# Mathematics Curriculum Plan

| **Year 8** | **8 Discovery Mathematics** |
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| Curriculum overview | **Mathematics** is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.<br><br>**Aims**<br>The national curriculum for mathematics aims to ensure that all pupils:<br>• become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.<br>• reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language<br>• can solve problems by applying their mathematics to a variety of routine and nonroutine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.<br><br>**Discovering Mathematics** embodies the Mastery approach to Mathematics, focusing on manipulative, representation and reasoning to embed deep conceptual understanding. This will impact on our delivery of Mathematics at KS4 as the assessment priorities for GCSE have changed with a greater focus on reasoning, problem-solving and fluency.<br><br>The Discovering Mathematics series for KS3 continues with the Book 2 A-C series, which differentiates between learners who are behind at the end of Year 7 (Book A), those who are where they need to be (Book B) and those who need the opportunity to extend themselves significantly further (Book C). The extension work is designed to deepen understanding and develop reasoning skills rather than race ahead to new topics.<br><br>In addition, each book has exercises that are divided into three levels, so students can clearly identify differentiated entry points. Through formative assessments, our teachers assess where different students need to start each exercise so low, middle and high ability learners are accommodated. |

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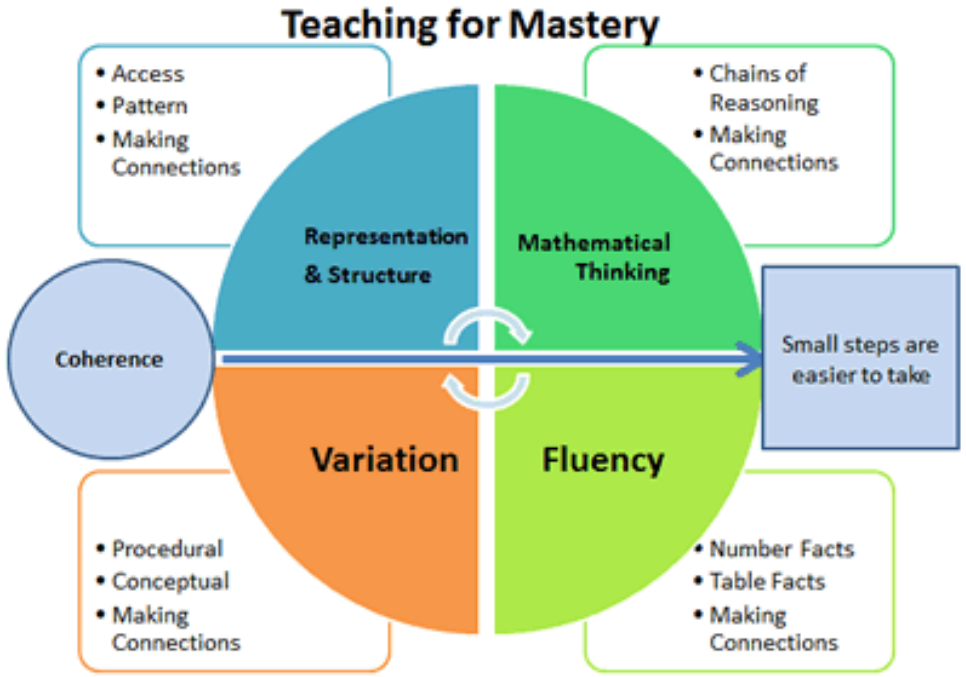
| | The resource is supported in its entirety through the MyMaths online platform where we encourage our Year 7 students to work digitally as well as in their exercise books.<br><br>The Discovering Mathematics series has been designed around the Key Stage 3 specification and St Michael's has played a significant role in its early delivery as you can see from this clip.<br><br>http://fdslive.oup.com/www.oup.com/oxed/secondary/maths/Discovering%20Mathematics%20course%20video%20(1).mp4<br><br>All of this is supported by an emphasis on key vocabulary where accurate technical language is promoted, particularly through the whole school Oracy program. The latter is further enhanced by lessons planned around the Five Big Ideas of Mastery and textbook class activities which support small group work.<br><br>  <br> |

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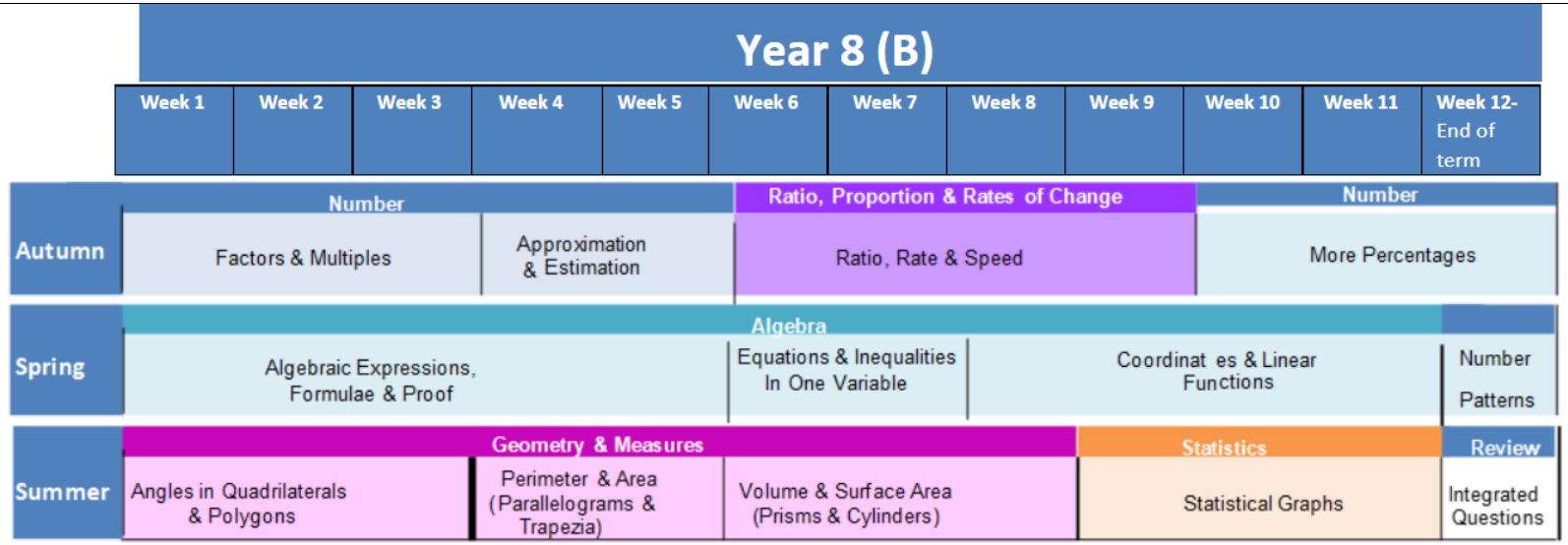
| | Number: Primes, Factors and Multiples; Estimation and Approximation;<br>Algebra: Expressions, Formulae and Proof; Equations and Inequalities; Coordinate Plane and Functions; Number Patterns (sequences)<br>Ratio and Proportion: Ratio, Rate and Speed; further development of Percentages<br>Geometry and Measures: Perimeter, Area, Volume and Surface Area of Prisms and Cylinders; Angle Reasoning; Transformations, Symmetry and Congruence<br>Statistics: Statistical Graphs, including Line, Pie and Scatter; Use and Misuse of Statistical Graphs |
| Curriculum Plan at a glance |  |
| Assessments | 1. Formative assessments constantly take place to ensure gaps in learning are addressed in a timely fashion.<br>2. Online Skills Tests for each chapter<br>3. Three assessments take place throughout the year, one in each term of the year.<br>4. Pupils are given all the details required in advance to help prepare for the exams.<br>5. Students assess their progress and identify key areas to improve upon, utilising the MyMaths Library to support themselves to become independent learners. |
| Useful Links | Kerboodle - https://www.kerboodle.com/users/login<br>Mymaths - www.mymaths.co.uk |

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| | On the PiXL Maths App platform, Year 8 students continue with the Arithmetic Challenge, working towards the Grade 1-3 and Grade 4-5 Challenges for those who need extending: https://mathsapp.pixl.org.uk/<br><br>Where necessary, students are advised to look at Corbett Maths which has helpful videos to support their learning: https://corbettmaths.com/contents/ |
| Maths Department | mgloor@stmichaelscs.org, Mrs Gloor, KS3 Maths Co-ordinator<br>rakhtar@stmichaelscs.org Mrs. Akhtar Maths Lead Practitioner |