

Bolsover Infant
and Nursery
School

Science Policy

July 2010

Introduction

This policy reflects the school values and philosophy in relation to the teaching of Science. It sets out the framework within which the teaching and non-teaching staff can operate and gives guidance on planning, teaching and assessment. This policy should be read in conjunction with the Scheme of Work for science, which sets out in detail what pupils in each year group will be taught. This document is intended for all teaching staff and non-teaching staff with classroom responsibilities, School Governors, parents, inspection teams, L.E.A. advisors and interested others. Copies are provided for School Staff and the Governing Body. Other copies are kept in the school office.

Aims

- Develop knowledge and understanding of important scientific ideas, processes and skills and relate these to everyday experiences.
- Learn about ways of thinking and of finding out about and communicating ideas.
- Explore values and attitudes through science.
- Give the children opportunities to enquire, explore and observe the world around them.
- Have creative and practical experiences to develop their understanding of scientific concepts.

Explore values and attitudes through science.

- Work with others, listening to their ideas and treating these with respect.
- Develop a respect for the environment and living things and show they understand how human activity impacts these things.
- Develop responsibility for their own learning when undertaking independent scientific activities.

How do pupils learn science?

Children learn best in science through first hand experiences. This could be through observing mini-beasts in their natural habitat, rolling a toy car down a ramp or investigating if the tallest person in the class has the longest stride. Children also need opportunities to share what they know, ask questions to extend their own understanding and to reflect on their work and what they have learned. Through the creative topic based curriculum teachers will provide practical experiences through which children can explore and extend their ideas both with the teacher and independently to develop their knowledge and understanding of science.

Planning the Science Curriculum

Planning is the responsibility of the class teacher with help from the Science Coordinator. The Early Learning Goals will inform planning for children in reception; the National Curriculum programmes of study in all other year groups. The science programme of study in conjunction with Chris Quigley's 'Planning a Skills Based Curriculum' forms the basis for planning in key stage 1. Teachers use these objectives to develop activities that stimulate and excite the children by providing scientific experiences in meaningful contexts. Plans are completed half-termly. These plans are also used as the basis for each class teacher to personalise the learning for their class by adding detail or changing activities to meet the needs of their children. Planning is used to:

- Set clear, achievable goals. A key question will be planned for at the beginning of the lesson and a clear success criteria will be set with/by the children;
- Ensure that work is matched to pupils' abilities, experience and interests;
- Ensure that there is continuity within each year group

- Ensure progression, continuity and subject coverage throughout the school;
- Provide criteria for assessment and evaluation of teaching and learning (success criteria);
- Provide real experiences through which pupils can learn based on the topic and home corner of the half term (see curriculum map);

As the class teacher plans the teaching of science, he/she will consider how the curriculum will be differentiated. Consideration will be given to:

- pupil groupings, e.g. ability or mixed ability groups; or group, paired or individual activities;
- resources, e.g. different equipment for different levels of ability;
- pupil activity, e.g. different group tasks, different pupil roles and responsibilities, different allocations of time and variation of pace within the lesson to meet the needs of different levels of ability;
- creativity and independence e.g. how the sand, water, tuff spot, home corner and other and other independent activities will support and extend learning.

Cross Curricular Links:

Literacy;

Science actively promotes the skills of reading, writing, speaking and listening. The children develop oral skills in science through discussions and through reporting their observations of scientific investigations. They develop their writing skills through writing reports and projects and recording information.

Mathematics;

Science can contribute to the teaching of maths in several ways. They use numbers to record answers and findings in investigations. Through investigations children learn to predict

and estimate. They use weights and measures to develop accurate observational and recording skills.

ICT:

Children develop their ICT skills by;

Researching information on the internet. Using the computer to analyse information. Children use ICT to record, present and interpret data and to review and evaluate findings.

PSHE:

Science can make a significant contribution to the teaching of personal, social and health education. Children can consider and debate how society's attitude to recycling affects their and the global environment. Science can encourage positive citizenship.

Foundation Stage Science

Science activities are carefully planned using the early learning goals in knowledge and understanding of the world. In conjunction with key stage 1, science is integrated into a topic based curriculum to ensure that the teaching and learning is relevant and meaningful.

The Role of the Science Co-ordinator

The Science Co-ordinator has the responsibility for the development and monitoring of the science curriculum. He/she is responsible for updating the School's Policy, Scheme of Work and Subject Development Plan for the School Development Plan. He/she has responsibility for the day to day maintenance of the science equipment in the resources area and for purchasing new equipment and materials in conjunction with class teachers to support science activities in school within the constraints of the budget. The co-ordinator will offer support and guidance to colleagues in planning science activities when requested and also monitor work throughout school including assessment and record keeping. In monitoring and evaluating the Science

curriculum the co-ordinator will analyse pupils' access to the subject, review teachers' plans, observe classroom practice and monitor levels of achievement.

Resources

Resources are located in the maths and science store cupboard. These are stored in labeled storage boxes / trays. It is the responsibility of the class teacher to ensure that all equipment is put away in an appropriate manner and is returned to the resource area in working order. Any breakages / damage to equipment should be reported to the Science Co-ordinator who will make arrangements for repairing or replacing as appropriate. We also have a developing wildlife garden which provide an invaluable resource for Science activities, especially for the study of Life and Living Processes. Where teachers identify a need for additional resources to support their science teaching, this should be reported to the science co-ordinator who will plan to obtain those resources within budget constraints.

Equal Opportunities

At Bolsover Infant and Nursery School all children are given full access to the National Curriculum. Staff will to help all children to reach their potential, irrespective of race, gender, age or ability. This includes those who have very special needs, and will require differentiation over and above that needed for all the other children in the class. As an inclusive school, we accommodate those needs by taking elements of the activity to be embarked upon and allowing the child to learn at his/her own level.

Special Educational Needs

In accordance with Special Needs Policy children with special educational needs are included in all lessons. Children of all abilities benefit from the study of science. We seek to choose initial stimuli which appeal to all. Provision is made for pupils with

special educational needs, where it affects their ability to take part in science lessons. They may have sensory difficulties, physical difficulties, cognitive limitations and / or emotional and behavioural disorders. It is the responsibility of the class teacher to ensure that any special equipment for a lesson is available to such children. If teachers need special equipment which is not currently available they must bring this to the attention of the science co-ordinator. We also take care to ensure that the children's ability in science is not limited by their ability to record what they are doing / have done. Opportunities are provided for children to record in different ways, e.g. in pictures, using talking tins, using an adult to scribe work for them.

More Able/Gifted and Talented Children

How we cater for pupils who are more able

More able children will be challenged and motivated by differentiated work given by the teacher appropriate to his or her needs. Teachers will also use questions that allow the more able child to maintain their involvement in the lesson and demonstrate their knowledge and abilities. Teachers will aim to identify those children who are more able in Science so that they are given the opportunity to explore and understand challenging concepts in science and many other areas of the curriculum.

Health and Safety

It is the duty of all staff (and, where relevant, non-employees such as parent helpers) to take reasonable care for the health and safety of themselves and others who may be affected by their errors or omissions. Class teachers take responsibility to plan safe activities in science. Safety issues are identified for all activities which form part of the science scheme of work and staff will ensure that these are followed.

Assessment and Record Keeping

Science work is assessed in line with the requirements of the Marking and Assessment Policy. On going teacher assessment has always been an integral part of good practice, its main purpose being to enable the teacher to match the task set to the abilities and needs of the pupils as they progress. Class Teachers use the end of Key Stage Level Descriptions to decide a child's level and these are handed into the science co-ordinator at the end of the year. The class teacher also reports to the science co-ordinator each term which children have not met the learning objectives and which children have exceeded them to ensure that these children can be tracked.