

KS3 Curriculum Overview

Maths

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Curriculum Intent including key skills and key concepts

Overview
Through the first 18 months of KS3, the entire content of the KS3 Programme of Study is covered in depth. Topics typically last 5 or 6 weeks. All classes follow the same schemes of work with individual objectives given an equivalent GCSE grade allowing teachers to plan appropriately. Schemes also point to a range of resources including

- Text book exercises
- Variation theory practice from www.variationtheory.com
- Tasks linking to other areas of Maths from www.ssdd.com
- Relevant rich tasks allow students to develop their reasoning and problem solving skills

The last half of Year 8 revisits key areas from the Programme of Study, allowing both the identification of gaps in understanding, and the extension into GCSE content.

In addition we look to develop the problem solving skills needed for GCSE by completing a number of 3-act Maths tasks. These are closed problems, but students need to decide what information they need and what techniques to use in order to solve them.

Assessments are built into this scheme and are cumulative in nature, covering the material covered in that school year to date. Skills have all been levelled using GCSE grades.

Basic calculation skills are practiced regularly. As a transition project, students record their preferred methods of calculation at the end of Year 6 in the exercise book they use in Year 7. Weekly starters reinforce this. Students are encouraged to continue using the techniques they learnt at primary school.

We have modified our algebra and handling data content to better support our colleagues in Science and Geography. To support Science, we teach a module on rearranging formulae in both Year 7 and Year 8. To support Geography, we make sure that appropriate skills are taught at the right time, and that the terminology we use is common.

Year 7
In this year, students study Decimals and Place Value, Fractions, Measurement, Percentages, Algebra and Handling Data in depth. In addition they complete a module on Rearranging formulae and a Data Handling project.

Year 8
Students continue the KS3 Programme of Study, covering Probability, Ratio and Proportion, Algebra, Integers and Indices and Angles and Shapes. They then go on to revisit and extend the Measurement, Percentages, Algebra and Data Handling covered in Year 7, along with completing more rearranging formulae practice.

Year 9
Because of the increased demands of GCSE, we start our GCSE scheme in Year 9. This allows us to complete the syllabus by January in Year 11 and move to diagnostic revision using the Pinpoint learning platform. See the KS4 document for more details.

Rationale for KS3 Curriculum

At its core, the department uses growth mindset principles. We avoid using the word 'ability' believing that, through purposeful practice, the vast majority of students can enjoy success in this subject. This is reflected in the feedback we give to students and in the language we use in lessons.

The expansion of the KS2 curriculum means that much of the work that used to be covered in KS3 is now covered at primary school. At the same time, GCSE and A level specifications have seen a step change in difficulty, and exams now require much more problem solving.

Both of these mean that our KS3 curriculum has had to change radically over the last few years.

Our scheme of work in Years 7 and 8 is based around the principles of mastery, with students being encouraged to develop fluency with the different concepts, but also looking to develop resilience, reasoning and problem solving skills. Pupils who grasp concepts rapidly are challenged with rich sophisticated problems rather than accelerating through to new content.

Relevant Department Interventions and Support and Access Arrangements

We run an intervention programme in Years 7, 8 and 9 and have a specialist TA employed to deliver it. At the start of each year she works in classes with our lowest achieving students. Towards Autumn half term she identifies students in need of additional support. This is based on their prior attainment data, and on her observation of them in class. They are extracted for a period of roughly 4 weeks. In these groups, students do a mixture of both the current topic from the scheme of work and intensive numeracy practice. Students are pre and post-tested and the data is used to decide if they can return to normal lessons or stay in the intervention group. The process is then repeated throughout the year. This data driven approach has enabled us to support our lowest achieving students and prepare them for GCSE.

Enrichment Opportunities

Problem solving is embedded in our scheme of work, using both rich tasks and 3 act Maths tasks. See the Curriculum Intent section for details.

Our 2 highest achieving groups in each year are entered into the UKMT Maths challenge. The profile of this competition has been raised in recent years due to the similarity between its questions and the problem solving questions that are now appearing at GCSE.

Our top Year 7 and 8 students have also used the Simon Singh Parallel website to expose them to the relevance of Maths in the world at large.

Students use Numeracy Ninja resources in the Year 7 tutorial programme, and we plan to extend this into Year 8.

In 2018/19 we ran a Maths day, with a visiting presenter delivering a practical seminar to students in Years 7, 8, 9 and 10.

Links to Key Stage 4 and 5

The importance of developing the problem solving skills required for GCSE, alongside fluency, resilience and reasoning is writ large in our KS3 schemes of work.

When developing the KS3 scheme of work we were conscious that it is more important to challenge students with rich, sophisticated problems rather than accelerating into GCSE work. However, some opportunities to go beyond the KS3 scheme of work are taken. For example, higher achieving Year 7 students could cover basic Trigonometry as part of their work on Measurement.

We are keen that suitable KS3 students aspire to continue their study of Maths into KS5. The department has multiple KS5 groups in both Year 12 and 13, so KS3 students are used to seeing them around the department. Some KS5 students have also acted as teaching assistants in our KS3 classes.

Attached Documentation

Document	Tick if present
Department Improvement Plan	
Exam Review	
Curriculum and Progression Map for Year 7-13	