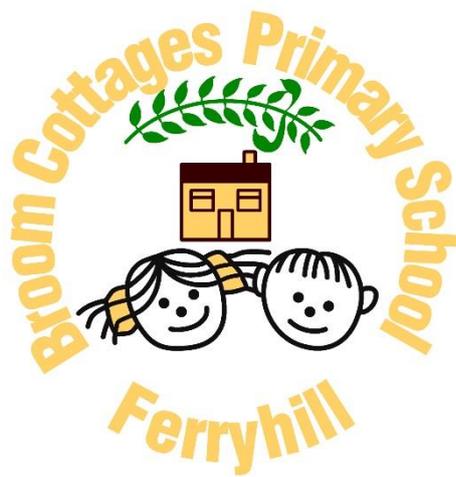


Broom Cottages Primary & Nursery School



Science Policy



Broom Cottages Primary School

Science Policy

Introduction

Science in our school is about developing children's ideas and ways of working that enable them to make sense of the world in which they live through investigation and using and applying process skills. This policy was updated in May 2015 by Stuart Shields and will be reviewed at least every two years in relation to existing school policies, national and LEA guidelines and curriculum orders.

What is Science?

Rationale

Science is a systematic investigation of the physical, chemical and biological aspects of the world which relies on first hand experiences and on other sources of information. The scientific process and pupils' problem-solving activities will be used to deepen their understanding of the concepts involved. The main aspects of science to be studied will be determined by the programmes of study of the revised National Curriculum and through these studies, the children of Broom Cottages will be facilitated in their bid to find reliable answers to questions we may ask about the world around us.

Through science in our school we aim to:

- Encourage the development of positive attitudes to science.
- Deliver the National Curriculum Science orders in ways that are imaginative, purposeful, well controlled and enjoyable, bearing in mind that the new curriculum will lead to further policy changes.
- Help in developing and extending the children's scientific concept of their world and encouraging them to ask deeper questions about the world around them.
- Deliver clear and accurate teacher explanations and skilful questioning. Providing guidance but at the same time allowing children the freedom to explore as independently as possible.
- Make strong, purposeful links between science and other subjects e.g. developing mathematical skills such as measuring and data handling in meaningful contexts and using a range of technology to extend their learning.
- Develop the use of scientific language, recording and techniques.
- Enable children to become effective communicators of scientific ideas, facts and data whilst becoming experts at analysing the data they collect.
- Develop the following skills of investigation – observation, measuring, predicting, hypothesising, experimenting, communicating and interpreting.

Teaching and Learning of Science

Content of the Curriculum

Science is important because: -

- It is a body of knowledge essential to our understanding of the world around us.
- The process of scientific investigation forms the basis of the most intellectual enquiry.
- The skills and knowledge of science have a wide application in everyday life.

Science is a core subject in the National Curriculum. The revised National Curriculum document provides a clear framework for teaching and exploring scientific concepts in a progressive manner through programmes of study written for each academic year group. However, within Key Stage 1, Lower Key Stage 2 and Upper Key Stage 2, there is a degree of flexibility and in the development of new long term plans, staff have used their professional discretion to ensure scientific concepts are taught at a time when meaningful links can be made to other curriculum areas. (See long term planning)

Reception classes are taught the required science elements of the foundation stage document through cross curricular themes.

In line with the New Curriculum, science teaching across the school will change in terms of topics taught and expected skills to be mastered at each stage. During this second year of teaching the revised National Curriculum, we will be reviewing all long and medium term plans across the school before the end of the academic year.

Planning and delivery

Planning in science is a process in which all teachers are involved to ensure that the school delivers full coverage of the revised National Curriculum and Foundation stage. The topics set out provide a vehicle to deliver the Science Curriculum and ensure that the programme of study is covered. It ensures progression between year groups and guarantees topics are revisited. Teachers are expected to adapt and modify plans to meet the needs of their pupils; to suit their own teaching; to take into account the use of any support staff and the resources available.

- KS2, KS1 and Foundation stage teachers should be teaching science for a minimum of two hours each week or equivalent pro rata.
- Teachers should try to make cross-curricular links wherever possible.
- In KS2 a minimum of 50% of lessons should include practical Scientific Investigation.
- In KS 1/ Foundation stage a minimum of one third of lessons in each half term should include practical Scientific Investigation.

The science curriculum is delivered through co-operative group work, individual work, and whole class teaching.

Within this structure there will be: -

- Whole class and group discussions and presentations.
- Demonstrations, explanations and instruction by teachers to groups, individuals and the whole class as well as child-led when possible.
- Practical activities to advance and consolidate knowledge and skills.
- Problem solving and investigation tasks.

The use of technology in Science

- The provision for the use of technology in science at Broom Cottages is good and all teachers are encouraged to make use of the resources available to them in their teaching. The children are given the opportunity to research, plan, predict, test and improve their ideas using relevant computing resources to improve understanding, aid communication and enhance presentation.
- Recently there has been a change of emphasis in Science curriculum and assessment shifting towards more investigative approach to science.
- This involves more tasks involving interpreting and analysing results, which can be supported and developed by the use of I.C.T.
- **Espresso and Virtual Experiments**
 - This is a whole school resource, provided for a substantial subscription to the school.
 - It includes I.C.T. linked science resources, both to aid planning and teaching and in the form of virtual experiments and short video clips to enhance children's learning.

Assessment

Assessment in science is an ongoing process with staff using Class Track to make formative judgements against clear objectives drawn from the National Curriculum. The online software includes a report feature which supports staff in making summative judgements which are then entered into OTrack. Since the removal of levels, staff will be expected to say whether their pupils are Emerging, Emerging +, Developing, Developing +, Secure, Secure + or at a Mastery standard within the programmes of study they are being taught. These outcomes will be reported to parents verbally in the autumn and spring term and as part of a written report towards the end of the summer term.

Reporting in science focuses on each child's:

- Attitude towards science
- Progress in the ability to investigate scientifically, including understanding of the nature of scientific method.
- Depth of scientific knowledge achieved.

The formal assessment of Science at Broom Cottages at the end of KS1 and KS2 will take place in line with the national statutory requirements.

Management and Development

Co-ordination

Science education throughout the school is led by the Science Co-ordinator. The role of the Co-ordinator entails managing the science budget, updating and monitoring school resources and giving support to colleagues as appropriate. The Science Co-ordinator, when appropriate, can be expected to lead meetings and discussions related to science issues, e.g. CPD, monitoring, work scrutiny etc.

Moderation and Monitoring

At Broom Cottages we are going to move towards moderating and monitoring science as a part of our self-evaluation approach to maintaining standards and supporting staff in their teaching. This will be timetabled every **half term**.

Moderation

Science moderation involves analysis of children's work in relation to the clear objectives presented in the science programmes of study and presented in Class Track and OTrack. Science moderation achieves the following.

- Evidence of learning outcomes;
- A curriculum which is designed to promote progress;
- Quality feedback and assessment to promote progress in science for all pupils regardless of age, stage or SEN;
- Understanding and agreeing on summative judgements to be entered into the central assessment system.

Monitoring

Monitoring of science teaching will be carried out through a program of lesson observations by the Science Co-ordinator alongside Phase Leaders and SMT staff where appropriate. The objective of the monitoring is to ensure science is being taught well across the school. Observations focus primarily on the effective communication of scientific knowledge and the quality of investigative work. If requested specific areas, for example use of support staff, Working Scientifically, the use of ICT, maybe agreed on as the focus in advance of the lesson. Following an observation the class teacher will receive feedback and a copy of the observation notes.

Science monitoring achieves the following:

- The science co-ordinator gains insight into the nature of science teaching across the school.
- It gives class teachers the opportunity to review their own practice and discuss teaching science with a subject specialist.
- It gives the science co-ordinator an insight in to areas of strengths, enabling good practice to be shared among colleagues.
- It allows resources to audited and for the assessment of current and future resource requirements.
- It allows the science co-ordinator to set targets, demonstrating the schools commitment to self-evaluation and improvement of standards in science.

Resources

- The vast majority of resources are stored centrally in the cupboard at the back of Class 6SH.
- Teachers need to collect their resources as they need them and ensure they return them to where they came from.
- Staff should notify the co-ordinator of any extra resources required, of any breakages or losses that occur and of any new materials that might prove useful.
- Unsupervised children should not be allowed to collect resources.

Environmental Awareness

At Broom Cottages, we realise the importance of teaching our pupils to care for the environment. We are fortunate enough to have extensive grounds which can be used to promote this agenda and the oldest children in school focus specifically on their impact on the environment through a themed study entitled: If Mother Nature Could Speak.

Equal Opportunities

At Broom Cottages we work to ensure that all children have the opportunity to gain scientific knowledge and understanding regardless of gender, race, class, physical or intellectual ability. We will ensure that expectations do not limit pupils' achievements and that assessments do not involve any cultural, social, linguistic or gender bias.

Health and Safety

- The teacher should be clear as to the purpose of the work and ensure that any testing that needs to be carried out complies with the Health and Safety procedures and has been practised prior to the lesson.
- Safety hazards should be pointed out to the children at the beginning of any work.
- Sets of Risk Assessment Hazard cards **will be acquired** and kept in the science resource cupboard.
- The co-ordinator will investigate the possibility of the school becoming a member of A.S.E.

Review Date

The Broom Cottages Primary School science policy is to be reviewed at least every two years by the Science Co-ordinator, Phase Leaders and SLT.

- Next review May 2017.