

# ST JOHN THE BAPTIST C OF E PRIMARY SCHOOL



*Life in all its fullness*

## **Science Policy September 2021**

- A Christian school, where every child is encouraged on their journey of faith
- A creative, inspiring school
- A place to practice 'People Skills' to prepare us to become good citizens
- An exciting, quality environment
- A happy, healthy, safe place to learn how to look after our bodies and minds
- An inclusive place that nurtures children's individual talents
- A school that enables us to develop our character

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**SCIENCE POLICY**

**1 Aims and objectives**

**1.1** Science teaches an understanding of natural phenomena. It aims to stimulate a child's curiosity in finding out why things happen in the way they do. It teaches 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.

**1.2** The aims of science are to enable children to:

- Ask and answer scientific questions.
- Plan and carry out scientific investigations, using equipment, including computers, correctly and safely.
- Know and understand the life processes of living things.
- Know and understand the physical processes of materials, electricity, light, sound and natural forces.
- Know about the nature of the solar system including the earth.
- Evaluate, evidence and present their conclusions clearly and accurately.
- Apply our Christian values of: Wisdom, Resilience, Self discipline, Thankfulness and Hope.

**2 Teaching and learning style**

**2.1** We use a variety of teaching and learning styles in science lessons. Our principal aim is to develop children's knowledge, skills and understanding. Sometimes we do this through whole-class teaching while at other times we engage the children in an enquiry based research activity. We encourage the children to ask, as well as answer, scientific questions. They have the opportunity to use a variety of data such as statistics, graphs, pictures and photographs. They use ICT in science lessons where it enhances their learning. They take part in role play and discussions and they present reports to the rest of the class. They engage in a wide variety of problem solving activities. Wherever possible, we involve pupils in 'real' scientific activities for example researching a local environmental problem or carrying out a practical experiment and analysing the results. The children will also be offered out of school visits and outside providers when available and appropriate. The links and opportunities offered by our family Secondary Academy are also utilised when possible.

**2.2** We recognise that there are children of widely different scientific abilities in all classes and we ensure that we provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this in a variety of ways by:

- Setting common tasks which are open-ended and can have a variety of responses.
- Setting tasks of increasing difficulty (we do not expect all children to complete all tasks).
- Grouping children by ability in the room and setting different tasks for each ability group.
- Providing resources of different complexity matched to the ability of the child.
- Using classroom assistants to support the work of individual children or groups of children.

### **3 Science curriculum planning**

**3.1** The school uses the 2014 National Curriculum for science as the basis of its curriculum planning adapting it to the needs of our pupils. Teachers do, however, make links where appropriate to other subjects.

**3.2** We carry out our curriculum planning in science in three phases (long term, medium term and short term). The long term plan maps the scientific topics studied in each term during the key stage. In some cases, we combine the scientific study with work in other subject areas, especially at Key Stage 1; at other times the children study science as a discrete subject.

**3.3** Our medium term plans, which we have based on the 2014 National Curriculum topics in science, give details of each unit of work for each term. The science subject leader keeps and reviews these plans. In this way, we ensure complete coverage of the National Curriculum.

**3.4** The class teacher is responsible for writing the daily lesson plans for each lesson (short term plans). These plans list the specific learning objectives of each lesson. The class teacher keeps these individual plans and s/he and the science subject leader discuss them on an informal basis.

**3.5** We have planned the topics in science so that they build upon prior learning. We ensure that there are opportunities for children of all abilities to develop their skills and knowledge in each unit and we also build progression into the science scheme of work, so that the children are increasingly challenged as they move up through the school.

## **4 Foundation stage**

- 4.1** We teach science in the Foundation stage as an integral part of the topic work covered during the year. We relate the scientific aspects of the children's work to the objectives set out in the EYFS which underpin the curriculum planning for children aged three to five. Science makes a significant contribution to the objectives in the EYFS of developing a child's knowledge and understanding of the world e.g. through investigating what floats and what sinks when placed in water.

## **5 The contribution of science to teaching in other curriculum areas**

### **5.1 English**

Science contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. Some of the texts that the children study in the Literacy Hour are of a scientific nature. The children develop oral skills in science lessons through discussions (for example of the environment) and through recounting their observations of scientific experiments. They develop their writing skills through writing reports, instructions and projects and by recording information.

### **5.2 Mathematics**

Science contributes to the teaching of mathematics in a number of ways. 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 use data handling skills to draw and present results and conclusions.

### **5.3 Information and communication technology (ICT)**

Children use ICT in science lessons where appropriate. They use it to support their work in science by learning how to find, select and analyse information on the Internet. Children use ICT to record, present and interpret data and to review, modify and evaluate their work and improve its presentation. They may also use email to communicate their mathematical findings with other children in other schools and countries.

#### **5.4 Personal, social and health education (PSHE) and citizenship (People Skills)**

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 debates and discussions. They organise campaigns on matters of concern to them, such as helping the poor or homeless. Science promotes the concept of positive citizenship. Through experimentation and group work leadership, communication and team skills are developed. Knowledge about how the human body works is also a significant part of the science curriculum and links to the health aspects of P.H.S.E. There are also direct links to RSE and on line safety.

#### **5.5 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 environmental factors, it promotes respect for other people.

#### **5.6 Christian Distinctiveness**

Through all our school subjects, including science as a church school, we seek to develop links to Christian understanding of God. This is not to indoctrinate but to bring an understanding of the deep spirituality felt by Christians and how Christianity can interact with a variety of areas of life.

### **6 Teaching science to children with special educational needs**

**6.1** At our school, we teach science to all children, whatever their ability. Science forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our science teaching we provide learning opportunities that enable all pupils to make progress. We do this by setting

suitable learning challenges and responding to each child's different needs. Assessment against the National Curriculum allows us to consider each child's attainment and progress against expected levels.

- 6.2 When progress falls significantly outside the expected range, the child may have special educational needs. Our assessment process looks at a range of factors – classroom organisation, teaching materials, teaching style, differentiation – so that we can take some additional or different action to enable the child to learn more effectively. This ensures that our teaching is matched to the child's needs.
- 6.3 Intervention through the SEND process will lead to the creation of an Individual Education Plan (IEP) for children with special educational needs. The IEP may include, as appropriate, specific targets relating to science.
- 6.4 We enable pupils to have access to the full range of activities involved in learning science. Where children are to participate in activities outside the classroom, for example, a trip to a science museum, we carry out a risk assessment prior to the activity to ensure that the activity is safe and appropriate for all pupils.

## **7 Assessment and recording**

- 7.1 We assess children's work in science by making informal judgements as we observe them during lessons. On completion of a piece of work, the teacher marks the work and comments as necessary in accordance with the school marking policy. At the end of a term of work, s/he makes a summary judgement about the work of each pupil. This is combined with specific scientific investigation used for assessment against National Curriculum age expected levels. We use these results to inform future planning and as the basis for assessing the progress of each child. We pass this information on to the next teacher at the end of the year.
- 7.2 Teachers make an assessment of the children's work in science at the end of each Key Stage. We report teacher assessments which we make whilst observing the work of children throughout the year to parents at the end of the year.
- 7.3 We have a system of assessment which tests both skills and knowledge which is carried out at the end of each term and the results are recorded on line.

## **8 Resources**

- 8.1** We have 2 central store containing well labelled shared resources. There are restocked as equipment needs replacing or updating. Children and staff also have access to the internet for research purposes.

## **9 Monitoring and review**

- 9.1** It is the responsibility of the science subject leader to monitor the standards of children's work and the quality of teaching in science. The science subject leader is also responsible for supporting colleagues in the teaching of science, for being informed about current developments in the subject and for providing a strategic lead and direction for the subject in the school. The science subject leader gives the head teacher an annual summary report in which s/he evaluates strengths and weaknesses in the subject and indicates areas for further improvement. This information will then be used to inform school development planning. The science subject leader has specially allocated time for fulfilling the vital task of reviewing samples of children's work and visiting classes to observe teaching in the subject.

Reviewed: September 2021

Review: September 2023

Reviewed by Staff: P Collins

Reviewed by Governor: J Jackson