BURTON BRADSTOCK SCHOOL

Science Policy

At Burton Bradstock School we deliver a creative curriculum where subjects are taught within a whole school theme, called a Learning Quest, each term. This approach encourages our pupils to use their imagination and make links across topics and subjects thereby giving depth and breadth to their knowledge as well as the ability to learn and apply a range of skills in different contexts.

Introduction

"A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes."

National Curriculum 2014

Aims

Regardless of gender, ethnic origin or ability we specifically aim to ensure that all pupils:

- Gain the scientific experience to which they are entitled;
- Retain and develop their natural sense of curiosity about the world around them;
- Develop interest and enthusiasm for science;
- Develop skills, knowledge and understanding of science through:
    - Teaching appropriate scientific vocabulary;
    - Developing an understanding of the relevance of science in an everyday context;
    - Helping children to acquire a knowledge of a range of scientific concepts;
- Develop understanding through scientific investigation;
- Understand that scientific knowledge relies on evidence and that this evidence can be obtained in a variety of ways;
- Come to understand the nature of 'scientific method' involving: meticulous observation, the making and testing of hypotheses, the design of fair and

controlled experiments, the drawing of meaningful conclusions through critical reasoning and the evaluation of evidence;
- Be able to communicate their ideas, facts and data effectively;
- Be aware of health and safety issues;
- Develop their ICT capabilities;

Planning science

Long Term Planning
The school uses the National Curriculum Programme of Study, curriculum guidance for the Foundation Stage and Twinkl resources as the basis for the long term planning document. These are used creatively around the school's two-year rolling programme of Learning Quests.

Medium Term Planning
Using the objectives from the National Curriculum, teachers identify the learning objectives for each unit of work, matching possible teaching activities with learning outcomes and ensuring essential key objectives and skills are covered during each two-year programme.

Short Term Planning
This is done on a weekly basis referring to medium term plans.

Teaching styles and strategies

A range of styles of teaching are necessary for the teaching of science. Approaches need to be related to the topic itself and to the abilities and experience of both teachers and pupils.
Our teaching at all levels shall include opportunities for:
- Teacher exposition;
- Discussion (pupil/pupil and pupil/teacher) as appropriate;
- Class work, cooperative group work and individual work;
- First hand experience;
- Practical investigative and experimental work using questions, predictions, hypotheses, measurement, data, careful observation and interpretation of results into meaningful conclusions;
- Effective communication of methods, results and ideas in a variety of ways, e.g. diagrams, charts, models, graphs, pictures, verbal or written reports, etc.
- Consolidation and practice of fundamental skills and routines;
- Problem solving;
- The use of ICT;
- The committing to memory and recall of a range of scientific facts.

Cross-curricular links

Wherever possible, Science is linked to other areas of the curriculum. For example:

- English - reporting on experiments/information texts
- Maths - showing data results in graphs and measurements
- Music - vibration, tone and pitch
- ICT - using as a tool for research, data logging, simulating, data handling, to practise and reinforce skills
- PE - using exercise to show changes in the body and to investigate forces
- DT - using scientific knowledge to manufacture and refine projects

Home Learning

Home learning opportunities may be given in accordance with the Home Learning Policy.

ICT

Opportunities for using ICT available in the classroom and the school will be built into the planning, delivery and assessment of this subject. For example:

- Communicating information (word processing and graphics / drawing packages);
- Handling information (databases and spreadsheets);
- Modelling (simulations and spreadsheets). This is particularly useful with scientific concepts and processes that are impractical to carry out within the classroom;
- Data logging (sensors, spreadsheets and databases);

Assessment, Recording and Reporting

The learning outcomes in each unit show how children will demonstrate what they have learnt. Pupils are involved in actively evaluating their work and thinking about possible improvements. Photographs of the work can be taken as record of achievement as well as notes made by the teacher on individual children's development.

Attainment, Progress and Effort are reported annually in the end of year reports to parents/carers.

Equal opportunities

The teaching of science will be in accordance with the present policy for Equal Opportunities. We aim to provide equal access to science for both those children with Special Educational Needs and those pupils who are very able and require extension activities through small group work, modified and differentiated activities, peer support and the use of Classroom Assistants (depending on the task).

Health and safety

Consideration of health and safety issues is of the utmost importance in science, for example, through appropriate handling and storage of equipment and materials. During Science lessons, children are kept safe from danger by ensuring that all equipment is checked regularly and stored carefully.

The role of the science co-ordinator is to:

- Purchase, organise and maintain teaching resources so that they are readily available and accessible;
- Monitor planning, teaching and schemes of work to ensure progression and continuity in science throughout the school;
- Provide support for all who teach science and so improve the quality of science teaching and learning throughout the school by:
    - Encouraging and assisting in-service training if appropriate;
    - Keeping up-to-date in developments in science education by attending courses and feedback sessions organised by LA, Cluster groups, MAT or other colleagues and communicating information to colleagues as appropriate;
    - Providing guidance and support in implementing NC and schemes of work;
- Monitor progress in science learning and advise the Headteacher of action required to develop the subject;
- Encourage ways of involving parents in their children's learning.

The over-riding task must be to provide support for all who teach this subject and so improve the quality and continuity of Science teaching and learning throughout the school.