ST AUGUSTINE'S
CATHOLIC PRIMARY SCHOOL

'Serve the Lord in Gladness'

Policy for Science

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Vision

We will ignite and inspire children's curiosity to empower them to question and investigate the world around them and beyond.

Introduction

At St Augustine's R.C. Primary school we embrace the ethos and beliefs of the United Nations Convention on the Rights of the Child. Every child has the right to an education (Article 28) and the right to develop their talents (Article 29). We value every pupil and the contribution they have to make recognising. As a result, we aim to ensure that every child achieves success and that all children are able to develop their skills in accordance with their level of ability.

1. Aims and Objectives

Science teaches us how to make sense of the world around us through developing a child's understanding of the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all children 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, children should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how key foundational knowledge and concepts can be used to explain what is occurring, predict how things will behave, and analyse causes. This foundational understanding should be consolidated through their appreciation of the specific applications of science in society.

The aims of science are:

- to develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics.
- to 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.
- to equip pupils with the scientific knowledge required to understand the uses and implications of science, today and for the future.
- to promote enjoyment and enthusiasm for learning through practical activity, exploration and discussion;
- to develop the ability to solve problems through decision-making and reasoning in a range of contexts;
- to develop a practical understanding of the ways in which information is gathered and presented;

2. Teaching and Learning

Our fundamental aim is to develop children's knowledge, skills and understanding in science. We do this through lessons that include a range of teaching and learning styles with the aim of high pupil involvement and engagement. During these lessons, children are encouraged to ask as well as answer scientific questions, using scientific vocabulary that is age appropriate. Teachers are aware of, and work towards, the aims of the School Improvement Plan. This enables the school to focus on areas for improvement. Children are provided with opportunities to use a wide range of scientific resources to support their work.

Teachers encourage children to use technology in science lessons where it will enhance their learning, as in exploring ideas and concepts, recording results and planning scientific enquiries. Wherever possible, we encourage the children to use and apply their knowledge and all children are provided with opportunities to participate in cross-curricular activities. All year groups have access to iPads and a range of APPs to develop scientific understanding.

In all classes, there are children of differing scientific ability and attainment. We recognise this fact and provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this through a range of strategies – in some lessons through differentiated group work, and in other lessons by organising the children to work in pairs or small groups on investigations. We use teaching assistants to support children and to ensure that work is matched to the needs of the child. This sometimes includes children working in small focus groups.

Home Learning

In the event of a school closure or 'bubble' isolating, teachers will use Google Classroom as a teaching platform to set appropriate work for their class. Teachers will continue to follow year group's plans to offer high quality, online remote learning. Children will submit work onto the classroom so that teachers can mark and provide feedback. Where possible, online lessons should reflect those that would normally take place in the classroom.

3. Science Curriculum Planning and Skills Progression

Science is one of the core subjects in the National Curriculum, and we use the National Curriculum as the basis for implementing the statutory requirements of the Programmes of Study for science.

We carry out the curriculum planning in science in three phases (long term, medium term and short term). Each year group has a long term plan developed from their year group Programme of Study.

Our medium term science plans, which are taken from the objectives set out on the long term plans, give details of the main teaching objectives for each term and define what we teach. They ensure an appropriate balance and distribution of work across each term.

4. The Foundation Stage

FS1 and FS2 are part of the Foundation Stage and they relate their scientific aspects of work to the objectives set out in the Early Learning Goals, which reinforces the curriculum planning for children aged three to five. Teachers use the Early Years Foundation Stage Framework to support learning and teaching. All children are provided with ample opportunity to develop their understanding of the world around them, through varied activities that allow them to enjoy, explore, practice and talk confidently about science.

5. Teaching Science to Children with Special Needs

Science is taught to all children, whatever their ability or need. It is one of our aims to provide a broad and balanced education to all children. We provide learning opportunities that are matched to the needs of children with learning difficulties. Small focus groups and differentiated activities are used, throughout school, to support children with Special Educational Needs.

6.Contribution of Science to Teaching in Other Curriculum Areas

English

Science contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. Children are encouraged to explain, discuss, record and read their scientific questions to encourage them to develop their understanding. Each year group also has a science focused research topic, which provides children with an opportunity to use scientific vocabulary in their writing.

Mathematics

Children are provided with plenty of opportunities to develop their mathematical skills in science. During scientific enquiry sessions, teachers ensure that links made to the mathematics Programme of Study are age appropriate and provide the right level of challenge for each individual child. Measurement and statistics objectives are covered when children are collecting their data and calculating the results of an enquiry.

Computing

Children use and apply science in a variety of ways when using technology. Younger children use technology to communicate results with appropriate scientific symbols. Older children use it to produce graphs and tables when explaining their results or when photographing results and evidence. All children, where appropriate, are actively involved in the use of interactive whiteboards during whole class and group teaching.

Personal, Social and Health Education (PSHE) and Citizenship

Science contributes to the teaching of PSHE and Citizenship. The work that children do outside their normal lessons encourages independent study and helps them to become increasingly responsible for their own learning. The planned activities that children do within the classroom encourage them to work together and respect each other's views. We present all children with contextual real-life problems, which allows them to apply their scientific understanding. Children learn about their bodies and as they progress through school they develop a deeper understanding of how their bodies change and how this affects them.

Spiritual, Moral, Social and Cultural Development

The teaching of science supports the social development of our children through encouraging them to work together productively on scientific tasks and to acknowledge the benefits of doing so.

7. Assessment and Recording

Teachers use a range of AFL and AOL strategies to accurately assess, monitor and track pupils' progress and attainment in science against the year group Programmes of Study. This is aimed at promoting continuity and progression on moving up through school.

Each year group provides termly feedback and assessment on the progress of the children in that cohort to the Science Leader. This allows year groups to track progress and provides the Leader with an overall picture of the attainment of the children in each year group.

Parents and carers are informed of their child's attainment against the year group Programmes of Study, at the end of each academic year, on their child's report.

9. Marking and Feedback

In science, a range of marking methods are used to ensure children receive purposeful feedback on their work and know how to progress in their learning.

Teacher Feedback

When marking work in books, teachers should make comments which link to the learning objective and the science skills demonstrated. Marking should give an insight into errors and misunderstandings, and identify any targets or development points for the pupil to focus on. Children should be encouraged and given time to complete corrections.

Focus Group Work

When working within a focus group, verbal feedback should occur during the session whilst the children are undertaking a particular task.

Self – Assessment and Peer Assessment

At times, children mark their own or their peers' work in order to gain instant feedback. Child led marking is checked by the teacher to ensure accuracy in marking, and is then commented upon or stamped to acknowledge it has been seen by the teacher.

'Next step' tasks

Where appropriate, 'Next steps' are given to: consolidate understanding, for assessment of understanding after the lesson or to stretch and challenge the child. These challenges may be individual to the child and written in their book or presented on the board to challenge a group of children and. Teachers provide children with time to complete these activities at the beginning of science sessions during response time.

Corrections

Children complete corrections to work identified by the teacher – this may be undertaken independently through written guidance in their books or through working in a focus group with teaching staff during response time.

10. Resources

There are a range of resources available in school to support the teaching of science. A central science resource cupboard, located in the Year 3 wet area, contains topic specific resources, which are collected and used by all year groups as and when needed.

11. Monitoring and Review

Monitoring of the standards of children's work and of the quality of teaching in science is the responsibility of the science leader and Head Teacher. Data regarding progress of different groups within school is monitored as well as scrutiny of work, which takes place termly with feedback given to staff.

The work of the science leader also involves supporting colleagues in the teaching of science, being informed about current developments in the subject, and providing a strategic lead and direction for the subject in the school. The science subject leader evaluates strengths and weaknesses in the subject and indicates areas for further improvement.