ST CHARLES' CATHOLIC PRIMARY SCHOOL

SCIENCE POLICY

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Our Mission at St Charles' Catholic Primary School is to…
LOVE, LEARN, GROW TOGETHER

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SCIENCE POLICY

1 Aims and objectives

1.1 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.

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1.2 The aims of science are to enable children to:

- ask and answer scientific questions;
- plan and carry out scientific investigations, using equipment, including computers, correctly;
- know and understand the life processes of living things;
- know and understand the physical processes of materials, electricity, light, sound and natural forces;
- know about the nature of the solar system, including the earth;
- evaluate evidence and present their conclusions clearly and accurately.

2 Teaching and learning style

2.1 We use a variety of teaching and learning styles in science lessons. Our principal aim is to develop children's knowledge, skills, and understanding. Sometimes we do this through whole-class teaching, while at other times we engage the children in an enquiry-based research activity. We encourage the children to ask, as well as answer, scientific questions. They have the opportunity to use a variety of data, such as statistics, graphs, pictures, and photographs. They use Information Technolocy in science lessons where it enhances their learning. They take part in role-play and discussions and they present reports to the rest of the class. They engage in a wide variety of problem-solving activities. Wherever possible, we involve the pupils in 'real' scientific activities, for example, researching a local environmental problem or carrying out a practical experiment and analysing the results.

2.2 We recognise that there are children of widely different scientific abilities in all classes and we ensure that we provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child.

2.3 We achieve this in a variety of ways by:

- setting common tasks which are open-ended and can have a variety of responses;
- some task are undertaken by mixed ability groups
- grouping children by ability in the room and setting different tasks for each ability group;
- providing resources of different complexity, matched to the ability of the child;

- using teaching assistants to support the work of individual children or groups of children.

3 Science curriculum planning

3.1 The school uses the new national curriculum for science as the basis of curriculum planning. We make use of the local environment in our fieldwork and we choose a locality where the physical environment differs from that which predominates in our immediate surroundings.

3.2 We carry out our curriculum planning in science in three phases (long-term, medium-term and short term). The long-term plan maps the scientific topics studied in each term during the key stage. We follow guidance on this. In some cases we combine the scientific study with work in other subject areas, especially at Key Stage 1; at other times the children study science as a discrete subject.

3.3 Our medium-term planning follows the National Curriculum. Teachers plan each unit of work for each term. The Deputy Head Teacher reviews these plans.

3.4 The class teacher is responsible for annotating the lesson plans for each lesson (short term). These plans list the specific learning objectives of each lesson. The class teacher keeps these individual plans, and the science subject leader often discuss them on an informal basis.

3.5 The topics in science build upon prior learning. We ensure that there are opportunities for children of all abilities to develop their skills and knowledge in each unit and we also build progression into the science planning, so that the children are increasingly challenged as they move up through the school.

4 Foundation Stage

4.1 We teach science in reception classes as an integral part of the topic work covered during the year. As the reception class is part of the Foundation Stage we relate the scientific aspects of the children's work to understanding of the world which underpin the curriculum planning for children aged three to five. Science makes a significant contribution to the objective in EYFS Development matters e.g. through investigating what floats and what sinks when placed in water.

4.2 Foundation stage is focused on ongoing assessment and evidence is kept to support teacher's judgements. Photographs of science tasks completed by the child are annotated by the teacher and displayed in floor books or kept in Learning Journeys.

5 The contribution of science to teaching in other curriculum areas

5.1 English

Science contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. Some of the texts that the children study in English are of a scientific nature. The children develop oral skills in science lessons through discussions (for example of the environment) and through recounting their observations of scientific experiments. They develop their writing skills through writing reports and projects and by recording information.

5.2 Maths

Science contributes to the teaching of mathematics in a number of ways. The children use weights and measures and learn to use and apply number. Through working on investigations they learn to estimate and predict. They develop the skills of accurate observation and recording of events. They use numbers in many of their answers and conclusions.

5.3 Computing

Children use IT in science lessons where appropriate. They use it to support their work in science by learning how to find, select, and analyse information on the Internet. Children use IT to record, present and interpret data and to review, modify and evaluate their work and improve its presentation. Many lessons use IT to present information to the children and interactive smart board games to consolidate learning. Children also use I pads to record and report scientific investigations.

5.4 Personal, social and health education (PSHE) and citizenship

Science makes a significant contribution to the teaching of personal, social and health education. This is mainly in two areas. Firstly, the subject matter lends itself to raising matters of citizenship and social welfare. Children benefit from the nature of the subject in that it gives them opportunities to take part in debates and discussions. Science promotes the concept of positive citizenship.

5.5 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. 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.

6 Teaching science to children with special educational needs

6.1 We teach science to all children, whatever their ability. Science forms part of the school curriculum policy to provide a broad and balanced education for all children. We provide learning opportunities that are matched to the needs of children with learning difficulties.

6.2 Teachers use a range of strategies to meet children's special educational needs. Our work in science takes into account the targets set in the children's Learning Plans. Lessons have clear learning intentions; work and support is differentiated appropriately and assessment is used to inform the next stage of learning. Children are supported in a manner that acknowledges their entitlement to share the same learning experiences that their peers enjoy. Wherever possible, children are not withdrawn from the classroom situation. However, there are times when to encourage peer support and discussion, children may work in small groups.

7 Assessment and recording

7.1 We assess children's work in science by making informal judgements as we observe them during lessons. On completion of a piece of work, the teacher marks the work and comments as necessary.

7.2 At the end of each topic the class teacher must complete a tracking assessment sheet stating if each child is working towards the expected standard, at the standard or at greater depth. This method of recording also enables the teacher to make an annual assessment of progress for each child, as part of the child's annual report to parents.

8 Resources

8.1 We have sufficient 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. There is also a collection of science equipment which the children use to gather weather data. There is a good supply of science topic books to support children's individual research.

9 Monitoring and review

9.1 It is the responsibility of the science subject leader to monitor the standards of children's work and the quality of teaching in science. The science subject leader is also responsible for supporting colleagues in the teaching of science, for being informed about current developments in the subject and for providing a strategic lead and direction for the subject in the school. The science subject leader gives the headteacher an annual summary report in which strengths and weaknesses in the subject evaluated and areas for further improvement are indicated.