

An Introduction to.....Mathematics

Intent

The intent of the Mathematics Department at the Abbey School is to provide all students with a high-quality and balanced Mathematics education, building a foundation of knowledge and skills required to understand the world. Mathematics is an interconnected discipline, essential to life and the world in which students live and work. In a rapidly changing world, it is our intent to equip students with the knowledge they need to progress into further academic and vocation studies and the world of employment. We want them to be prepared with the ability to think critically, apply logic and be confident to explore all avenues with the tools they have developed within their education, navigating their next steps with confidence. We intend the curriculum to be rigorous, sequenced and cohesive, engaging students at all levels and advocating that maths is more than just numeracy. Nurturing the mathematical ability of students through the inclusive structures and features of an Abbey education allows students to rise to high expectations, develop their ambition and awareness through cross-curricular and everyday applications, and ignite interests in applied and practical mathematical connections that may have previously been unbeknownst to them.

In response to the COVID19 pandemic and the disruption felt in our students' education, we have been working on the aim to rebuild the confidence students have lost during these unusual times and support them in the catch-up of missed learning time. Each individual story is different, but we aim to provide opportunities for every student to succeed with adjustments to their learning journeys and curriculum sequence to meet their needs as we continue to monitor the situation and the personal achievements of individuals.

Implementation

The implementation of the mathematics curriculum is centred in the spiralled approach to common core areas, essential at KS3, and a foundation for KS4 extended knowledge. The scope of the curriculum encompasses the full National Curriculum, allowing us to lead students through a mathematics education with varying levels of depth to best suit individuals.

Our curriculum is built upon the idea of ambition for all and this encompasses all areas of student learning. Big questions offer inclusive scaffolds for students to develop and expand their knowledge. Purposeful practice with carefully planned assessment and feedback means we know our pupils well and can adjust our methodologies to best support their needs. Planned consolidation follows exert-led lessons with a considered and rigorous Scheme of Learning, promoting department cohesion and a common approach as students progress through the school. This, alongside the Abbey Lesson structure, offers clear expectations and a knowledge rich curriculum to maximise the potential of each individual.

Mathematics is taught in distinct units, where time is given to explore and embed concepts through open and inclusive Big Questions, developing a deeper understanding through varied problems and applications. However, key concepts are frequently taught, applied, and connected throughout the year and across different years in a coherent sequence. Lessons are planned so that new knowledge and skills build on what has been taught before. This builds confidence and encourages students to transfer skills across subjects and into real-life applications as students have opportunities to revisit learning, to understand the development of the topic and how it links with other areas. Numeracy and vocabulary are promoted consistently in activities and within Knowledge Organisers.

We employ a didactic teaching style and opportunities for children to learn and develop their Mathematical skills and competencies, with achievable and appropriate approaches. The main aim of all lessons is to develop children's knowledge, understanding and skills, applying these to a variety of contexts once confident in core processes. We use varied and frequent practice within lessons, supported with teacher expertise and modelling. Students must have the opportunity to approach challenging and meaningful problems, explore possible solutions and approaches, combined with the consideration of alternative strategies from their peers. Students take an active role in lessons, are encouraged to ask questions and contribute to an inclusive and positive working environment where students are motivated to succeed. We aim for students to persevere and construct viable SHAPED arguments, with precise and accurate working, drawing on confidence to apply a range of mathematical techniques to new and unseen problems in the interconnected discipline of

Mathematics. Call and response, low stakes quizzes, numeracy support and the encouragement of no-opt out learning means each student can make the most of individual lessons. This is combined with the support of the Abbey Learning journey including engagement, teamwork, resilience and altruism as part of a wider community.

In response to the COVID19 pandemic, we have implemented an addendum to the Scheme of Work to support the delivery of the curriculum with the possibility of knowledge gaps and lost learning time throughout the last 18 months. Topics were restructured to deliver content that needed advanced teacher support before addressing later units at an alternative time, and we have considered our lesson allocations to ensure all students are able to rely on a cohesive and inclusive curriculum, despite variations in the level of depth able to be explored. As we begin the next academic year, this will include revisiting this information with recapping and connections built in. Exam groups will continue to be kept up to date with latest exam specification support and will include guidance in the use of any published materials, once we hear more.

Impact

The resulting impact on students is the development of confident, efficient, and flexible problems solvers, achieved by providing authentic and rigorous opportunities to consolidate, embed and apply mathematical knowledge. Students enjoy the development of their own learning in a supportive environment, and as many begin to consolidate their next steps away from the Abbey School, they are able to feel confident in their mathematical understanding and apply this knowledge to their next area of interest in further study or employment. They are able to think creatively and draw on the positive ethos of their maths lessons to move forward as mathematically confident members of society. The use of assessment and feedback develops resilience, allowing students to reflect on mistakes and move forward with the ability to constructively analyse. Thoughtful data analysis provides a clear understanding of differing groups of students' needs, which becomes the foundation of carefully planned lessons with appropriate supports and access points to authentic relatable learning. Students feel confident to approach routine and non-routine problems, can reason with mathematical language and feel secure in their own mathematical knowledge.