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Aston All Saints C of E Primary School

Whole School Policy for Science

Subject Leader Heather Searle

Date reviewed: September 2022

Next review: September 2023

Intent

Our science curriculum is designed with the intent that each child at Aston All Saints will become competent scientific thinkers and investigators who will encounter awe and wonder through first-hand scientific investigative experiences and approaches, which activate learning for all children. We place great emphasis on providing children with a high-quality science education that offers the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Our curriculum design for Science promotes specific competences including knowledge, enquiry and the working scientifically based skills. We deliver a carefully planned sequential curriculum that ensures all our children have the opportunity to think scientifically and enhance their life choices.

Aims

The National Curriculum for science aims to ensure that all pupils:

- develop **scientific knowledge and conceptual understanding** through the specific disciplines of biology, chemistry and physics
- 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
- are equipped with the scientific knowledge required to understand the **uses and implications** of science, today and for the future.

In the teaching science there are a number of key skills and attributes that we aim to develop. The children are taught to work scientifically, which involves:

- Developing an understanding of science through enquiry and investigation;

- Develop through practical work the skills of observation, prediction, investigation, interpretation, communication, questioning and hypothesizing, and increased use of precise measurement skills and ICT.
- Developing curiosity and asking scientific questions;
- Reading, understanding and using scientific vocabulary;
- Analysing functions, relationships and interactions;
- To comply with the statutory requirements of the National Curriculum and offer equality of access to all children;
- An enjoyment and fascination of science; encouraging an understanding and appreciation of the natural world and man's achievements.
- Encourage children to treat the living and non-living environment with respect and sensitivity.

Implementation

Language acquisition is at the centre of our curriculum and the subject of science: not just extending vocabulary, but ensuring the understanding of the language is gained by the pupils; Robust Vocabulary Instruction (RVI) is a key feature within the curriculum at Aston C of E. To support this, a clear Vocabulary Progression document ensures that all teachers know the exact language that is to be explicitly taught, in order to avoid misconceptions in meaning, making scientific vocabulary clearly understood.

Teachers use the Knowledge, Skills and Vocabulary progression document alongside the Essentials Curriculum to inform planning and ensure that each of the areas of learning are revisited and then built on. By doing this our children are challenged to know and remember more.

Foundation Stage

Staff in the Foundation Stage follow the Early Years Foundation Stage Framework and Development Matters; The teaching of this subject begins by offering the children meaningful activities that aid their development in science. Early Years Foundation Stage (EYFS) science curriculum ensures that children learn and develop well; the children are taught through indoor and outdoor play carefully planned activities and guided group work. It promotes teaching and learning to provide children with the broad range of knowledge and skills needed to give them a solid foundation for good future progress throughout both their school journey and beyond as set out in the EYFS Framework 2021.

The children know about similarities and differences between themselves and others, and among families, communities and traditions. Children know 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. In Foundation Stage, the children are offered experiences that lead to an understanding of self, environment, natural forces, other life forms and properties of materials. These early experiences are built upon and developed throughout school to lead towards an understanding of themselves, their environment and the wider world.

Key Stages 1 and 2

The science curriculum at Aston All Saints' C of E is based upon the 2014 Primary National Curriculum in England, which provides a broad framework and outlines the knowledge and skills taught in each Key Stage. Teachers plan lessons for their class using our progression of knowledge and skills document as well as the Essentials Curriculum, which incorporates Working Scientifically. Long term plans are mapped out to guarantee topics are covered within the appropriate key stages and are in line with The National Curriculum for each specific year group.

To ensure high standards of teaching and learning in science, we implement a curriculum that is progressive throughout the whole school. We ensure that teachers have the same expectations during Science lessons that they would have when teaching English or Mathematics and that any mathematical task (such as measuring or drawing graphs) is pitched at an age-appropriate level to ensure sufficient challenge. Teaching key subject specific vocabulary is also a key part of our Science curriculum. The vocabulary children will need for that unit are identified on the school's progression document and this builds upon the vocabulary they have learnt in earlier years.

Impact

We measure the impact of our curriculum through careful assessment, recording and monitoring. Children become more confident in analysing their work and giving their opinion on their own work and challenging the thoughts of others in science lessons. Within Science, we strive to create a supportive and collaborative ethos for learning by providing opportunities for children to question and investigate to discover answers for themselves. Children are involved in peer and self-assessment within lessons and speak confidently about their work in science and their developing skills.

Science is seen as an enjoyable, exciting and engaging part of the curriculum. Children will become confident in carrying out investigations and using evidence to support answers. Our Science curriculum is high quality, well thought out and is planned to demonstrate progression. We focus on progression of knowledge and skills and discreet vocabulary progression also forms an important part of the units of work.

Assessment and monitoring

Our Science curriculum is high quality, well thought-out and is planned to demonstrate progression. We focus on progression of knowledge and skills and discreet vocabulary progression also forms part of the units of work. We measure the impact of our curriculum through the following methods:

- Assessing children's understanding of topic linked vocabulary before and after the unit is taught.
- Summative assessment of pupil discussions about their learning.
- Images and videos of the children's practical learning.
- Interviewing the pupils about their learning (pupil voice).
- Moderation staff meetings where pupil's books are scrutinised giving the opportunity for a dialogue between teachers to understand their class's work.
- Annual reporting of standards across the curriculum.
- Science portfolio to show progression of Science through school.

Class teachers assess the children at the end of each science unit using the Essentials Curriculum Milestones to support their judgements. The science subject leader will continually monitor the impact science teaching is having on the children's learning through book scrutiny to ensure the progress of knowledge and skills is being taught.

Health and Safety

Safe working practices are an integral part of all Science activities. All staff are aware of safe and correct handling of tools, materials and equipment.

Teaching staff demonstrate to pupils how to work safely and ensures that all children using equipment are properly supervised. When working with science equipment and materials during practical activities teachers ensure that children understand the hazards and learn how to control them, ensuring the safety of themselves and others.

Equal Opportunities

Consideration is always given in respect of cultural differences and experiences and to children whom English is an additional language. All children with Special Educational Needs are provided with challenging experiences in a flexible manner suited to their individual requirements

POLICY LINKS

Curriculum, Teaching & Learning and Assessment Policy, Incorporating Feedback and Marking Policy

Maths Policy

Computing Policy

Reviewed: September 2022 by HS (Subject leader)