



## Science Policy

**“An inspired learning community with Jesus Christ at our centre”**

***It is our aim that, through the power of the Holy Spirit:***

- Each individual is valued, loved, welcomed and accepted as a precious creation of God.
- We are a community where ‘*God is love*’ is revealed in the witness of everyday life.
- A love of learning is inspired and the wide range of God-given gifts and talents of each child is celebrated and fulfilled.
- We provide the highest possible quality of education within a learning environment where children are both challenged and supported.

**Policy agreed:** March 2020

**Subject Leader:** Miss J Jackson

**Headteacher:** Mr S Bartram

**Date of review:** March 2021

## Intent

### Statement of Intent

It is our intention at St. Ignatius Catholic Primary School to develop in all children a lifelong curiosity and interest in science. We intend for children to have the best possible opportunities to learn through systematic investigations of the physical, chemical and biological aspects of the world which rely on first-hand experiences.

Through the new National curriculum 2014, children's entitlement to participate fully in science is realised and this must be adopted as a consistent approach throughout school. As children progress through the year groups, they build on their skills in working scientifically, as well as on their scientific knowledge, as they develop greater independence in planning and carrying out fair and comparative tests to answer a range of scientific questions and concepts.

Through science, the pupils at St. Ignatius Catholic Primary School will continue to deepen their respect, care and appreciation for the natural world and all its phenomena.

*“The important thing is to never stop questioning”*

*– Albert Einstein*

### Aims and Objectives:

- To deliver the National Curriculum 2014 in ways that are imaginative and purposeful.
- To encourage and develop children’s interest, enjoyment and enthusiasm in science.
- To plan a variety of practical activities which encourage the development of investigation, exploration, prediction, collaboration, observation, measurement and evaluation skills.
- To develop the use of scientific language, recording and techniques.
- To relate science to everyday life through the use of everyday materials and situations.
- To support children’s literacy, numeracy and technology skills within a scientific concept.
- To meet the individual needs of each child so that they fulfil their potential in science.
- To promote a ‘healthy lifestyle’ in our children.

# Implementation

## Curriculum

The acquisition of key scientific knowledge is an integral part of our science lessons. 'Dictionary Dabbles' are used at the beginning of new units of work which enable children to learn and retain the important, useful and powerful vocabulary and knowledge contained within each unit. The progression of skills for working scientifically are developed through the year groups and scientific enquiry skills are of key importance within lessons. The progression of these skills is set out in the Science Long Term Plan, which is currently a four-year rolling program due to mixed-age year groups. The carefully selected sequence for units of work helps to embed scientific knowledge and skills, with each lesson building on previous learning, enabling teachers to deliver high-quality teaching and learning opportunities whilst also highlighting possible scientific misconceptions.

Through our curriculum offer for Science, our main aim is to develop children's knowledge, skills, and understanding, as well as nurture a sense of enjoyment and natural enquiry in the subject. Sometimes we do this through whole-class and small group teaching. 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. Children use technology in Science lessons where it enhances their learning. The children engage in a wide variety of problem-solving activities. Wherever possible, we involve the pupils in practical activities as these increase enthusiasm and motivation and provide first-hand experience. Opportunities for developing the range of intelligences are presented to the children and staff teach to visual, auditory and kinaesthetic learning styles. Practical activities provide the children with a range of contexts allowing safe exploration of the world without the need to master facts and theories. By taking part in practical activities, children are experiencing Science first hand and are more likely to retain their learning. Knowledge and skills can be developed in small steps through practical work. The sequencing of written work becomes easier after practical experiences. 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 are able to achieve this in a variety of ways, for example:

- Setting common tasks which are open-ended and can have a variety of responses;
- Setting tasks of increasing difficulty;
- Grouping children by ability in the room and setting differentiated tasks for each ability group;
- Providing resources of different complexity, matched to the ability of the child(ren);
- Where possible, using teaching assistants to support the work of individual children or groups of children;
- Mixed ability groups in which pupils plan and work together.

## **Planning**

Long term plans for Nursery, Foundation Stage, Key Stage One and Key Stage Two can be found on the school website and show the progression of skills and knowledge over the course of the child's education. We follow the National Curriculum 2014.

Planning in science is a process in which all teachers are involved. To ensure that plans are carefully balanced and the full coverage of the National Curriculum has been taken in to consideration, a variety of schemes may be used in conjunction with 'Inspire Science' planning, which provides a creative base for all teachers to work from. This will allow teachers to work more innovatively and not be stunted by following a rigid framework. We also encourage links to numeracy, topic and other areas of interest to enable children to be engaged with their learning. By careful planning, pupils' scientific skills and knowledge gained at Key Stage 1 will be consolidated and developed during Key Stage 2. Children in Key Stage 1 will be introduced to science through focused observations and explorations of the world around them. This will be further developed through supportive investigations into more independent work at Key Stage 2. The knowledge and content prescribed in the National Curriculum will be introduced throughout both key stages in a progressive and coherent way. How this is achieved is indicated in the Lancashire County Council scheme of work (Inspire Science) and within our own Long Term Planning.

Science is taught for at least 2 hours weekly across all year groups (excluding Foundation Stage and Nursery where children have constant access to free-flow areas daily).

## **Early Years and Nursery Provision**

In the 'Early Years', children work to the Early Years Foundation Stage (EYFS) Statutory Framework. This framework is structured very differently to the national curriculum as it is organised across seven areas of learning rather than subject areas, but the areas do feed into the national curriculum. The most relevant early years outcomes for science are taken from the following areas of learning; physical development, understanding the world and expressive arts and design. The section 'Understanding the World' involves guiding children to make sense of their physical world and their community through opportunities to explore, observe and find out about people, places, technology and the environment. We relate the scientific aspects of the children's work to the objectives set out in 'Development Matters' and Early Learning Goals, which underpin the curriculum planning for children aged three to five. Science makes a significant contribution to the objectives within the ELG's of developing a child's knowledge and understanding of the world.



## **Differentiation, Equal Opportunities and Inclusion**

The study of science is planned to give pupils a suitable range of activities appropriate to their age and abilities, where all children are encouraged and supported to develop their full potential. All children have equal access to the science curriculum and its associated practical activities. The Senior Leadership Team, Class Teachers and Teaching Assistants at St. Ignatius Catholic Primary School are responsible for ensuring that all children, irrespective of gender, learning ability, physical disability, ethnicity and social circumstances, have access to the whole curriculum and make the greatest possible progress.

Where appropriate, work will be adapted to meet children's needs and extra time may be given for consolidation and reinforcement. All pupils, including the more able pupils, will be given suitably challenging activities to stretch and engage within and just above their own abilities to enhance learning. The grouping of pupils for practical activities will take account of their strengths and weaknesses and ensure that all take an active part in the task and gain in confidence. Gender and cultural differences will be reflected positively in the teaching materials used. Each lesson in Science takes into account the targets set in a child's 'One Page Profile' or 'Supporting Me to Learn Plan'.

## **Marking (See Marking Policy)**

Much of the work done in science lessons is of a practical or oral nature and, as such, recording will take many varied forms thus making marking different to other subjects. It is, however, important that written work is marked regularly and clearly, as an aid to progression and to celebrate achievement.

'Marking for improvement' comments in a child's book must be relevant to the learning objective to help children to better focus on future targets. It is imperative that children are given the time to improve their work and teachers will support children by scaffolding improvements as necessary.

## **Health and Safety**

All teachers of science need to have read 'Be Safe' (ASE Publications) and know how to carry out a risk assessment. This is available to all staff via the Subject Leader when required and on the school website. Pupils, too, need to be taught how to take action to control the risks for themselves by recognising the hazards and taking steps to reduce the danger from the hazards.

## **Displays**

Science is one of the core subjects and it is therefore expected that all the classes should have a display area related to their current topic.

- Questions should be used in order to raise children's inquisitiveness.
- They should be as interactive as possible, encouraging children to 'think'.
- Display areas should show scientific vocabulary for the topic.
- Displays should be mounted according to the school guidelines for display.
- Displays should include a 'working scientifically' tracker which the children can update.

## **Assessment**

Assessment in science should be in line with the current Assessment Policy.

The assessment of science in our school is through teacher assessment by observation and careful judgement of class work and discussion. Teachers may choose to assess children more formally but this is at their own discretion which is due to the four-year rolling programme which is currently in place. Some standard assessments only provide year group relevant assessments which is not always suitable for our school.

Data is inputted onto insight before the end of each half term and any assessments made are used to inform the following half terms' planning.

## **Science Leader Roles and Responsibilities:**

Science education throughout the school is co-ordinated by the Science Leader, and entails the following tasks:

- Give support to colleagues as appropriate;
- Conduct pupil interviews and gather information on the pupil voice;
- Update and monitor of school resources;
- Lead meetings or discussions relating to science issues;
- Policy development, implementation and review;
- Update the school website regularly;
- Monitoring, including; samples of work, book scrutinies and lesson observations;
- Gather relevant data on a termly basis from all year groups and analyse this data, responding to the needs of pupils;

- Produce, monitor and evaluate an action plan for science termly which is linked to the School Development Plan (if appropriate);
- Organise any further training required by staff members;
- Attend networking meetings for both the Local Authority and the Trust;
- Report to the Academy Council annually.

## **Impact**

At St. Ignatius Primary School, progress is measured through a child's ability to know more, remember more and explain more. This can be measured in many different ways within classrooms and across year groups and is something which we will continually update and improve as a staff team. Attainment and progress can be measured across the school using the 'Insight Assessment Tracker' system. The impact of using the full range of resources included available to teachers will also be seen across the school with an increase in the profile of science, the quality of teaching and learning and also the pupil voice. The learning environments across school will be more consistent with science technical vocabulary displayed, spoken and used by all learners. Whole-school and parental engagement will be improved through the use of science-specific home learning tasks (i.e. British Science Week or Science Investigation Bags) and shared use of knowledge organisers and 'Dictionary Dabbles'. Children who feel confident in their science knowledge and enquiry skills will be excited about science, show that they are actively curious to learn more and will see the relevance of what they learn in science lessons to real-life situations and also the importance of science in the real world.

## **Policy Monitoring and Review**

We believe this policy will be effective only if we ensure consistency across the school by regular monitoring. This policy is monitored by the Subject Leader, Joanna Jackson, and is evaluated and reviewed by the whole staff every year.