Coalway Community Infant School
Science Curriculum Intent

Whole school Vision

- We will nurture our children to become happy, independent, confident and valued individuals who will be able to make healthy, happy relationships with a range of people. They will develop positive personal traits, values and attitudes, which will prepare them for later life experiences.
- We will ensure all of our children experience a broad, rich curriculum, tailored to the unique needs of each individual child.
  Our children will have developed knowledge, understanding and skills across the curriculum by the time they leave us, ensuring that they have the skills necessary for their future success.

  We will focus in particular on supporting the development of our children's early communication and language skills, early reading and early mathematics skills, to accelerate their progress and prepare them for the next stage of their education.

- We will enable our children to believe in themselves and be aspirational, to achieve the highest possible standards and be successful.
- We will help our children develop a love of and enthusiasm for learning, where they are proud of themselves and celebrate everyone's achievement.
- We will care for and support everyone within our 'Coalway family', establish good communication and relationships, and work together to provide the best outcomes for all of our children. We will continue to develop the children's understanding of their belonging within the community and the wider world and strive to develop strong successful partnerships beyond the school.
- We will ensure that all children try new things, perform in a show, learn outdoors, including within our beautiful Forest of Dean setting, have experiences within the local community, visit new places and have the opportunity to learn to swim.
  Our children will leave Coalway Infants with positive, happy memories, having had a wealth of experiences and a range of academic, creative, sporting, cultural and spiritual opportunities.

Science Vision

At Coalway our children are aspiring scientists. We nurture their curiosity through a range of hands on experiences while being guided to use concepts and scientific vocabulary.

Our Science Principles that embed our vision

- We use our curiosity to ask questions.
- We can practically explore our curiosities.
- Science explores the real world.
- We understand and use scientific vocabulary.
- We are inquisitive.
- Science is hands on.
- We can talk about a range of Science concepts.
- We make observations and talk about them.
- Science is visible in our school environment.
- It inspires the scientists of the future.

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How is Science taught?

Science in the Early Years

EYFS Understanding of the world

Our science curriculum is planned from EYFS profile using the Early Learning Goals from the natural world. It is planned to link in with our themes and to build foundation knowledge which will be built upon in KS1. The children will experience a range of different scientific concepts through stories and hands on exploration. Experiences and trips are planned into our curriculum to ensure our children have first-hand experiences of our science.

Children will be given the opportunity to explore a range of different scientific concepts (floating and sinking, states of matter, plants, animals, our bodies) through hands on experiences. Exciting, purposeful and contextual activities are planned to build on children's natural curiosity. For example, building a boat during our ticket to ride (transport) theme enables them to think like 'Scientists' and 'Engineers' as they explore a range of materials and test out their own ideas. Scientific vocabulary is planned into our curriculum so children will be able to use subject specific language. Scientific activities will be both child-initiated and adult-led.

In the reception year, children will be taught in line with the Early Learning Goals through continuous provision.

Science in Key Stage One

The 2014 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 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 Coalway Infants, we encourage the children to be inquisitive through our ambitious Science curriculum. Our curriculum is broad and balanced and fosters a healthy curiosity throughout our units of study. Throughout the units of study the children will acquire and develop the key 'sticky' 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 the children's time at the school so that they can apply their knowledge of science when using equipment, conducting experiments, explaining concepts and continue to ask questions and be curious about their surroundings.

Why Science is taught in this way

EYFS

In the Early Years, much of the scientific learning is linked to the children's own experiences of the natural world and then building on this knowledge to broaden their understanding of the world around them. We aim to build on the knowledge and understanding that children come to school with, which is often vastly different for each child, in order to prepare them for future learning. Many of their learning experiences link to their own experiences or books and stories, so that learning can be hooked onto something real, that they have all had a chance to experience.

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KS1

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;

• Science will be taught in planned and arranged unit blocks by the science lead and adapted by teachers to meet the needs of their children.

• Our planning, is based around our sticky knowledge, each unit has enquiry types and working scientifically skills built into it to foster the children's curiosities and embed their knowledge.

- 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 the Science lead and teachers creating engaging lessons, often involving high-quality resources to aid understanding of conceptual knowledge.
- Teachers use precise questioning in class to retrieve conceptual knowledge and skills, and assess pupils regularly to identify those children with gaps in learning, so that all pupils keep up.
- 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 and recording and interpreting results.

• Working Scientifically skills and enquiry types are embedded into lessons to ensure these skills are being developed throughout the children's time at Coalway Infants and new vocabulary and challenging concepts are introduced through direct teaching. This is developed through the years, in-keeping with the units.

• 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.

• Children are offered a range of extra-curricular activities (Science club), visits, Science Day, trips and visitors to complement and broaden the curriculum. These are purposeful and link with the knowledge being taught in class.

Our Golden Threads –

- STEM ambassador visits
- Science day
- Learning in the outdoor environment.

How does Science meet our curriculum intent?

The successful approach at Coalway Infants results in a hands on, 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. Through enrichment activities, children have the understanding that science has changed our lives and that it is vital to the world's future prosperity. Children learn the possibilities for careers in science, as a result of our wider curriculum in assemblies and our connection with national agencies such as the STEM, ensuring that

children have access to positive role models within the field of 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 Coalway overwhelmingly enjoy science and this results in motivated learners with sound scientific understanding.

Subject Leader drivers 2023-24

Raising the profile of Science

- Review and update long term plan
- Complete PSQM
- Attend LA Science CPD
- Monitor curriculum planning to ensure full coverage and progression of skills
- Monitor and assess the standards of pupil work