



Mathematics

Curriculum Information

How Has our curriculum been designed?

Intent

At St Augustine, all students follow schemes of work that are based on the National Curriculum (Non-statutory guidance for teaching Maths at KS3 - Department of Education, Edexcel GCSE Mathematics Specification and Edexcel GCE A-Level and Further Maths Specification). In line with our Mastery approach, we recognise the need for the students to make sense of their own learning (principle of coherence), and through a “small steps” approach, that invites connections and thinking, we aim to facilitate that. We conceive of the GCSE curriculum as a five-year experience but with the goal not to focus the students' minds and efforts from an early age on exam practice but, if anything, to do the opposite. In fact, and this is particularly true at KS3, we afford the students plenty of time and opportunity to develop fundamental skills and understanding which will enable them to progress smoothly and confidently to further knowledge. Time to acquire new knowledge and to consolidate it, through repeated practice, is embedded in our schemes of work.

We do also set the students by attainment, which allows for a more personalised approach to learning by adapting the pace of each class (nonetheless, we do favour movement in between groups whenever the students are able to do so).

At Key Stage 3, students will continue to develop their skills, in particular the numerical processing skills, using written and mental methods. We also recognise the importance of geometrical reasoning skills for their crucial emphasis on the ability to solve problems. Through this work, the students will begin to learn to break down complex problems into simpler parts and to explain their methods in arriving at a solution.

At Key Stage 4, we focus more strictly on the knowledge required by the GCSE syllabus. At this stage, the students will consolidate the knowledge acquired during their KS3 experience and will build on it by extending it to the Foundation or Higher tier of entry. At KS4 the students will: develop fluent knowledge, skills and understanding of mathematical methods and concepts; acquire, select and apply mathematical techniques to solve problems; reason mathematically, make deductions and inferences, and draw conclusions; comprehend, interpret and communicate mathematical information in a variety of forms appropriate to the information and context.

At KS5, the students will continue to build on the knowledge acquired at KS3 and 4. We follow the EDEXCEL syllabus and do offer the opportunity to study Further Maths for the more talented students who want to progress to study Maths at University.

Implementation

We follow the EDEXCEL curriculum at all Key Stages. In particular, at KS3 and 4 we have created a series of lessons that follow a Mastery approach. More importantly though, we dedicate departmental time to develop our pedagogy, share ideas, refine our understanding of a “coherent” approach to the teaching of Maths.

We do believe that a set of pre-prepared lessons by itself will not be necessarily conducive to good practice. It is the time spent discussing “how and why” we do something that will enable us to adapt the resources to our needs and develop our own style of teaching.

Probably, the most common difficulty experienced by our students is the lack of that cultural capital which enables them to approach contextualised problems more effectively. Questions which are particularly worded tend to be more of a problem and in the department, we seek to expose students frequently to more complex and worded problems within each area or topic being studied. We also ensure that Key words are a part of every lesson presentation. We encourage students to accurately use these words in the lesson as they develop their oracy and language skills.

The links with local and national businesses have led, at KS3, to series of lessons being devised and delivered by those members of the business community involved in the projects. The students have had the opportunity to use and apply their mathematical skills to real life situations and have thus found a renewed interest in the subject. In addition, we have, in the past, developed and implemented activities that, through group work, have given the students opportunities to engage with real life scenarios.

In the department, we have a policy of frequent, low stakes, formative assessments to help students to systematically consolidate their understanding of a topic. In our approach, we tend to conflate the summative with the formative moment, as we place great emphasis in the moment of feedback in class, adjuvated by clear modelling. At these times, the students are expected to annotate in green pen (not just ticks or crosses), thus making the most of these reflective moments.

The policy of green pen usage extends beyond the marking of tests as it is an integral part of everyday practice. By putting the emphasis on modelling and on the why, we encourage links and connections rather than mere recollection of facts. However, there are more formal times for assessment for all key stages that serve the purpose of shaping future intervention as well as to give an indication of possible movements between teaching sets: Year 7 Initial test at the end of the first half term + end of year test; Year 8 end of year test; Year 9 end of year test; Year 10 mocks (Mid-year and end of year, preferably); Year 11 two sets of mocks, during the second and the fourth half terms; Year 12 mocks in January and June; and Year 13 Mocks in October and February.

Impact

Before the onset of COVID, the last set of external examinations revealed a department still performing well at all key stages.

In particular, at key stage 4 we registered: Positive P8 (0.16), although on a declining trend, indicating that the department is still performing above expectations; Positive residual (0.18) indicating that students are still performing better in Maths than the bulk of the other subjects. Over 80% of our 2021/2022 Year 11 cohort achieved a grade 4 – 9 giving us a positive residual of 0.13. At key stage 5, the performance was good returning an overall ALPS of 2. The average Grade for A-Level Maths was A- and the average Grade for Further Maths A-Level was A in the June 2022 Examinations.

At key stage 3 the progress of the students has been good as supported and evidenced by our systematic assessment regime.

The work that links to the application of maths skills in real life context is to be found within: The work-related learning links, where sets of specific and “practical” maths lessons have been delivered by specialists in the sector; Group work resources, where the material has been collated to allow for the application of those skills in real life contexts.

We have had good retention of students in the subject at A-Level, with consistently big numbers that led to two teaching sets at both year 12 and 13. Our Further Maths Intake has increased by over 300%.

Research Links/Professional Links

Non-Statutory Guidance for Teaching Key Stage 3 Maths - [Click here](#)

Teaching for Mastery - [Click here](#)

Pearson Edexcel GCSE Maths Specification: [Click here](#)

NCETM Guidance for Marking and Feedback for Secondary Mathematics Teaching: [Click here](#)

Sequencing

Strands and topics have been sequenced logically to allow students to build on prior knowledge and skills thereby cementing their understanding of key mathematical concepts as they matriculate from one key stage to the next. It is designed to ensure that we systematically revisit topics, which leads to a progressively deeper understanding of the underlying principles and ideas of the subject.

Key Stage	Level	Qualifications	Exam Board
4	GCSE	Mathematics Higher and Foundation	EDEXCEL
5	GCE	A-Level Math Further Math A-Level	EDEXCEL