| ‘In a Nutshell’<br>Science | Last updated - 24/11/2023 |
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| **Curriculum Intent** | At New Marston Primary School, our commitment to science education is centred on providing all students, with a particular focus on those facing challenges or having special educational needs and/or disabilities (SEND), a comprehensive understanding of the world and the development of strong scientific thinking skills. Our curriculum is tailored to the specific needs of our diverse student body and local context, ensuring a broad and balanced approach to science education.<br><br>Scientific enquiry skills are seamlessly woven into every topic studied by the students, fostering a continuous and progressive learning experience. This approach allows students to build upon their existing knowledge and vocabulary, embed procedural knowledge in their long-term memory, and cultivate enthusiasm for various scientific subjects.<br><br>Encouraging skills such as observation, investigation, explanation, and evaluation is integral to our teaching philosophy. We aim to empower students to question their surroundings critically, promoting independence in their learning journey. To enrich their educational experience, we incorporate educational visits and welcome guest speakers, providing students with hands-on, immersive learning opportunities that deepen their understanding of scientific concepts.<br><br>Science education, as a core area of learning, is not only about acquiring knowledge of the world but also about fostering a continuous process of inquiry. This not only nurtures the natural curiosity of our students but also instils respect for living organisms and the physical environment. We believe in providing opportunities for critical evaluation of evidence, empowering students to think analytically and make informed decisions.<br><br>Our overarching goal is to ensure that the science curriculum we offer instils confidence and motivation in students, equipping them with the skills and knowledge needed for the next stage of their education and beyond. By nurturing well-rounded, aware, and empathetic global citizens, we strive to prepare our students to navigate the complexities of the world with curiosity, understanding, and a commitment to lifelong learning. |
| **Implementation** | The Science curriculum at New Marston Primary School is not only aligned with the National Curriculum but is implemented in a way that ensures a comprehensive and well-structured approach to the subject. This implementation is evident in various aspects of our teaching methodology.<br><br>Firstly, Science is integrated into the children's termly topic work, creating a cohesive and interconnected learning experience. The topics are carefully linked to the National Curriculum, fostering a clear alignment with educational standards. Our long-term map and vocabulary progression guide this integration, ensuring a systematic and progressive approach to building skills and knowledge.<br><br>Regular revisitation of skills and knowledge is a key element of our implementation strategy. By embedding these concepts over time, we enable students to develop a deep and lasting understanding. This progression is evident year to year, with deliberate connections to prior learning, creating a continuum of knowledge. Our long-term map and vocabulary progression can be found here<br><br>Furthermore, the implementation of Science extends beyond discrete weekly lessons. It is woven into various aspects of school life, including assemblies, STEM week, themed scientific electives, Forest School, the Eco Council, and participation in science competitions. Notably, our students were awarded Blue Peter badges in Term 4, 2022, showcasing their achievements in science.<br><br>To involve families in the learning journey, we provide topic webs outlining the upcoming content, allowing for meaningful discussions at home. Additionally, termly homework grids and topic webs with a specific Science focus are shared with families through our website and class pages such as this. This proactive communication fosters a collaborative approach to education, involving both students and their families in the learning process. |

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| **Learning Environment and resources** | - Working walls and displays are evident, with current learning<br>- Book corners show a range of non-fiction texts<br>- Topical equipment available for children to use<br>- Science-based school visits through year groups, including excursions during residentials for Years 2, 4 and 6 and a Planetarium visit for Year 1<br>- Areas of learning in EYFS<br>- Key vocabulary displayed in classrooms<br>- Forest School area outside |
| **Assessment & Feedback** | We prioritize the significance of formative assessment in the field of Science, aligning with the assessment, feedback, and marking policy at New Marston. Formative assessment, or AfL (Assessment for Learning), is systematically employed across the curriculum to gauge comprehension, shape instructional strategies, delineate the next steps in students' learning trajectories, and solidify knowledge.<br>Our commitment to formative assessment is evident in its consistent application during lessons. Students are consistently challenged to respond comprehensively, articulating their reasoning and thoughts in full sentences. This is facilitated through the use of structured sentence stems. This method not only fosters engagement but also encourages students to articulate their understanding in a thorough and precise manner.<br>The overarching goal is to create a robust and dynamic feedback loop that not only informs immediate teaching practices but also contributes to the long-term development of students' conceptual understanding. By adhering to these assessment principles, we aim to uphold academic rigour and ensure a comprehensive and effective learning experience for all students at New Marston. |
| **Links to EYFS** | In EYFS the children are able to build a substantial understanding of the foundational skills in Science through the intentional development of the continuous provision to include elements of Scientific enquiry and the practice of investigational skills.<br>Children are able to develop their scientific skills consistently through the use of natural and seasonal resources, investigation areas, messy play, adult-supported activities, reading non-fiction or inventor-based books, and singing science vocabulary songs.<br>Children are encouraged to use sentence stems by their adults to develop their scientific thinking skills and also their enquiry skills. Adults are also able to provide them with the necessary vocabulary to explain their understanding succinctly, in a way that is developmentally appropriate for each child. |
| **Other information** | We use learning booklets in Years 2 to 6 for science. We developed this approach in wider curriculum subjects to allow for more customisation and flexibility so work can be adapted to the needs of the class and individual students. Booklets allow our teachers to design work in a visually engaging way that captures students' imagination but also allows them to record their work in a tangible way, reinforcing their understanding of scientific principles and theoretical concepts.<br><br>Our booklets provide a structured format for students to track their progress and reflect on what they've learnt. This self-assessment is beneficial for students and teachers to understand the level of comprehension and identify areas that may need further clarification. Our teachers find that learning booklets offer a more direct alignment with the national curriculum objectives and standards. Teachers are able to tailor the content to meet the objectives outlined in the curriculum and focus on key learning outcomes. |