



Science policy

Intent

At St Clare's Catholic Primary School we believe that a high quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural world. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

Science in our school is about developing children's ideas and ways of working that enable them to make sense of the world in which they live through investigation, as well as using and applying process skills. The staff at St Clare's Catholic Primary School ensure that all children are exposed to high quality teaching and learning experiences, which allow children to explore their outdoor environment and locality, thus developing their scientific enquiry and investigative skills. The Science curriculum develops learning and results in the acquisition of knowledge and understanding not only of the topic they are studying, but of the world around them. We intend to provide all children regardless of ethnic origin, gender, class, aptitude or disability, with a broad and balanced science curriculum.

Implementation

In ensuring high standards of teaching and learning in science, we implement a curriculum that is progressive throughout the whole school. Planning for science is a process in which all teachers are involved to ensure that the school gives full coverage of, 'The National Curriculum programmes of study for Science 2014' and, 'Understanding of the World' in the Early Years Foundation Stage. Science teaching at St Clare's Catholic Primary School involves adapting and extending the curriculum to match all pupils' needs. Where possible, Science is linked to class topics. Science is taught as discrete units and lessons where needed to ensure coverage.

We have also developed scientific tasks, which are completed at the end (post-learning task) of a topic in order to show clear progression and children's new found knowledge and

understanding. These tasks also enable the children to articulate scientific concepts clearly and precisely, assisting them in making their thinking clear, both to themselves and others.

Teachers plan to suit their children's interests, current events, their own teaching style, the use of any support staff and the resources available. We ensure that all children are provided with rich learning experiences that aim to:

- Prepare our children for life in an increasingly scientific and technological world today and in the future.
- Help our children acquire a growing understanding of the nature, processes and methods of scientific ideas.
- Help develop and extend our children's scientific concept of their world.
- Build on our children's natural curiosity and developing a scientific approach to problems.
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- Encouraging open-mindedness, self-assessment, perseverance and developing the skills of investigation – including: observing, measuring, predicting, hypothesising, experimenting, communicating, interpreting, explaining and evaluating.
- Develop the use of scientific language, recording and techniques
- Develop the use of computing in investigating and recording. Children will access resources to acquire learning through Science equipment, digital technology, practical experiences and photographs.
- Make links between science and other subjects through cross curricular links.
- Build on prior knowledge and link ideas together, enabling them to question and become enquiry based learners.
- Clear and comprehensive scheme of work in line with the National Curriculum. With teaching and learning showing progression across all key stages within the strands of Science.
- Develop the children's topical learning through Educational Visits were applicable.
- Learn and revisit the British Values and PSHE for the importance of our world and how it should be treated.

Impact

The impact and measure of this is to ensure children not only acquire the appropriate age related knowledge linked to the science curriculum, but also skills which equip them to progress from their starting points, and within their everyday lives.

All children will have:

- A wider variety of skills linked to both scientific knowledge and understanding, and scientific enquiry/investigative skills.
- Children will be able to question ideas and reflect on knowledge.
- Children will be able to explain the process they have taken and be able to reason scientifically.
- Children will work collaboratively and practically to investigate and experiment
- A richer vocabulary which will enable to articulate their understanding of taught concepts.
- High aspirations, which will see them through to further study, work and a successful adult life.

Curriculum planning of Science

We base our teaching on the National Curriculum Programmes of Study for Key Stages 1 and 2. The attainment targets inform our planning and help us to ensure that we plan for continuity and progression. We plan science using topics ensuring that they are compliant with the National Curriculum programmes of study for each key stage. We ensure progression in science by ensuring that areas of study are revisited and developed to give a progressively deeper understanding and greater competence. Breadth of experience is planned so that each time children revisit a topic they study a new aspect of it, building on their scientific enquiry and investigation skills and expanding pupils' knowledge, understanding and appreciation of the world around them.

Teaching and learning styles

We recognise and accept that the full depth and breadth of the Science curriculum cannot be delivered by the adoption of any one strategy. It is our policy to take into account the emphasis of the lesson, knowledge, skills and the developmental level of the children. We recognise that the best teaching will use a combination of instruction and inquiry based strategies, allowing the children to learn through first hand experiences as much as possible. The children will be helped and encouraged to make sense of these experiences through discussion and application to new learning situations. We make use of the local environment in providing first hand experience for science activities and encourage teachers to make use of educational visits further afield.

We teach science to all children, whatever their ability. Science forms part of the school curriculum policy to provide a broad and balanced education for 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. Our work in science takes into account the targets set in the children's individual support plans.

Cross curricular links

Where appropriate, Science should be linked to other curriculum areas such as Maths, Geography, Design Technology and texts studied as part of the Read to Write Scheme in English. Science should also be used to support learning in other subjects as well as developing computing knowledge, skills and understanding.

Resources

A bank of resources is available for each topic; ensuring science is taught in a practical and enjoyable way. These are stored in the relevant topic boxes in the curriculum cupboard. An audit of resources is carried out at regular intervals and replaced as necessary.

Health and safety

All Science trips must be carefully planned and organised with due consideration to agreed St Clare's guidelines. These guidelines must be followed without exception. Our children know how to use the equipment used within each lesson to ensure they are used safely. All school visits must be agreed and approved in advance by the Head teacher, Mrs Mackenzie. Please refer to St Clare's Online Safety Policy as well as our Health and Safety Policy.

Assessment and recording

Children are primarily assessed by formative means. We understand that not all children are working at the same level; therefore, tasks are scaffolded accordingly. Class teachers deliver an adapted curriculum to ensure that all children can access learning at a suitable and appropriate level. Class teachers also adapt planning to suit those with special educational needs and also to challenge individuals. All children are supported to ensure they achieve their potential. Assessment tasks at the end of each topic range from, a variety of open ended questions, recorded scientific thinking and discrete questioning.

The Science subject leader keeps samples of the children's work in a portfolio which shows coverage and progression in each year of the school.

Some assessment strategies, which can be used in Science, are:

- STAR assessment questions

- Observing tasks
- Listening to responses from questions
- Assessment tasks

Recap star questions.

Explain new vocab.

New learning.

To sum up.