.

4.1 Teachers will assess children's work in science by making informal judgements during lessons. On completion of a piece of work, the teacher assesses it, and uses this assessment to plan for future learning. Written or verbal feedback is given to the child to help guide his/her progress. Older children are encouraged to make judgements about how they can improve their own work.

4.2 At the end of a unit of work the teacher makes a summary judgement about the work of each child in relation to the EYFS learning goals or National Curriculum levels of attainment. Teachers use their own assessment to give each child a Science level at the end of each term. This information is recorded onto our tracker. This information follows the children through the school. Parents are informed of the pupil's progress in the end of year reports.

Role of the subject leader

5.1 The role of the subject leader is:

To be responsible for science within the school.

To set a good example of science teaching in their own classroom practice.

To provide support and help for colleagues in science.

To keep up to date, through reading and attendance at appropriate courses, with their developments and current good practice in science

To organise and order resources for science and spend within the allocated budget.

To identify concerns and needs within the school in science.

To be aware of the planning demands of continuity, progression and differentiation in science

To co-ordinate assessment and record keeping in science.

To review the science policy regularly and revise the curriculum mapping when necessary.

5.2 Record keeping and reporting of Science

All subject leaders have individual action plans which feed into the school development plan and outline how objectives for the year will be met. Actions plans are evaluated at the end of the school year and feed into the SEF. All core subject leaders feedback to the Governing Body once a year. Class teachers are also involved in record keeping and reporting of science.

Children's attainment is kept on our Science tracker by the class teacher. An analysis of data identifies specific needs/ areas for development in during monitoring and this is developed on.

Written annual reports which identify achievement and progress are sent out annually to parents/carers.

Resources

We have good resources for all science teaching units in the school. We keep these in a central store, where there is a box of equipment for each unit of work. Each classroom also has a set of basic equipment. The science coordinator carries out an annual audit of the resources and reorders any consumables when necessary. New resources can be purchased through negotiation between class teacher and co-ordinator, within the amount allocated in the annual budget.

Health and Safety

It is important that all teachers are aware of the responsibility they have regarding health and safety both inside and outside the classroom. Teachers need to take into account both the children's and their own health and safety when involved in scientific activities. They must plan time to discuss safe working practices before starting practical activities. Risk assessments are made in advance of any trips out and checked by the head teacher.

Equal opportunities

The children have equal access to the science curriculum and its associated practical activities. The SLT, Class Teachers and TAs 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. We ensure that work is suitably differentiated for SEN and EAL children, taking into consideration IEPs. We also give children the opportunity to communicate and record their knowledge in a variety of ways. We recognise that science may strongly engage our gifted and talented children and we aim to challenge and extend them.

Monitoring and evaluation

It is the responsibility of the subject leader to monitor the standards of children's work and the quality of teaching in science. The subject leader is also responsible for supporting colleagues in their teaching, for being informed about current developments in the subject, and for providing a strategic lead and direction for science in the school. The subject leader has specially-allocated time for fulfilling the vital task of reviewing samples of children's work, and visiting classes to observe science teaching.

K Baker May 2021

Review Summer 2023