

Maths Intent Statement

Intent

Maths is deemed important because of its applications in reasoning and problem solving, which are required in so many walks of life, and also because it underpins so many other subjects, such as science, computing, business and design.

It is a compulsory subject, that students have to study until the end of year 11, or if they don't achieve a grade 4 or higher, until the end of their 18th year, regardless of whether they stay at school, go to college or do an apprenticeship. This emphasises the importance place on maths by the Government, Department for Education, colleges and universities and employers.

Whilst maths can be divided into Key Stage 3 and Key Stage 4 (GCSE), most topics are dependent on other areas of maths and require knowledge and understanding of these, before other areas can be studied, let alone be applied to questions in context.

We prefer to think of maths using the analogy of building a house. If the foundations are strong, then the house will withstand so much more in the years that follow. When the foundations are weak, the integrity of the house will be reduced, regardless of the time and effort put into constructing it.

Following the success of the Shanghai 'Method of Mastery', many primary schools, including the majority of our feeder schools, now follow a mastery model in their teaching of maths. Mastery is defined as the process of internalising and understanding a complete area of study. This supports the principle of fluency, where the students have a firm grasp "of the fundamentals and it is important that students know these inside out, back to front and in any combination" (Mathematics Teaching).

Goal for every student

Whilst students often arrive from primary with the fundamentals, it is the firm grasp, enabling the all-round application in many contexts with a conceptual understanding, that needs developing. We believe that mastery provides the required foundations to enable students to gain the knowledge and understanding required, both for GCSE and beyond, whilst simultaneously giving them the confidence that they can "do" maths.

To this end, students in years 7 and 8 follow a mastery curriculum. The topics studied are shown in the table below. For this reason, it could be argued that we follow a 2-year Key Stage 3 curriculum, moving on to a 3 year GCSE one. We prefer to think that, having worked on these essential skills, the foundations, we move on to the other aspects of the subject, that are underpinned by them, for the remaining 3 of the 5 years.

This is well planned through our progressive learning cycles where each student carries out entry tests, exit tests and GEM tasks for each topic.

Implemented pace

| Year 7 Mastery Units | Year 8 Mastery Units |
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| Place Value | Fractions (part 2) |
| Addition and Subtraction | Percentages |
| Multiplication and Division | Algebra (part 2) |

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| Fractions (part 1) Statistics (part 1) Negative Numbers Algebra (part 1) Lines & Angles | Circles and Area Ratio, Proportion & Rates of Change Statistics (part 2) 3D Shapes TO FINISH: Cross-curricular Statistical Project with Geography. |
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Impact

Students are set for maths from early in year 7. This is based upon both their Key Stage 2 Standardised Score and our initial baseline tests. We regularly analyse results and progress to ensure that students are in the most appropriate set for them. As well as supporting their learning, we believe that sets reduce the chances that students feel they are struggling, in relation to others in their class.