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| **Science Curriculum Design** |
| **Curriculum Intent** |
| At SS John and Monica we recognise that science shapes the past, the present and the future. We believe that science is an integral part of our lives and the pupils in our school are the scientists of the future; therefore its significance in education is great. We aim to provide a high-quality science education, teaching young learners who:* **have a sound knowledge and understanding of key scientific ideas and concepts**
* **are equipped with the scientific skills required for a world where science and technology are essential for day to day life**
* **show concern and respect for our environment and actively play their part in looking after the world we live in**

We aim to provide a progressive curriculum where children are able to build on prior knowledge and skills. Our curriculum has been designed to provide full coverage of the National Curriculum whilst fostering a sense of wonder in our pupils. Teachers plan lessons which are purposeful, engaging and challenging. The content of what we teach is a balance of both scientific knowledge (substantive knowledge) and scientific skills (disciplinary knowledge). The skills of working scientifically are an integral part of the curriculum and the teaching of these skills is embedded in every topic the pupils study. We want our pupils to be able to recognise when and why they are developing these skills. Scientific language and methods of recording are also planned for in a progressive way. It is our intent to ignite in our pupils, an interest in the world around them, curiosity to ask questions and the confidence to explore new ideas, concepts and skills. We want our pupils to understand what and why they are learning and most of all we want our children to love their experience of science in school! |
| **Curriculum Implementation** |
| Our curriculum is designed in line with the suggestions laid out in the Science Programme of Study (POS), 2014. Teachers plan primarily from the Science POS; in addition to this teachers use the following to supplement planning and assessment:* Primary Science Teaching Trust (PSTT)
* PlanBee
* Hamilton Trust
* The Association of Science Education (ASE) PLAN resources

The rationale behind the sequencing of units within each year group is based on consideration of the following questions:1. Do some topics and statements require coverage throughout the year? 2. How complex are the concepts involved? 3. What is the relationship between topics and their related statements within a year i.e. does one topic need to be taught before another? 4. Can a topic be revisited in different contexts? 5. How long does each topic require? Should any be split? Planning for a unit of science includes: * Opportunity for children to demonstrate prior knowledge and raise their own questions at the beginning of a new topic
* A sequence of lessons to cover all key knowledge that children must master as laid out in the Science POS
* Opportunity to explore appropriate types of scientific enquiry including identifying, classifying and grouping, observing over time, comparative and fair testing, pattern seeking and researching using secondary sources.
* Use of the PSTT Focused Assessment of Science (TAPs) plans to assess and monitor elements of working scientifically skills (Plan, Do, Review)
* The use of knowledge organisers to outline key knowledge. These aids are referred to throughout a topic to help embed key knowledge in the long term memory of pupils
* Opportunities to make links to key scientists, past and present, that have contributed to what we now know about a topic
* The inclusion of science specific vocabulary, building on prior vocabulary
* Recognising possible misconceptions that may arise
* Opportunity for pupils to show progress at the end of a unit and demonstrate the key information they have retained
* Possible opportunities for workshops, trips and visits from experts who will enhance the learning experience
* The inclusion of all pupils
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| **Curriculum Impact** |
| In fulfilling our aims the pupils at SS John and Monica receive a comprehensive, well planned science education with opportunities to ask questions and explore answers. Both formative and summative assessment is used to determine pupil attainment. Any pupils who are not meeting age related expectations are targeted during future teaching opportunities to enable them to succeed. Our pupils enjoy a provision enriched by many opportunities in addition to their weekly lessons such as taking part in whole school science week activities, working with other local primary and secondary schools and having opportunity to attend science clubs. Our engagement with the local environment ensures that children learn through varied and first hand experiences of the world around them. Through workshops with providers including Severn Trent and the SCARF Life Education Bus pupils learn about the impact of science on everyday life and also how our actions affect others and the world around us. Through these experiences and from learning about a range past and present scientists our pupils learn about the possibilities for careers in science regardless of gender or race.Pupils leave our school with a good foundation and enthusiasm for their secondary science education.  |