



MATHEMATICS: CURRICULUM STATEMENT

- We aim to develop in our students the confidence to reason mathematically.
- We strive to nurture an awareness of the inter-connectness of our discipline with others, and its applicability in real-life.
- At our school, we perceive mathematics as a language, with its own terminology, notation and structure, used to describe numerical, geometric and graphical relationships – across all key stages, teachers assist students to develop this ‘maths language’.
- Our teaching emphasis is on our students developing procedural fluency as well as conceptual understanding, so that they are best equipped to apply their acquired skills and knowledge creatively to solve problems in unfamiliar contexts, and are prepared for their GCSEs, A-levels and beyond.

Our curriculum (from Year 7 to Year 13) encapsulates the *Big Ideas of Mathematics*, supporting a structure where connections and relational understanding are crucial.

Building a solid foundation ...

Our National Curriculum has a spiral structure, which allows students to revisit topics each year at increasingly complex levels. In Year 7 and 8, our students embark on a ‘no limits’ curriculum journey. This problem-based approach to learning provides an opportunity for students to apply techniques learnt during the Core Maths Lessons in cross-curricular assignments. During the Core Maths lessons in these first two Key Stage 3 years, we focus on laying a solid foundation of basic skills, aiming to foster endurance and curiosity in our students.

Paving the way ...

Our focus in Year 9 and 10 is to investigate most of the specifications outlined in the Key Stage 4 curriculum, developing mathematical rigour in these. To accommodate the different needs of our students we follow a Foundation and Higher Tier of study. Regardless of level, our expectations serve to engender an ethos of independent study and resilience, fostering student ownership of learning – necessary skills for Year 11, Sixth form, the workplace, college and university.

Aiming high ...

Our goal at the Wykhams Park Academy in Year 11 is to review and revise GCSE concepts encountered in the past two years. Assessment forms an integral part of this year – serving to give feedback to both students and teachers in continually monitoring progress and informing teaching. Students and staff perceive this as the year of fine-tuning skills and ensuring that concepts acquired are transferable. Our game plan is to revisit key topics in preparation for the final GCSE examinations.

Nurturing excellence ...

Whilst A-level mathematics builds on the GCSE curriculum, many new topics, such as calculus, logarithms, series and new methods of mathematical proof are introduced. Students who continue with mathematics at this level, will learn to use graphical methods and calculus to gain a greater understanding in the behaviour of algebraic functions. They will expand their knowledge on applied mathematics, learning specialist statistical techniques and mechanical laws with numerous real-world applications, which includes using Newton’s laws and hypothesis testing. Students who opt to do Further Mathematics will grapple with complex numbers and their applications in geometry, and use matrices to gain a deeper understanding of how to transform shapes. In addition, they will use vectors to represent the relationships between objects in 3D space, and differential equations to model the behaviour of complex systems over time.