

St Bernadette's Catholic Primary School

Science Policy

The Mission for St Bernadette's Catholic Primary School is,

"to ensure a happy and secure learning environment where we celebrate the dignity and worth of all in our school community.

As a Christian community we recognise that in loving others we love Jesus and so help each other to reach our full potential."

Therefore the development and implementation of our Science Policy supports us in achieving our mission for all the children in our care.

Aims and Objectives

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.

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;
- Consider the uses and effects of science in society
- Know the names and the contribution made by men and women of science
- Develop a sense of awe and wonder.

Teaching and learning styles

We use a variety of teaching and learning styles in Science lessons. Our principle 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 ICT in Science lessons when 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. Whenever 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.

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. We achieve this in a variety of ways by:

- Setting common tasks which are open-ended and can have a variety of responses;
- Setting tasks of increasing difficulty (we do not expect all children to complete all tasks) grouping children by ability in the room and setting tasks for each ability group;
- Grouping the children by ability, where the teacher can give extra support to those who need it;
- Providing resources of different complexity, matched to the ability of the child;
- Using classroom assistants to support the work of the individual children or groups of children.

Science curriculum planning

Science is planned as part of a skills based creative curriculum. The science units taught in this correspond to the statutory requirements of all the year groups so that all areas of the National Curriculum for Science are covered.

Although knowledge and understanding of science has to be taught to fulfill the requirements of the National Curriculum, planning must also focus on science skills. The science skills taught in each unit are statutory requirements of the National Curriculum.

Creative demonstrations or practical 'Wow Science' should be included in the planning of science lessons to facilitate discussion and raise questions that could be investigated further which build on science skills.

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 scheme of work, so that the children are increasingly challenged as they move up through the school.

The Foundation Stage

At St Bernadette's 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 Curriculum, we relate the scientific aspects of the children's work to the objectives set out in the Early Learning Goals which underpin the curriculum planning for children aged three to five. Science makes a significant contribution to the objective in the Early Learning Goals of developing a child's knowledge and understanding of the world.

THE CONTRIBUTION OF SCIENCE TO TEACHING IN OTHER CURRICULUM AREAS

Religious Education and 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 the 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 God's world and how 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.

English

Science contributes significantly to the teaching of English at St Bernadette's School by actively promoting the skills of reading, writing and speaking and listening. Some of the texts that the children study in Literacy are of a scientific nature. The children develop oral skills in Science lessons through discussions i.e. of the environment and through recording their observations of scientific experiments. They develop their writing skills through writing reports and projects and by recording information and are encouraged to use the library to research topic.

Science does offer opportunities for 'Writing across the Curriculum' but it should be understood that the purpose for writing in science is to demonstrate an understanding of science and should be marked accordingly.

Mathematics

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 the children also learn to estimate and predict. They develop the skills of accurate observation and recording of events. They use number in many of their answers and conclusions.

Computing

At St Bernadette's School, the children use Computing 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 and on CD-ROMS, data loggers and digital microscopes. Children use Computing skills to record, present and interpret data and to review, modify and evaluate their work and improve its presentation.

Personal, Social and Health Education (PSHE) and Citizenship

Science makes a significant contribution to the teaching of Personal, Social and Health Education. Firstly, the subject matter lends itself to raising matters of citizenship and social welfare, where for example, children study the way people recycle material and how environments are changed for the better or worse. Secondly, in health education where children learn about the importance of good nutrition and a healthy lifestyle, and again when children learn about teeth and hygiene. Thirdly, children benefit from the nature of the subject in that it gives them opportunities to take part in debates and discussions. They organise campaigns on matters of concern to them such as, helping the poor or homeless. Science promotes the concept of positive citizenship.

Teaching Science to children with Special Needs

At St Bernadette's School, we teach Science to all the 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. Our work in Science takes into account the targets set in the children's Individual Education Plans (IEPs).

Assessment and Recording

Assessment in science is done using the 'Key learning' grids published by the Lancashire Science Team. In this the teacher specifies where each child's learning is against specific targets from the National Curriculum. These forms are handed into the subject leader at the end of each term (each term comprises two science topics).

Evidence of scientific understanding can be collected effectively from the talking, thinking and decision making the children are involved in rather than setting separate assessment tasks. Each lesson should provide an opportunity to identify *some* evidence from *some* children. We can't identify evidence from every child, every lesson but over time we should have plenty to help us make judgments and have examples from their work to back these up.

The Science Subject Leader keeps samples of children's work in a portfolio and uses these to demonstrate what the expected level of achievement is in Science for each age group in the school.

Resources

At St Bernadette's School, we are continually building up resources for all Science teaching units. We keep these in a central store where there is a box of equipment for each unit of work. We are building up a library of 'Wow Science' publications and ideas as well as the resources for this. The library contains a good supply of Science topic books and computer software and the internet is used to support children's individual research. We also have in place 'Inspiring Science', produced by the Lancashire Science Team to offer creative approaches to all areas of curricular science

Monitoring and Review

At St Bernadette's School, 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 and governors an annual summary report in which s/he evaluates strengths and weaknesses in the subject and indicates areas for further improvement.

Signed: (Headteacher)

Signed: (For and on behalf of the Governing Body)

Date: