

SCIENCE POLICY

Science makes an increasing contribution to all aspects of life. Children are naturally fascinated by everything in the world around them and science makes a valuable contribution to their understanding.’ (From Somerset Science Primary Guidelines)



Science and Engineering are rapidly growing and important industries in the modern world. Even if children do not become scientists or engineers, they will grow up in a world that requires scientific literacy and critical thinking skills. Science is all around us and helps children to make sense of the world. Charlestown Primary School recognises the importance of Science and strives to maintain a high profile for the subject. Our intent to enthuse and inspire children to develop a love of science is reflected in our curriculum and enrichment activities.

Pupils learn through practical activities that link to the real world and through discussion. Working scientifically skills are embedded in our curriculum. A scientist questions, predicts, observes, records, analyses and evaluates. All children can be scientists by following their own natural curiosity and at Charlestown, teachers emphasise these skills in order for children to flourish. Our school strongly encourages the use of subject specific vocabulary and through effective teaching of science we develop children's knowledge and key skills during each unit of science.

On the journey across the school, children become increasingly more independent, completing pupil led investigations, selecting resources and choosing their own strategies for recording. Pupils' enthusiasm for science in our school is clear. Extra-curricular events and science weeks have been a huge success.

Vision

At Charlestown, we believe that scientific investigation is one of the most powerful ways to learn; developing curiosity and perseverance as well as challenging what we know about the world. Through purposeful, practical and child-led enquiry, pupils are given opportunities to explore, question and be challenged in order to develop a deeper understanding of the world around them and encourage them to be inquisitive, independent thinkers.

Through our 'WOW! HOW? NOW...' approach, we ensure that our children:

- experience awe and wonder of the world,
- collaboratively investigate an exciting, inclusive and inspiring curriculum,
- explore scientists, careers and real-life examples that build their science capital and develop their aspirations for the future.

INENTNT:

- Provide an exciting, inclusive and inspiring science curriculum

- Develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- Develop the essential scientific enquiry skills to deepen their scientific knowledge
- To explore and learn scientific vocabulary to support their understanding and communication in science
- Children build a strong science capital, gaining high aspirations and knowledge of possible careers

IMPLIMENTATION:

- Knowledge organisers
- WOW! HOW? NOW...
- Vocabulary focus – rocket words
- Challenge and stretch cards for more capable scientists.
- Working scientifically skills are embedded throughout lessons and are systematically developed throughout the children's time at our school
- Practical investigations cover a wide range of enquiry approaches
- Use a wide range of high-quality resources
- Termly whole school assessments on working scientifically skills
- Science clubs
- Regular science events and enrichment (including science week)

IMPACT:

- Science is a high-profile subject in the school community (*evidenced in questionnaires*)
- Children gain a deep and robust scientific knowledge that builds on previous learning (*evidenced in highlighted learning intentions and end of unit tests*)
- Children have strong scientific enquiry skills that build on previous learning (*evidenced in Whole School Assessments and lesson enquiry starters*)
- Children have good knowledge and understanding of scientific vocabulary, applying it in their learning
- Children develop high aspirations (*evidenced in questionnaires*)

Introduction

This document is a statement of the aims, principles and strategies for the teaching and learning of science at Charlestown Primary School.

Rationale

Science and Engineering are rapidly growing and important industries in the modern world. Even if children do not become scientists or engineers, they will grow up in a world that requires scientific literacy and critical thinking skills. Science is all around us and helps children to make sense of the world.

Charlestown Primary School recognises the importance of Science and strives to maintain a high profile for the subject. Our desire to enthuse and inspire children to develop a love of science is reflected in our curriculum and enrichment activities.

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Aims and Objectives

- To nurture children's natural inclination to explore the world and examine changes in the world.
- To ensure children acquire knowledge as a result of finding answers to questions about the world around them.
- To engage pupils with learning about science, using an array of techniques to link ideas with practical experiences.
- To support pupils to question and explore scientific issues that are likely to impact upon their own lives.
- To help pupils develop and evaluate scientific ideas, using a number of different scientific techniques, such as investigative skills.
- To have strong cross-curricular links which improve children's communication skills, numeracy, problem solving and ICT skills.

Strategy for implementation - entitlement and curriculum provision

Science is a core subject of the National Curriculum. The work covered in Key Stage 1 builds on the Early Years Foundation Stage (EYFS). Pupils in reception develop their knowledge, understanding and skills through play based, active activities and direct teaching from which the pupils undertake planned tasks. The principal focus of science teaching in key stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly constructed world around them. They should be encouraged to be curious and ask questions about what they notice.

Planning is in accordance with the requirements of the National Curriculum 2014. The new curriculum focusses on the three key aspects of science; biology, physics and chemistry, each of which is underpinned by the theme of 'working scientifically'. Science is a core subject and as such has a high priority within our curriculum. Each year group, other than reception where science links largely to topic work, study specific science topics. Twinkl planning resources are used throughout the school, which provide teachers with a framework and lesson ideas. This planning has been mapped against the national curriculum objectives to ensure full coverage. Working scientifically skills are emphasised within each unit and specific assessment opportunities are provided for these skills.

Assessment

On-going formative assessment will be used to assess children's scientific knowledge, understanding and skills, whereby teachers constantly assess children's understanding on a lesson to lesson basis. As well as this end of unit tests in KS2 are also used to support teacher's judgements. Specific assessment opportunities are

used to assess working scientifically skills and children's progress against these skills are tracked across their time at school.

Teaching and Learning

A variety of teaching styles are used to teach science. The main focus is to provide practical and investigative activities that enable children to develop their knowledge, understanding and skills through first-hand experience. At Charlestown we acknowledge that science is a practical subject and should involve the children in investigative work as far as possible. Children often work in mixed ability groups in science and this can be advantageous as the more able secure their understanding by supporting their less able peers, and the less able aspire to be successful. Still, work is differentiated where possible to both support and challenge focus groups.

Although we strongly recognise the need for discussion between children in pairs and groups, we also recognise that there are times when a more formal 'chalk and talk' style is necessary along with demonstrations by the teacher to avoid misconceptions.

Teaching assistants are generally available to support classes during science and will at times provide assistance to particular groups. The emphasis in our teaching of science is on first-hand experience and we encourage children increasingly to take a level of responsibility for their own learning. Staff are responsible for creating a classroom environment which enables children to ask questions, predict outcomes and discuss their findings. This can include the use of displays with questions, class discussions in a quiet area or specific questioning by the teacher. Staff will use the children's own ideas and level of understanding as the starting point for scientific investigations.

Inclusion

We recognise children as individuals and tailor our teaching upon our knowledge of their specific needs. A range of teaching methods and resources allow children with a wide range of abilities to achieve their full potential. All children are given equal access to participate and achieve progress in all areas of the Science Curriculum. Staff will recognise that individuals are unique in their interests, abilities, motivation and learning needs. The school recognises that pupils with Special Educational Needs can often be very good at Science. Children who have a particular talent may well be placed on the Gifted and Talented register.

Enrichment

Charlestown Primary School aims to maintain the high profile of science by enriching the allotted curriculum lessons with science events throughout the year and by offering a range of STEM extra-curricular clubs.

Health and Safety

Health and Safety issues are considered in planning science work. Some particular science lessons and trips require a risk assessment, and this is dealt with by the class teacher.

Reviewed September 2021 by B Lane (Science Coordinator)