

Science Curriculum Statement



Golden Thread

At Alverton, we want Science to be fun, engaging and high-quality, fostering a curious and inquisitive nature about the wider world. We want our children to leave Alverton with a core knowledge of scientific concepts, the confidence to keep asking questions and sow the seed for the future scientists of the world.

Intent

The 2014 National Curriculum for Science aims to ensure that all children:

- 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 skills required to understand the uses and implications of science, today and for the future. We understand that it is important for lessons to have a skills-based focus, and that the knowledge can be taught through this.

At Alverton School, we encourage children to be inquisitive throughout their time here and beyond. The Science curriculum fosters a healthy curiosity in children about our universe and promotes respect for the living and non-living. 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.

Implementation

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

- Science will be taught in planned and arranged topic blocks by the class teacher. This is a strategy to enable the achievement of a greater depth of knowledge.
- Each lesson, begins with a quick revision of a previous unit.
- The main lesson begins with time to re-visit the previous learning and identify key vocabulary that the children will need. We use a range of recall methods, including online Quizziz and Word Wall as well as teacher questioning.
- Through our planning, we involve problem solving opportunities that allow children to find out for themselves. Children are encouraged to ask their own questions and be given opportunities to use their scientific skills and research to discover the answers. This curiosity is celebrated within the classroom. Planning involves teachers creating engaging lessons, often involving high-quality resources to aid understanding of conceptual knowledge and teachers use precise questioning in class to test conceptual knowledge and skills.

- We build upon the learning 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.
- 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.
- Teachers demonstrate how to use scientific equipment, and the various Working Scientifically skills in order to embed scientific understanding. Teachers find opportunities to develop children's understanding of their surroundings by accessing outdoor learning and workshops with experts.
- Children are offered a wide range of extra-curricular activities, visits, trips and visitors to complement and broaden the curriculum. These are purposeful and link with the knowledge being taught in class.
- Events such as Science Week allow all pupils to come off-timetable, to provide broader provision and the acquisition and application of knowledge and skills. These events may involve families and the wider community.
- In the EYFS, children are encouraged to explore the world around them, experiment with resources and materials and ask questions and offer suggestions as to why something has happened or what might happen. The learning environment provides children with rich opportunities both inside and out to follow their own lines of inquiry and curiosity and interested, supportive adults engage children in sustained shared thinking about the world around them.

Supporting Pupils with SEND in Science

At Alverton, teaching and learning is structured to support all pupils, including those with SEND, to progressively build on identified core knowledge to know, do and remember more. To achieve this, we adapt our curriculum in every subject to remove barriers to learning for pupils with SEND according to their individual needs and make subject-specific adaptations as appropriate. In Science we ensure that all children are able to engage in activities and practical aspects of the subject. In KS1, brightly coloured pictures and diagrams are used to help explain more complex topics and throughout the school key scientific vocabulary is displayed in classrooms. Where practical experiments and fieldwork are set outside, every consideration is taken to ensure the activities can be accessed by children with physical disabilities. For example, when investigating and studying microhabitats and the animals that live around them, photos can be taken and a selection of mini beasts collected for all children to observe.

Impact

We work under the principal of know more, do more, remember more and our science teaching is very effective; we know this because our children can confidently talk about scientific concepts, are able to remember knowledge during revision time and quizzes show improving scores over the term. The successful approach at Alverton School results in 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. Frequent, continuous and progressive learning outside the classroom is embedded throughout the science curriculum.

Children learn the possibilities for careers in science and we try to ensure that the children have access to positive role models within the field of science from the immediate and wider local community. Children at Alverton enjoy science and this results in motivated learners with sound scientific understanding who feel they are scientists and are capable of achieving.