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| *Hand in Hand with God we Learn*<br>St Joseph's Catholic Voluntary Academy Policy Documents<br><br>**Science Policy** | Date of Issue:<br>September 2024 |

## Aims of the Curriculum

**At St Joseph's we value every child as a gift from God.**

Our curriculum is created with a deep understanding of how our faith influences our thoughts, decisions and actions.
Resilience and pride shape the learning culture within this school for both children and adults. Having the highest aspirations for and of all, we learn together, opening minds and creating an environment of intellectual curiosity.

Working towards a rich and meaningful curriculum that reflects the diverse population of our school family. Teaching children about where they live, making experiences personal and memorable.
Giving children worldwide experiences that help them to understand who they are.

Our curriculum design is based on evidence from cognitive science; three main principles underpin it:
- Learning is most effective with spaced repetition.
- Interleaving helps pupils to discriminate between topics and aids long-term retention.
- Retrieval of previously learned content is frequent and regular, which increases both storage and retrieval strength.

## Science – Curriculum Intent

At St Joseph's Catholic Voluntary Academy, we aim to give all children equal opportunities in Science and teach them specific knowledge and skills relating to their Science topic. We aim to give children a high-quality science education which provides them with an understanding of our world and the environment around them, through our teaching.
We encourage children to be inquisitive throughout their time at the school and beyond. The Science curriculum fosters a healthy curiosity in children about our universe and promotes respect for God's

Creation. We believe science encompasses the acquisition of knowledge, concepts, skills and positive attitudes.

Throughout the programmes of study, the children will acquire and develop the key knowledge that has been identified within each unit and across each year group, as well as the application of scientific skills. We ensure that the Working Scientifically skills are built-on and developed throughout children's time at the school so that they can apply their knowledge of science when using equipment, conducting experiments, building arguments and explaining concepts confidently and continue to ask questions and be curious about their surroundings.

We encourage children to use scientific vocabulary specific to their current science topic through clear modelling and we build upon the children's vocabulary each year. These are displayed on working walls and within their books

Topics such as 'Animals including Humans' are taught in KS1 and are again studied at a higher level in KS2, enabling children to use what they have already learnt as a foundation before learning new knowledge.

## Implementation - Planning and Teaching

Teachers create a positive attitude to science learning within their classrooms and reinforce an expectation that all pupils are capable of achieving high standards in science. Our whole school approach to the teaching and learning of science involves the following:

1. In EYFS, Science is primarily part of The Development Matters objective; Understanding the World. Children are taught about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes. Science also falls into The Development Matters objective; Physical Development: Health and Self-Care. Children are taught about the importance for good health of physical exercise, and a healthy diet, and talk about ways to keep healthy and safe. They manage their own basic hygiene and personal needs successfully, including dressing and going to the toilet independently. In EYFS, children are taught to safely use and explore a variety of materials. (Development Matters; Expressive Arts & Design: Media and Materials).
2. In key stage 1 and 2 we use the Cornerstone's Love to Investigate and White Rose scheme as a foundation for our science lessons. Within this, two extra strands have been added relating to Sustainability; this is done throughout all year groups. However, teachers have the freedom to adapt the science investigations to make the learning relevant for the children and use our surroundings and resources to support children's learning.
3. We use a 'Talk for Science' approach, whereby the essential knowledge is 'mapped' and we use science 'sentence stems', with actions, to help children use vocabulary relating to working scientifically.
4. We build upon the knowledge and skill development of the previous years. As the children's knowledge and understanding increases, and they become more proficient in selecting, using scientific equipment, collating and interpreting results, they become increasingly confident in their growing ability to come to conclusions based on real evidence.
5. The Working Scientifically skills are embedded into lessons to ensure these skills are being developed throughout the children's school career and new vocabulary and challenging concepts are introduced through direct teaching. This is developed through the years, in-keeping with the topics.

6. Regular events, such as Science Days, allow all pupils to come off-timetable, to provide broader provision and the acquisition and application of knowledge and skills. These events often involve the wider community.

## Impact

In Science, the intended impact is that the curriculum offers a fun, engaging, high-quality science education that provides children with the foundations and knowledge for understanding the world. Our engagement with the local environment ensures that children learn through varied and first hand experiences of the world around them.

At St Joseph's Catholic Academy, we want our pupils to realise that science is all around us and science experiments and discoveries can happen anywhere and everywhere. We want children to understand how our world has changed due to famous scientific discoveries and to develop concern for our environment and realise that they are the next generation who can help make a difference to our environment. In addition to this, we want to break the stereotypical mould of what/who a scientist is and provide children with aspirations for jobs which use science. From this exposure to a range of different scientists from various backgrounds, all children feel they are scientists and capable of achieving. Children at St Joseph's overwhelmingly enjoy science and this results in motivated learners with sound scientific understanding

## Assessment, Recording and Reporting

Children's progress is continually monitored throughout their time at St Joseph's and is used to inform future teaching and learning. By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study as set out in the National Curriculum. These are set out as statutory requirements. We also draw on the non-statutory requirements to extend our children and provide an appropriate level of challenge.

Children receive effective feedback through teacher assessment, both orally and through written feedback in line with the success criteria. Children are guided towards achievement of the main objective through the use of process based 'success criteria', provided by and explained by the teacher. Children will have these to refer to in the lesson, where they will be evident in their books and used to identify areas of difficulty by children and teachers when reviewing and assessing work.

Assessment for learning is continuous throughout the planning, teaching and learning cycle. In KSI and KS2, this is carried out using a variety of methods:-

- Observing children at work, individually, in pairs, in a group, and in classes.
- Questioning, talking and listening to children
- We are able to measure the impact of the Science curriculum through informal pupil and staff discussions, tracking of knowledge of new vocabulary in the Never Heard the Word Grids and monitoring Insight objectives/assessments.
- In KS2, all children take part in pre and post assessments. These are carried out using the White Rose pre and post assessment tasks. In addition to this, a POP Task is included for each unit, which is aimed at questioning the Greater Depth children further.

## Role of Subject Leader

The Subject leader has a variety of roles.

These include:

- taking the lead in policy development and quality assuring toolkits, resources and teaching plans throughout the school
- supporting colleagues in their development and implementation of subject knowledge, toolkits, resources and plans and in assessment and record-keeping activities;
- monitoring progress and advising the Senior Leadership Team on action needed;
- taking responsibility for the purchase and organisation of central resources,
- using release time to support colleagues
- keeping up-to-date through research and continuing professional development.