Saint Clare's
Catholic Primary School

Science Policy

Member of staff responsible: Mrs Clack
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Mission Statement

St Clare's is a Christ-centred family where everyone is valued and respected. We learn and grow, whilst strengthening our relationship with God and one another. Together in His love, we can achieve our full potential.

Play, learn and grow together with Christ.

The Intent of our Science Curriculum

At St Clare's it is our intent to inspire children to want to know more about their understanding of the world through the scientific disciplines of biology, chemistry and physics.
In an ever-changing world, where our children's future jobs may not even exist yet, it is vital that our children understand how science has already changed their lives and how it may shape their future.

We aim to provide children with scientific knowledge, vocabulary, understanding and skills as well as giving them the real world uses of science. Our children are encouraged to recognise the power of rational explanation through exciting investigations, which build upon their natural curiosity. They are expected to:

- Try to explain what is occurring
- Use appropriate scientific vocabulary and ideas
- Explain the 'why'

We provide a range of different types of scientific enquiry throughout the children's time at St Clare's and encourage open-ended questioning, where they decide how to try and find the answer. It is important that children are not always directly guided to the 'right' answer and they realise that some of the most significant scientific advancements occurred from mistakes or someone saying 'What if…?'

As well as using technical vocabulary accurately and precisely, children will also apply their mathematical knowledge to their understanding of science, including:

- collecting
- presenting
- analysing data

We believe that as well as being able to understand a scientific enquiry for themselves, it is important our children can also explain this coherently and with a critical mind to someone else.

The Implementation of our Science Curriculum

St Clare's uses a range of strategies to introduce, explore and fully understand scientific learning. When required, this will be adapted to best suit each class and everyone as a learner so they are able to make their personal best progress with their learning.

In EYFS, we assess the children's Understanding of the World according to the Development Matters statements and some aspects of Expressive Arts Design are also science based. Topics for the Early Years children include as many elements of science as possible but as flexibility is necessary, the Foundation Stage does not require a rigid scheme.

Each year group's objectives come from the English National Curriculum and these have been aligned to fit with the associated umbrella topics, within an appropriate time of year and within the children's developmental stages so they are best able to access the learning.

Revision of key concepts and knowledge are revised regularly through assessment, marking, in the moment feedback, quizzes and recapping prior knowledge at the start of each science lesson, so that teachers can assess pupils' understanding. Challenge is encouraged in lessons and children are asked to communicate and explain their understanding at a deeper secure level.

Key questions that aim to:

- draw out and deepen understanding
- move learning along and show progression of substantive and disciplinary knowledge and skills
- address potential misconceptions

Children need to be shown that there are a variety of types of scientific investigations, these are displayed in all classrooms and will be taught these across their time in school:

- comparative and fair testing
- pattern seeking
- classifying, identifying and grouping
- observing over time
- research using secondary sources

Why take learning outside?
Many of our science topics allow learning to be taken outside. Evidence shows that healthier pupils have higher educational attainment. There is substantial research that indicates that spending time outside increase levels of physical activity, mental health and wellbeing. The National Curriculum in England mentions "use of the local environment" ten times within the science programmes of study for Key Stages 1 and 2.

Resources used to help deliver our curriculum:

To assist our planning at St Clare's, we're using https://www.planassessment.com/. Plan assessment allows staff to access plans for topics covered; it addresses the areas of scientific enquiry, misconceptions, vocabulary and prior learning. The plan progression in knowledge is also an important resource. Plan progression shows the links between the topics taught in different year groups, ensuring that there is progression and that staff are covering the correct content for their year group. PLAN Progression in working scientifically skills will monitor progression of the working scientifically skills through the school. Finally, it has a breakdown of the five types of scientific enquiry with examples of each aspect to give a more in-depth explanation.

As a school, we're also promoting a large emphasis on key vocabulary used in Science. This will be covered both pre and post Science topics to develop a greater understanding and explanations of key vocabulary.

Health and Safety

Alongside the Science Policy, there is a whole school Health and Safety Policy. All staff follow guidance in the Consortium of Local Education Authorities for the Provision of Science Equipment (CLEAPSS) document.

Presentation of work

Work is presented in a variety of ways across the school, both written and oral. In written pieces, children must present work as they would in English and other subjects and there is the expectation that it will be neat, clear and well organised. Throughout topics, children are encouraged to actively listen and interact with others to discuss issues and form opinions. This shared learning enables children to express their own ideas, listen to those of others and grow in their understanding.

Pupils with Special Educational Needs (SEN)

We aim to provide for all children so that they can succeed and achieve in Science according to their abilities. All children are provided with equal access to the Science curriculum. We aim to provide suitable learning opportunities regardless of gender, ethnicity or home background.

- Adaptive teaching provides pupils with work matched to their individual needs. We identify which pupils or groups of pupils are under- achieving and take steps to improve their attainment.
- Gifted children are identified and suitable learning challenges provided.
- Children placed on our Special Needs Register are targeted for additional support from support staff.

Assessment, Monitoring, Recording and Reporting

Throughout their time at St Clare's, children's progress is continually measured through formative and summative assessment which are used to inform future teaching and learning. By the end of each key stage, learners are expected to know, use and comprehend, skills and knowledge in the relevant programme of study as set out in the English National Curriculum. These are set out as statutory requirements.

We also draw on non-statutory requirements to extend our children and provide an appropriate level of challenge. Some of the summative and formative assessments we use are:

- KWL grids assess childrens prior learning and promote pupil ownership.
- Children's misconceptions are pre-anticipated within medium term planning.
- The working scientifically symbols are used as the success criteria for lessons and highlighted when achieved.
- Pupil observations: this includes children's individual work, in partners and in group settings.
- Dialogue talk and questioning.
- Termly KLIPS and pupil progress meeting.
- Termly reports and parents evenings.
- Children receive effective feedback through teacher assessment, both in the moment and through PLAN Assessment used to assess and moderate children's work.
- Plan Assessment will be used to assess and moderate children's work. It will evidence examples of the work of one pupil who meets the requirements of the knowledge statements for the topic. A portfolio of work that meet the expectations of the knowledge statements for each topic for that year group National Curriculum for England.
- They will develop an understanding of what the differences are between these types of investigations, the pros and cons of each, as well as when it is best to select a particular approach. As children move through Key Stage 2, they may be given the opportunity to choose their own approach to learning and how best to investigate.

Visits to local attractions, as well as visitors coming into school are helping our children to gain further knowledge and understanding of the subject. Teachers also encourage real world scenarios where scientific learning applies to show the children the types of occupations that might use this learning.

The Impact of our Science Curriculum

If our intent and implementation are successful, then at St Clare's we would expect to see:

- A broad and engaging curriculum that makes use of a range of resources, such as visitors and local attractions.
- Children and staff who are enthusiastic about scientific learning.
- Children and staff who can speak confidently about science, including uses in the real world.
- Children who can use appropriate scientific vocabulary in written and oral form.
- All children being successful in sharing their understanding of scientific concepts.
- Children who can make links between different areas of science and other subject areas.
- Children who can recall prior scientific learning when required and use this to understand new learning.
- Children increasingly being able to instigate their own investigations confidently and interpreting their findings
- Staff who are able to anticipate potential misconceptions and address these confidently
- Children meeting their age-related expectations in science consistently

This policy also needs to be in line with other school polices and therefore should be read in conjunction with the following school policies:

- Teaching and Learning Policy
- Assessment and Record Keeping
- Feedback Policy
- Special Educational Needs Policy

- Computing Policy
- Equal Opportunities Policy
- Health and Safety Policy