



# **We Follow Christ's Footsteps in Love**

## ***Science Policy 2019***

### ***St. Joseph's Infant and Junior Schools***

# **Science Policy Statement**

## **Philosophy:**

We believe that every child in our school has the right to as high a level of achievement as possible in Science. We recognise Science as a core subject and that scientific skills and knowledge are of fundamental importance within the curriculum of this school.

## **Purposes:**

1. To deliver the Programmes of Study for Key Stage One and Two of the National Curriculum in Science and to achieve the Knowledge and Understanding of the World aspects of the Early Years Foundation Stage Curriculum, regardless of gender, race, socio-economic background special educational needs or disability.
2. Our Science Policy follows The National Curriculum 2014 Science Guidelines and aims to ensure that all pupils:
  - 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 in the future.
3. To help children enjoy Science and to modify their ideas in the light of experience.
4. To promote key skills through science such as communication, application of number, computing, working with others and independently, improving own learning and performance and problem solving.
5. To provide opportunities for every child to build on and develop his or her experience, skills and ideas.
6. To ensure that children achieve their full potential in science.
7. To provide opportunities for children to express themselves clearly in both speech and writing.

8. To promote pupils' spiritual, moral, social and cultural development through science.

### **Outcomes**

1. In teaching Science, we are developing in our children:
  - A positive attitude towards Science and an awareness of its fascination;
  - An understanding of Science through a process of enquiry and investigation;
  - Confidence and competence in scientific knowledge, concepts and skills;
  - An ability to reason, predict, think logically and to work systematically and accurately;
  - An ability to communicate scientifically;
  - The initiative to work both independently and in co-operation with others;
  - The ability and understanding to use and apply science across the curriculum and real life.
  
2. Planning the School Curriculum the programmes of study for Science are set out year-by-year for Key Stages 1 and 2. We use a "Big question" approach to teach our science curriculum. At the beginning of every topic the children are introduced to the content of that topic. As a class (or group in the higher key stages) they devise a question they want to answer by the end of the topic. The teacher then ensures the curriculum content is taught, as well as the appropriate scientific investigation skills for the children to be able to devise and carry out investigations to answer their "Big Question" by the end of the topic. (The Nature, Processes and Methods of Science 'Working scientifically' specifies the understanding of the nature, processes and methods of Science for each year group. It should not be taught as a separate strand. 'Working scientifically' should be taught through and clearly related to substantive Science content in the programme of study.)
  
3. Key Stage 1 The main focus of science teaching in Key Stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly-constructed world around them. They should be encouraged to be curious and ask questions about what they notice. They should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests and finding things out

using secondary sources of information. They should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways. Most of the learning about Science should be done through the use of first-hand practical experiences, but there should also be some use of appropriate secondary sources, such as books, photographs and videos.

Pupils should read and spell scientific vocabulary at a level consistent with their reading and spelling knowledge at Key Stage 1.

4. Lower Key Stage 2 – Years 3 and 4 The main focus of Science teaching in Lower Key Stage 2 is to enable pupils to broaden their scientific view of the world around them. They should do this through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions. They should ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple fair tests and finding things out using secondary sources of information. They should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out.

Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing reading and spelling knowledge.

5. Upper Key Stage 2 – Years 5 and 6 The main focus of Science teaching in Upper Key Stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They should do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically.

At Upper Key Stage 2, they should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They should also begin to recognise that scientific ideas change and develop over time. They should select the most appropriate ways to answer Science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out fair tests and finding things out using a wide range of secondary sources of information. Pupils should draw conclusions based on their data and

observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings.

Pupils should read, spell and pronounce scientific vocabulary correctly.

Inclusion Science forms part of the school curriculum policy to provide a broad and balanced education to all children. Assessment against the National Curriculum allows us to consider each child's attainment and progress against expectations. When progress falls significantly outside the expected range, the child may have SEND. Our assessment processes look at a range of factors – classroom organisation, teaching materials, teaching style, and 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 and includes all children.

6. The Science programme is progressive and continuous for each pupil, incorporating a variety of knowledge, skills and understanding.
7. Pupils should be able to describe associated processes and key characteristics in common language, but they should also be familiar with, and use, technical terminology accurately and precisely. They should build up an extended specialist vocabulary.
8. All teachers are, in consultation with year group colleagues, responsible for pre-planning the delivery of the Science programme for that year group and with the science coordinator.
9. All teachers set realistic and progressive scientific learning targets for the children in the class. These targets are shared with the children who track their progress during the topic through an arrow target at the front of their books. There is also an ongoing scientific investigation skills arrow which goes from Key stage to key stage.
10. Assessment, recording and reporting are an integral part of the Science Programme, in line with the School Assessment Policy. Each unit of work is assessed continually throughout the topic, as well as a summative assessment at the end of the unit of work. This is achieved through discussion with pupils, observation of pupils, marking work and the use of assessment bookmarks from Years 1 to 6.
11. Monitoring & Evaluation The Science Subject Leaders will monitor and evaluate the teaching and learning of Science through monitoring and evaluation of pupils' work, lesson observations and monitoring of data via the assessment samples.

12. Health & Safety Pupils will be taught to use scientific equipment safely when using it during practical activities. Class Teachers, Teaching Assistants and the Subject Leader will check equipment regularly and report any damage, taking defective equipment out of action. Teachers will ensure the School Policy for Health and Safety is integrated into Science teaching.