



## MATHEMATICS DEPARTMENT PROFILE

The Mathematics Department at OPGS believes that the act of learning mathematics wires students' brains for problem-solving; it is a way to develop tools, methods and tactics to solve problems that they may never see again, but it is these skills and techniques that will help them approach problems in a practical sense when they encounter them in wider life.

**Resources:** The department comprises six rooms, each equipped with an interactive whiteboard. Teachers are provided a laptop, and access to myriad resources that are often shared between members of the department. There is a well-stocked maths office where teachers are able to work during non-contact time. Teachers and students make regular use of Mathswatch, Desmos and Autograph to aid teaching and learning.

Students in Years 7 and 8- Foundation years cover the fundamental skills and knowledge required up to GCSE Grade 5, building upon their numeracy from Key Stage 2, ensuring a strong fluency in algebra, and developing their deep understanding of all areas of the curriculum. Use of various techniques, such as mastery and flipped learning, not only engages the students in the subject but creates independent, resilient and reflective learners who are able to apply their knowledge to real-world problem-solving scenarios.

The Year 9 Keystone curriculum aims gives opportunities for students to participate in practical work, group work, investigations and e-learning. There is a large emphasis on SMSC aspects of mathematics to enable students to understand the importance of mathematics in the world today. Furthermore, the course emphasises building on the foundations of Years 7 and 8 and prepares for the subsequent start of GCSE. To this end, students are in ability sets, enabling students to master topics at the appropriate pace.

In Year 10, students stay in sets and will commence the GCSE Higher Tier. Students are given regular exam-type questions throughout, thus increasing confidence in problem-solving skills. Students therefore become more familiar with non-routine problems eg where they will need to use multiple topic areas and skills to answer a question.

Students in Year 11 complete the GCSE course and revise content, so that they master key topic areas in preparation for the exam. Regular exam questions and practice papers ensure that they are increasingly familiar with the topics and the type of questions that appear in the GCSE. By the time the GCSE season commences, students are well drilled on what to expect. Students in set 1 study the OCR Level 3 Free Standing Mathematics Qualification in Additional Maths and students in set 2 study AQA Level 2 Certificate in Further Mathematics. Both courses enhance preparation for GCSE, ensuring that students are A-level ready, and they provide a useful head start on their course, should they wish to take it.

A-Level mathematics is a popular choice for students at OPGS, often running 3 groups in addition to a separate further maths group. A-Level focuses on flipped learning, aiming to create independent, resilient mathematicians, with less dependence on a single resource; this also ensure that the students are more inquisitive and confident problem-solvers.

Students choose Further Mathematics if they have had previous success in the subject and have an irrefutable love of mathematics. Students dig deeper in common A Level topics, expanding their understanding, but also encounter new concepts. The aim is to broaden top mathematicians' minds, explore new areas of the subject to help satisfy their inquisitive minds and provide them with a taste of mathematics for higher education.

**Staffing:** The department currently consists of ten teachers, including a Head of Department, KS4 coordinator and KS3 coordinator. All staff have a range of backgrounds and possess different skills within subject and are able to teach up to A-Level. Each full-time member of staff has their own room.

**Allocation:** The school timetable operates on a two-week cycle. Mathematics is taught to years 7, 9, 10 and 11 seven times a fortnight, whilst year 8 have six lessons per fortnight. In the 6<sup>th</sup> form, students have 9 lessons per fortnight.

The successful candidate will also be a form tutor.

**Results:** Outcomes at GCSE and A Level for 2022 were exceptional.

GCSE Mathematics:

61% 9 – 7

99% 9 – 5

FSMQ: Additional Mathematics

84% A-B

A - Level Mathematics:

63% A\* - B

A – Level Further Mathematics

88% A\*- A

If you have any further questions regarding the department, please contact Mr J Rhys, [jrhys@opgs.org](mailto:jrhys@opgs.org)