Burdett-Coutts & Townshend CE Primary School

Science Policy

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Distributed to Staff:
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Introduction

Primary science is essentially a practical way of finding out about the world in which we live. The teacher's role is to provide activities that will generate broad and varied experiences that can be woven into a coherent whole, over the years of a child's primary education.

We live in an increasingly scientific and technological age where children need to acquire the knowledge, skills and attitudes to prepare them for life in the 21st century.

We at Burdett-Coutts and Townshend Foundation CE Primary School believe that the teaching of science develops in children an interest and curiosity about the world in which they live, and fosters in them a respect for the environment.

Aims

1. To develop scientific skills and scientific processes such as observation and information gathering, asking questions, measuring, communicating conclusions, analysing and interpreting results.

2. To develop scientific processes of:
   - Fair testing
   - Hypothesising
   - Predicting
   - Planning
   - Recording
   - Interpreting

3. To foster positive attitudes that encourages the acquisition of knowledge and understanding of scientific concepts.

Science Policy

The school aims to:

- develop our children's knowledge and understanding of key scientific concepts and a positive attitude to science
- enable our children to develop the necessary skills to be able to carry out scientific investigations and solve scientific problems
- enable our children to appreciate that we do not always know the answers and results when carrying out scientific enquiry
- teach scientific enquiry through contexts taken from the National Curriculum for Science
- stress the need for personal and group safety by the correct usage and storage of resources
- encourage our children to treat the living and non-living environment with respect and sensitivity
- foster the cross-curricular links between science and other subjects

Objectives

Children should have the opportunity to:

- develop the skills of hypothesising, inferring, problem solving, modelling and analysing evidence
- develop the ability to design and carry out investigative work.
- develop their skills of co-operation through working with others, and to encourage where possible, ways for children to explore science in forms which are relevant and meaningful to them.
- acquire a relevant body of scientific knowledge in line with the National Curriculum

Science is a continuous process by which individuals develop an understanding of the physical and biological aspects of the world.

Primary Science

Primary science involves having ideas, collecting and handling evidence, and applying skills and ideas to new situations and problems. Primary science requires the designing of fair tests (which involve variables, controls and repetition for constants) to be understood and carried out. Therefore, in our school, we foster the curiosity of the children as they seek explanations.

We encourage the children to ask why things are the way they are and what happens when things are changed. They recognise that in Science there is an important place for imagination, inspirations and a receptive mind.

Children are encouraged to be open-minded and to try and make sense of what they see and find out. The main focus of our approach will be through open-ended activities where we encourage children to recognise the need for fair testing.

Our science teaching must develop in children a positive perception of the scientific enterprise, contributing to the image of science in society. We must therefore build science into the core of our planned activities, using it as a bridge between many subjects, making it contribute to a broad, balanced, relevant and enjoyable curriculum.

How we teach Science:

Working Scientifically

When working scientifically in our school we focus on three areas in the science curriculum, to ensure that all children:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them
- are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

By carefully examining the statutory requirements for Working Scientifically at Key Stage One, Lower Key Stage Two and Upper Key Stage Two, it is possible to create a list of generic science enquiry skills common to all children across the primary age phase:

Asking questions	Observing and measuring
Planning and setting up different types of enquiries	Identifying and classifying
Performing tests	Gathering and recording data
Using equipment	Reporting, presenting and communicating data

At Burdett-Coutts, we teach Science through themes and topics and wherever possible, these linked to other areas of the curriculum and form part of the whole school curriculum plan. Each topic has been linked to the National Curriculum to ensure that all strands are covered over a two-year period. There is opportunity to revisit at a higher level in successive years to allow for continuity

and progression. Children in year 5 and 6 should be given the opportunity to work at Greater Depth where appropriate.

At Key Stage 1, Science is taught for a minimum of 1 1/2 hours a week and at Key Stage 2 for a minimum of 2 hours a week. We aim for at least 50% of our work to be working scientifically.

Assessment and Record Keeping.

Assessment for learning is continuous throughout the planning, teaching and learning cycle. However, children are more formally assessed half termly in Key Stage 1 and Key Stage 2 using a variety of methods:

- Observing children at work, individually, in pairs, in groups and in classes
- Questioning, talking and listening to children
- Considering work/materials/investigations produced by children together with discussion about this with them
- End of unit assessment tests or assessments.

Assessment activities will be planned in relation to the learning objectives for each taught block in line with the school assessment policy. Appropriate samples will be kept to reflect GDS, EXS and WTS achievement. Assessment should reflect a balance between working scientifically, knowledge and understanding.

Equal Opportunities

At Burdett-Coutts Primary School we are committed to providing all children with an equal entitlement to scientific activities and opportunities regardless of race, gender, culture or class.

Inclusion

In school we aim to meet the needs of all our children by differentiation in our science planning and in providing a variety of approaches and tasks appropriate to ability levels. This will enable children with learning and/or physical difficulties to take an active part in scientific learning and practical activities and investigations and to achieve the goals they have been set.

Some children will require closer supervision and more adult support to allow them to progress whilst more able children will be extended through differentiated activities. By being given enhancing and enriching activities, more able children will be able to progress to a higher level of knowledge and understanding appropriate to their abilities.

Organisation of equipment and resources

General equipment can be found in the Science Resource area in the staffroom.
Resources are grouped to aid the teaching of each topic.

Health and Safety

It is vitally important when planning science activities to consider safety issues. Children must be aware of possible causes of accidents and should be encouraged to consider safety as an important part of their work.

Some common points to consider:

- Liquid or objects (peas, marbles etc.) spilt or dropped on the floor may cause falls.
- Children should not run about when carrying items that might break or have sharp points.
- Care should be taken when holding objects close to the eyes.
- Hands should always be washed after children have handled plants, animals or items like leaf litter.
- Some animals/plants cause allergies.
- Tasting should not be allowed unless under supervision.
- Cutting tools are dangerous. Children should be taught the correct techniques for using them.
- Household chemicals (baking powder, vinegar etc.) need careful handling. Pressure can cause chemicals to shoot out.
- Children with long hair should tie it back when working with flames.
- Children should not look directly at the sun, NOT even through dark glass.
- Alcohol thermometers should be used rather than mercury ones.
- Mains electricity should not be used by the children when doing experiments with electricity.
- Animals kept in school should be disease free. The care of animals at holiday times must be carefully planned.
- Wild animals, alive or dead, should not be brought into school.
- Mould that has been grown in school must be destroyed after it has been observed.

If you are unsure about an activity, please seek the advice of the science co-ordinator.