

# Blanford Mere Nursery & Primary School



## Science Policy

<b>Date adopted by governors</b>
February 2021
<b>To be reviewed</b>
February 2024

# SCIENCE POLICY

**Article 13:** *You have the right to find out things and share what you think with others, by talking, drawing and writing or in any other way unless it harms or offends other people.*

**Article 17:** *You have the right to get information that is important to your well-being, from radio, newspaper, books, computers and other sources. Adults should make sure that the information you are getting is not harmful, and help you find and understand the information you need.*

**Article 24:** *You have the right to the best health care possible, safe water to drink, nutritious food, a clean and safe environment, and information to help you stay well.*

**Article 28:** *You have the right to a good quality education.*

**Article 29:** *Your education should help you use and develop your talents and abilities. It should also help you learn to live peacefully, protect the environment and respect other people.*

Every Child Is Born a Scientist ... it's our duty to foster that wonder and enthusiasm so it remains with them.

## OUR VISION FOR SCIENCE TEACHING AND LEARNING

Science at Blanford Mere is fun, engaging and builds on the children's natural curiosity. We want our children to develop a thirst for scientific knowledge and understanding to enable them to make sense of the world in which they live, where they will want to explore new things.

Science is all around us. It is of fundamental importance that children develop an enquiring and creative mind to be able to recognise how science has changed our lives and that it is vital to the World's future.

By promoting and nurturing their inquisitive minds, we will encourage our children to build a positive attitude towards science. Through rich experiences, challenging questions and practical investigations, we will deepen their knowledge and strive to create scientists for the future.

The following Principles have been developed with contributions from our children, teachers and governors.

### Principles of Good Science Teaching and Learning

At Blanford Mere, this is what our children, teachers and governors have agreed are the essential features of great science teaching and learning and will be included in our science lessons.

#### **'Science teaching at our school is good when...'**

The children are engaged and curious and say 'Wow!'

Children have fun and tell you it was fun because the teacher is enthusiastic too.

Teachers ask challenging questions to deepen the children's knowledge and understanding.

A range of approaches and resources are used to engage learners.

Practical work is balanced with written work to show learning.

Children talk about their learning using scientific vocabulary to explain why something happens, not just what happens.

Teachers promote inquisitive thinking to encourage children to learn independently outside of school.

Science is linked with everyday life.

Children challenge their own learning.

### **AIMS FOR THE TEACHING OF SCIENCE**

- Ensure that teachers meet their statutory obligations with regards to the teaching of science.
- To raise science standards by promoting a high standard of excellence and consistency of approach amongst all staff.
- Prepare our children for life in an increasingly scientific and technological world.
- Foster concern about, and active care for, our environment.
- Help our children acquire a growing understanding of scientific ideas.
- Help develop and extend our children's scientific concept of their world.
- Develop our children's understanding of the collaborative nature of science.
- Developing links between what children learn in the classroom and the world outside the classroom.

### **Attitudes:**

- Encourage the development of positive attitudes to science as an interesting and exciting part of the curriculum.
- Building on our children's natural curiosity, in finding out why things happen in the way they do and developing a scientific approach to problems.
- Encouraging open-mindedness, perseverance and responsibility.
- Building our children's self-confidence, sense of achievement and to enable them to work independently.
- Developing our children's social skills to work co-operatively with others.
- Providing our children with an enjoyable experience of science so that they will develop a deep and lasting interest and may be motivated to study science further.
- Appreciate the way science will affect their future on a personal, national, and global level.

### **Skills:**

- Giving our children an understanding of scientific processes.
- Helping our children to acquire practical scientific skills.
- ask and answer scientific questions;
- plan and carry out scientific investigations, using equipment correctly;
- Developing the skills of investigation - including observing, measuring, predicting, hypothesising, experimenting, communicating, interpreting, explaining and evaluating, presenting their conclusions clearly and accurately.
- Developing the use of scientific language, recording and techniques.
- Enabling our children to become effective communicators of scientific ideas, facts and data.

### **Knowledge and Understanding:**

Children should:

- Be curious about things they observe, experience and explore the world about them with all of their senses.
- Use this experience to develop their understanding of key scientific ideas and make links between different phenomena and experiences.
- Begin to think about models to represent things they cannot directly experience.
- Try to make sense of phenomena, seeking explanations and thinking critically about claims and ideas.
- Know and understand "Animals including humans", "Plants" and "Living things and their habitats"
- Know and understand "Everyday materials" and "Uses of everyday materials"
- Know and understand "Electricity", "Forces and magnets", "Forces", "Light", "Sound" and "Earth and space"

### **Language:**

- Teachers need to be aware and use the correct scientific vocabulary at all times. Children need to be encouraged to understand and use the appropriate terminology. Key vocabulary should be shared with children at the start of a new topic and used throughout.

### **TEACHING AND LEARNING**

National Curriculum 2014 Science is taught from Reception to Year 6 weekly - discretely or supported and enhanced through other curriculum areas by linking to topics. In Foundation stage, science is taught through Knowledge and Understanding of the World which begins to develop children's awareness of Scientific understanding and investigation.

As many children are taught in mixed year groups, a 2-year rolling programme (Cycle A & Cycle B) is implemented in Key Stage 2. This allows progression and continuity, ensuring that new learning takes place and all the programmes of study have been addressed by the time the children have reached the end of the Key Stage.

### **Recording of work:**

Science work is largely recorded in designated exercise books and Learning Journeys for Reception. Children have opportunities to present information in a variety of ways including drawings, diagrams, tables and charts, in speech and writing. They will be able to use standard units of measure including graphs to record and present information.

### **Progression and Differentiation:**

Activities and tasks are designed to follow through a planned scheme of work that allows children to develop concepts and to progress according to their ability. Activities are differentiated to match specific ability groups as necessary, providing appropriate challenge for all.

***“Working Scientifically”*** in both key stages has a focus on practical, hands-on science. This is an integral part of science learning. This is delivered and known as **‘Science Enquiry types’**. Intended outcomes are that:

- Working Scientifically will incorporate: classification; observing over time; pattern seeking; fair tests; research

This will be taught through...

- “Animals including humans”, “Plants” and “Living things and their habitats”
- “Everyday materials” and “Uses of everyday materials”
- “Electricity”, “Forces and magnets”, “Forces”, “Light”, “Sound” and “Earth and Space” (as was Physical processes)

### **RESOURCES**

- The science equipment is stored centrally in the Stock Room and should be returned there when not in use. New stocks of consumables are re-ordered by the science co-ordinator. All staff are encouraged to make their resource needs known by completing the Stock Request Sheet on display.
- Children are taught to work with due care and attention, learning to use and look after equipment safely and effectively. Any losses or damaged equipment should be reported to the science co-ordinator.

### **COMPUTING (IT)**

- Children are given the opportunity to use Computing as a means of handling data, presenting information generated by scientific investigations and for carrying out individual research.
- Staff have access to numerous websites and software installed on DGfL to support their planning, teaching and learning including resources etc accessed through the shared area.

### **EVALUATION**

The science policy of the school is reflected in our practice. This is monitored by the Science Coordinator and is reviewed by the Staff, the Head teacher, Governors and Science Coordinator.

## **ROLE OF THE SCIENCE CO-ORDINATOR**

- Support colleagues in their implementation of the National curriculum.
- Support and advise colleagues with subject knowledge
- Take responsibility for the purchase and organisation of central resources.
- Monitor the planning and teaching of Science within the school and provide feedback to teachers.
- Take appropriate steps to keep up-to-date with developments and pass on information to colleagues as appropriate.
- Complete book trawls.
- Ensure new members of staff understand how science is taught at our school.
- Provide training for staff where required to ensure good quality science teaching remains through the school.

## **ASSESSMENT**

Assessment of a child's progress and understanding takes place in a number of ways.

- End of Unit tests are completed by the children. Teachers mark and grade them in-line with our DIG assessment system.
- Investigation work gives an ideal opportunity for the teacher to assess achievement in an informal way.
- Evidence of children's work may be kept in the form of teacher's notes, children's drawings, plans, photographs, construction models, writing etc.
- Feedback to pupils about the progress in science is achieved through verbal feedback and written comments when marking of work.
- The science subject leader keeps samples of children's work in a Coordinator's File and uses these to demonstrate what the expected level of achievement is in science for each ability group in the school.
- Science Star of the Week trophies and Lanyards are presented to the children to reflect achievement.

## **EQUAL OPPORTUNITIES & INCLUSION**

At Blanford Mere we endeavour to offer a broad and balanced curriculum for all pupils to achieve, including boys and girls, pupils with SEN, pupils with disabilities, Pupil Premium children, higher attainers including Gifted and Talented children, pupils from all social and cultural backgrounds, children who are in care and those subject to safeguarding, pupils from different ethnic groups and those from diverse linguistic backgrounds.

## **HEALTHY AND SAFETY**

It is important that care should be taken at all times when carrying out investigations. The classroom should be well organised and children should be guided to work safely and sensitively (especially in the study of Life and Living Processes). Reference should be made to <http://www.ase.org.uk/resources/health-and-safety-resources/health-and-safety-primary-science/> if advice is needed.

## **CURRICULUM LINKS IN SCIENCE**

- In general teachers can draw links to the science topic they are teaching to practically all areas of the curriculum. Eg. Forces & PE; Sound & Music; observations & Art
- English- Science contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. The children develop oral skills in science lessons through discussions and through recounting their observations of scientific experiments. They develop their writing skills through writing reports, projects and by recording information, using bullet points and diagrams as they would with explanation texts.
- Mathematics- Measuring, data handling, weighing and capacity all fall into this category and staff are able to use these areas to reinforce the children's knowledge. Eg The children use weights and measures and learn to use and apply number. Through working on investigations they learn to estimate and predict. They develop the skills of accurate observation and recording of events. They use numbers in many of their answers and conclusions.

- Computing- It is our intention to use I.C.T. as a natural extension of, and support for, science in order to handle and manipulate the information gained during lessons, research etc See above.
- Personal, social and health education (PSHE) and citizenship/ Rights Respecting Schools- Science makes a significant contribution to the teaching of personal, social and health education. This is mainly in two areas. Firstly, the subject matter lends itself to raising matters of citizenship and social welfare. For example, children study the way people recycle material and how environments are changed for better or worse. Secondly, children benefit from the nature of the subject in that it gives them opportunities to take part in discussions. Science promotes the concept of positive citizenship.
- Spiritual, moral, social and cultural development- Science teaching offers children many opportunities to examine some of the fundamental questions in life, for example, the evolution of living things and how the world was created. Through many of the amazing processes that affect living things, children develop a sense of awe and wonder regarding the nature of our world. Science raises many social and moral questions. Through the teaching of science, children have the opportunity to discuss, for example, the effects of smoking and the moral questions involved in this issue. We give them the chance to reflect on the way people care for the planet and how science can contribute to the way we manage the earth's resources. Science teaches children about the reasons why people are different and, by developing the children's knowledge and understanding of physical and environmental factors, it promotes respect for other people.
- Citizenship/ Rights Respecting Schools- Moral and social values are taught throughout Science continually. All concepts taught are easily related to every day experiences giving the work a true context. Children are expected to respect others opinions and values as well as being able to contribute themselves. This should enable them to carry on this good practice in adult life.

## REMOTE LEARNING

Remote learning for Science will be shared with families when they are absent due to the Covid related reasons.

Remote learning will not be available to those who are ill with a non-Covid related illness and would not normally attend school, or to those children whose parents choose to keep them at home when they have not been advised to do so. This is because children need to be in school and, in line with Government guidance, the school will strongly promote face-to-face contact through school attendance.

Work will NOT be set on the first day of isolation to allow staff time to prepare. Work will be sent from the second day onwards. Staff will prepare work the day before it is set and will ensure that it is published the following morning.

- A child who has a member of their household, who has tested positive for Covid-19 and are not permitted to attend school because they have been in close contact and have been advised to self-isolate;
- A child's whole bubble or identified pupils who is not permitted to attend school because they, or another member of their bubble, have tested positive for Covid-19.
- A child unable to attend school due to a local or national lockdown

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