

Science Policy

Our Vision

At Bournes Green Infant School the governors, staff, children, parents and carers work together in an atmosphere of mutual respect and trust in a community that is strengthened and enriched by a diversity of background, culture and religion. Our priority is to foster the self-confidence, self-esteem and independence of *all* in a climate of growth and opportunity that will enable us to achieve the highest standards. We actively promote a healthy environment in which children enjoy learning and develop the skills needed to become responsible members of society. We aim to bring learning to life.

'**Strength Through Wisdom**' was the original mission statement for our school. Today we nurture our children to be confident and articulate with an enjoyment of learning in the belief that this will enable them to gain strength from their developing wisdom.

Documentation to be read in conjunction with our DDA scheme, Equal Opportunities Policy and accessibility plans, Teaching and Learning, SEN, Early Years, Academically More Able and curriculum.

Key Principles

Aims

- To encourage all children to enjoy science and work with confidence and a sense of achievement
- To use a variety of learning styles and resources to ensure that we cater for all our children
- To challenge all children to achieve a high standard in Science
- To develop scientific knowledge and conceptual understanding of important scientific ideas, processes and skills and relate these to everyday experiences
- To plan and carry out scientific investigations using equipment correctly, including computers
- To learn about ways of thinking, finding out about and communicating ideas
- To evaluate evidence and present their conclusions clearly and accurately
- To build a specialist vocabulary
- To develop understanding of the nature, processes and methods of science through practical activity

Organisation

Science teaches an understanding of natural phenomena. We aim to stimulate a child's curiosity in finding out why things happen in the way they do. We use 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.

Science is taught creatively with a cross curricular approach and many links are made with other subjects. Staff will often present a problem solving context, where children are involved in developing a question to be investigated, using their enquiry skills.

Knowledge and Understanding

We encourage children to:

- Be curious about things they observe and experience and to use their senses to explore the world around them
- Develop their understanding of key scientific ideas and make links between different phenomena and experiences
- Try to make sense of phenomena, seeking explanations and thinking critically about claims and ideas

Processes and Skills

We encourage children to:

- Acquire and refine the practical skills needed to investigate questions accurately and safely
- Develop skills of predicting, questioning, inferring, concluding and evaluating based on evidence and understanding through investigative work
- Practise mathematical skills *e.g. counting, ordering numbers, measuring, drawing and interpreting graphs and bar charts* in real contexts
- Learn why numerical and mathematical skills are useful and helpful to understanding

Language and Communication

We encourage children to:

- Think creatively about Science and enjoy trying to make sense of phenomena
- Develop language skills through talking about their work and presenting their own ideas in different ways
- Use scientific and mathematical vocabulary, diagrams and charts to communicate scientific ideas
- Use a variety of strategies to organise their thinking and link scientific ideas

- Use a variety of sources to gain information

Values and attitudes

We encourage children to:

- Work with others, listening to their ideas and treating these with respect
- Evaluate ideas which may or may not fit evidence available
- Develop a respect for the environment, living things and for their own health and safety

The role of the head teacher is to:

- Remain well informed, provide active leadership and set high expectations for what can be achieved by staff and children
- Make sure there is systematic monitoring and self review of planning, teaching, assessment, learning outcomes and children's work

The role of the Science leader is to:

- Take the lead in policy development and the production of schemes of work, designed to ensure progression and continuity in Science throughout the school
- Support colleagues in their development of detailed plans, their implementation of the schemes of work and in assessment
- Monitor progress in Science, through observations (photos and copies of work may be taken)
- Take responsibility for the purchase and organisation of central resources for Science
- Share expertise and keep up to date with developments in Science and disseminate information to colleagues as appropriate
- Liaise collaboratively with SECAT members.

The role of the teacher is to:

- Have a knowledge of Science within the Primary National Curriculum and the Early Years Foundation Stage (EYFS) and use appropriate teaching methods
- Secure high standards and set clear targets through effective teaching and learning throughout the whole school
- Provide differentiated resources for each task, with extension activities for the more able and support for the less able
- Make sure appropriate tools and equipment are provided to ensure that all children have sufficient access to the Science Curriculum

The role of the teaching assistant is to:

- Assist individuals or groups of children using scientific equipment
- Reinforce teaching points as well as key language
- Assist individuals or groups through encouragement and by promoting discussion
- Assist children with differentiated work, especially those with provision maps
- Work with groups on differentiated work across the ability range

The role of the Science governor is to:

- Meet at least annually with the Science leader to discuss the development of Science within the school
- To be involved with formatting a policy, monitoring and evaluation

Planning

Planning is produced in line with the National Curriculum and EYFS. Teachers work in year groups to produce cross curricular plans. Our Reception children are introduced to Science as they develop their understanding of the world with an emphasis on learning through play.

The teaching programme at Foundation Stage and Key Stage 1 is based on identified learning objectives and is planned thoroughly to ensure high expectations, consistent approaches and good progression throughout the school. We plan to teach skills needed for children to engage in and lead investigative work.

Lessons are planned so that all children can be included.

Assessment

Formative assessment is used to guide the progress of individual children in Science. It involves identifying each child's progress in each area of the Science curriculum, determining what each child has learned and what therefore should be the next stage in his/her learning. Assessment is carried out through the evaluation of work and discussion. Formal Assessment is carried out at the end of Key Stage 1 (i.e. in Year 2) through the use of teacher assessment.

Reporting

Parents will be informed about their child's progress annually through a written report or as necessary. Feedback to children about their own progress in Science is achieved through general praise, marking and discussion between teacher and child.

Equal Opportunities

All children in school will have full access to Science in our curriculum as appropriate. This will be achieved by having the flexibility to make any changes necessary, in order to meet the specific needs of individuals. Children with particular difficulties will receive extra support from a teaching assistant.

Gender issues will be kept in mind when teachers consider the contexts in which skills will be developed.

We will make use of opportunities to build upon the diverse backgrounds of all children in the classroom, for example in Literacy using stories from different cultures to introduce a Science topic.

Special Educational Needs

All children benefit from the emphasis on oral and experimental work and they have the opportunity to watch and listen to their peers demonstrating and explaining their ideas. However some classes may have children whose progress warrants special consideration. After consultation with the Inclusion Manager, the class teachers may wish to consider if the particular Science lesson is the most appropriate way for the child to spend his/her time. In this situation the child's provision map will form the basis of their work.

English as an Additional Language (EAL)

We support our EAL children in a variety of ways in Science. Whole class sessions provide helpful models of spoken English and opportunities for careful listening, oral exchange and supportive shared repetition. Group work provides opportunities for intensive, focussed teaching input. We repeat instructions for EAL children when necessary and emphasise key words. Some language may need careful explaining (may happen prior to lesson) and visual prompts may be used. All KS1 classrooms have a Science vocabulary display for the current topic.

Excellence in Science

Children who excel in Science will be identified and added to the Academically More Able register.

Resources

We have in school a wide range of equipment and materials which are stored in a central area. More frequently used resources are stored in classrooms.

Health and Safety issues in Science

Class teachers are responsible for the safety of the staff, children and voluntary helpers within their work area. It is important that teachers ensure that children are effectively supervised at all times. Parent helpers should be informed of the health and safety issues concerning the use of equipment.

It is important to teach skills correctly and always insist upon good practice. Children are always given a demonstration of how to use equipment safely, prior to beginning their work. Reminders on how to be safe are given throughout the lesson and particularly to children with individual care plans.

Computing

Children are given opportunities, where appropriate, to develop and apply their ICT skills in Science. This may be through the use of data handling software when they produce graphs and tables, collect and classify data and interpret and explain their results.

Review

This Policy was revised by staff, reviewed and approved by the Governing Body in Autumn 2017.

It will be reviewed in accordance with the Policies and Key Documentation Review Timetable.