Curriculum Intent statement for the teaching and learning of Science 2023/24

At St. Martin De Porres Primary School, we are committed to providing our children with a curriculum that has a clear intention and impacts positively upon their needs.

<table>
<tr><td>Intent</td><td colspan="3">At St Martin de Porres Primary School, we believe that science is a fundamental part of a child's education. Our aim is to provide a broad and balanced curriculum that inspires curiosity, fosters a love of learning, and encourages critical thinking. We believe that by providing pupils with a strong foundation of knowledge and skills, we can prepare them for the challenges of the future and inspire them to become the scientists and innovators of tomorrow. Our goal is to ensure that all children leave our school with a solid understanding of key scientific concepts, as well as a desire to learn more about the world around them.
In conjunction with the aims of the National Curriculum, our Science teaching offers opportunities for children to:
• 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 Scientific enquiry that help them answer questions about the world around them;
• Be equipped with the scientific knowledge required to understand the uses and implications of Science, today and for the future.
• Develop the essential scientific enquiry skills to deepen their scientific knowledge.
• Use a range of methods to communicate their scientific information and present it in a systematic, scientific manner, including diagrams, graphs and charts.
• Develop a respect for the materials and equipment they handle with regard to their own, and other children’s safety.
• Develop an enthusiasm and enjoyment of scientific learning and discovery.
• We aim to provide the children with the confidence and motivation to continue developing their skills into the next stage of their education and life experiences.</td></tr>
<tr><td rowspan="2">Underpinned</td><td>High expectations</td><td>Modelling</td><td>Fluency</td></tr>
<tr><td>All children are expected to succeed and make progress from their starting points.</td><td>Teachers teach the skills needed to succeed in Science, providing examples of good practice and opportunities for practical application whilst having high expectations.</td><td>Children apply enquiry, investigation and evaluation skills with ease across the whole curriculum.</td></tr>
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Implementation	At St. Martin's we want to create a positive attitude to Science learning within our 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 weekly by the class teacher. • Teachers will follow and adapt the White Rose scheme of work for each unit block to suit the needs of the children in their class. • The development of substantive knowledge through each topic as children progress through each year group. This is a strategy to enable the achievement of a greater depth of knowledge and include Mastery. • Practical activities and at least one Scientific enquiry to be carried out during each topic so that children can ask their own questions and be given opportunities to discover the answers. • Children are enabled to develop their understanding through the five types of Scientific Areas of Enquiry as outlined by the National Curriculum. These consist of; ▪ observation ▪ pattern seeking ▪ identifying and classifying/grouping ▪ comparative and fair testing ▪ researching • 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. The Working Scientifically skills consist of: ▪ questioning ▪ prediction ▪ setting up tests ▪ observation and measurement ▪ recording ▪ interpreting results ▪ evaluating • Planning involves the creation of engaging lessons and celebrating curiosity. Teachers use precise questioning in class to test conceptual knowledge and skills, and assess children regularly to identify those children with gaps in learning. • Teacher make use of the school grounds and local environment to provide contextual learning experiences. • Teachers demonstrate how to use scientific equipment correctly and safely. • We assess pupils' progress in science through a range of formative and summative assessments, including observations, written work, and practical investigations. We use this information to identify areas of strength and weakness and to inform our teaching and learning strategies. **We also aim to inspire the children's sense of curiosity though:** • Science based enrichment days • Inviting visitors/experts into our school • Celebrating Science Week • Recognising achievements of scientists and inventors • Science based clubs e.g. CREST awards, Eco Club

The units covered in KS1 are:	The units covered in lower KS2 are:	The units covered in upper KS2 are:
• Materials • The Human body • Seasonal changes • Animals • Animal needs for survival • Humans • Planting • Growing and cooking • Caring for the environment • Living things and their habitats • Scientists and inventors • Bulbs and seeds • wildlife	• Skeletons • Movement • Nutrition and diet • Fossils • Soils • Rocks • Light • Plants • Forces • Magnets • Biodiversity • Grouping and classifying living things • States of matter • Sound • Electricity • Habitats • Deforestation • The digestive system • Food chains • Habitats	• Forces • Space • Global warming • Properties of materials • Animals including humans • Life cycles • Reproduction • Reversible and irreversible changes • Plastic pollution • Renewable energy • Light • Light pollution • The circulatory systems • Diet, drugs and lifestyle • Variation • Adaptation • Fossils

Impact

- Developing scientific literacy: Children learn to understand scientific concepts and processes, which helps them to make informed decisions and participate fully in modern society.
- Fostering curiosity and wonder: Science education encourages children to ask questions and explore the world around them, which can inspire a lifelong love of learning.
- Developing critical thinking skills: Through science education, children learn to evaluate evidence, make reasoned arguments, and develop hypotheses based on observations and data.
- Encouraging creativity: Science education involves experimentation, problem-solving, and innovation, which can help children to develop their creative and imaginative skills.
- Building practical skills: Science education teaches children how to use scientific tools, conduct experiments, and collect data, which can be valuable in a wide range of careers.
- Promoting environmental awareness: Science education helps children to understand the natural world and the impact that human activity has on it, encouraging them to become responsible members of society.