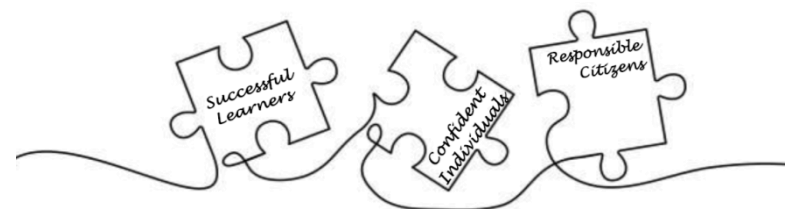




Science Curriculum Intent, Implementation and Impact



Intent	Implementation	Impact
At Rockcliffe, we strive to develop confident and creative scientists who are curious about the world around them. We want all of our children to develop a secure understanding of the nature, processes and methods of science through different types of scientific enquiries that help them to ask and answer questions. We are committed to practical, explorative and investigative learning. We believe in a hands-on approach where children learn by doing. Our approach encourages children to build resilience and become creative, critical thinkers. We ensure Working Scientifically skills are built upon and developed throughout children's time at Rockcliffe so that they can apply their knowledge of science when using equipment, building understanding and explaining	At Rockcliffe, we create learning opportunities that spark children's curiosity, encourage a positive attitude to science learning and reinforce the expectation that all children are capable of achieving high standards in science. PLAN Knowledge Matrices: We use knowledge matrices to ensure progression in knowledge, skills and vocabulary. For each topic of the science National Curriculum for each year group (1-4) and EYFS, there is a matrix that provides: - the key learning and vocabulary that the children need to have acquired - examples of possible activities that enable pupils to learn or apply the knowledge - examples of possible evidence that would indicate that children are secure in the learning and vocabulary. - Where appropriate, common misconceptions that the children may have are included to alert the teacher to be aware of these. Early Years Foundation Stage: - The EYFS Curriculum supports children's understanding of science through the planning and teaching of Understanding the World. - Children find out about objects, materials and living things using all of their senses looking at similarities, differences, patterns and change. - Both the environment and skilled practitioners foster curiosity and encourage explorative play; children are motivated to ask questions about why things happen and how things work. - Children are encouraged to use the natural environment around them to explore. They enjoy spending time outdoors at Rockcliffe and at Beach School to explore habitats, observe the changing seasons, plants and animals. - Children regularly participate in cookery sessions which allow them to experience changes in state as ingredients are mixed, heated and cooled. Key Stage One and Two: - Children follow a two-year cycle of planned science units. These are, where appropriate, linked to the Key Stage Topic theme. This enables deep and meaningful coverage and ensures progression within and across Key Stages. - Children participate in two hours of science each week, giving them time to question, investigate and explain their work.	Our children are successful. The majority of children achieve age related expectations in science at the end of their cohort year. Children talk positively and passionately about science and the experiences they have had. Pupil voice surveys reveal that children feel well supported, and know how their learning in science can help them in the future. Children retain knowledge that is pertinent to science with a real-life context. Children are able to question ideas and reflect on knowledge. Children are able to work collaboratively and practically to investigate their ideas. Children are able to explain the process they have taken and are able to reason scientifically.

concepts. We aim to maximise learning opportunities beyond the classroom. Exploration of our local environment begins in Nursery, when children first embark on their Beach School journey. Our close proximity to the coast, Marden Quarry and The Station Master's Garden provides us with plentiful natural spaces to extend and develop children's scientific knowledge and skills. Sustainability and responsibility for our natural world play a very important part in our science curriculum. We intend all children to develop appreciation for our planet and to live with the belief that, "No one is too small to make a difference".	- Existing knowledge is checked at the beginning of each unit of work to gauge children's starting points and identify misconceptions. A range of low stakes strategies are used, for example KWN grids, Kahoot Quizzes, or whole class thought maps. Future teaching is informed by children's starting points and incorporates pupil voice and children's interests. - At the beginning of each lesson, teachers plan opportunities for children to recall prior learning. This enables children to consolidate previous learning, while also preparing them for future learning, in line with the sequence of lessons. This is particularly important for our EAL and SEND children, who may need more opportunities to embed scientific vocabulary and concepts. - Children are encouraged to ask their own questions and given opportunities to use their scientific skills and research to discover the answer. This curiosity is celebrated within the classroom. - Teachers use precise questioning in class to assess conceptual knowledge and skills. They use summative assessments each term to identify and address any gaps in learning, so that all children are able to keep up. - Tasks are selected and designed to provide appropriate challenge to all learners. - Teachers encourage children to use a developing scientific vocabulary. Time is taken during lessons to introduce and reinforce age appropriate scientific vocabulary. Children are encouraged to use this vocabulary, both written and verbal, to explain their ideas and make sense of their observations and findings. - Working Scientifically skills are carefully planned into lessons to ensure that skills are continually developed throughout children's school career. Teachers demonstrate how to use scientific equipment, and the various Working Scientifically skills in order to embed and develop scientific understanding. - Children are encouraged to develop transferrable knowledge and skills in STEM subjects. They are encouraged to use their maths skills to measure, record and analyse their findings. - At the end of each unit of work, key knowledge is reviewed by the children, checked by the teacher and consolidated as necessary. - 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 and visitors to complement and broaden the curriculum and develop children's science capital. - Regular events, such as Science Week, allow all pupils to come off-timetable, to provide broader provision and help develop the children's science capital. These events often involve families and the wider community.	
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