

Witchford Village College – Curriculum Mission Statement

Subject: Maths	Components			Composite	KS3 Mission Statement
	What new knowledge/content do we introduce?			What do students <i>do</i> with this knowledge?	<i>By the end of year 9, a WVC student will...</i>
	Year 7	Year 8	Year 9		
<p align="center">Autumn</p>	<ul style="list-style-type: none"> • Exploring rounding numbers through the use of different methods such as significant figures and estimating. • Exploring the relationship between square numbers, cube numbers and roots. • Writing numbers in standard form and how these numbers are interpreted and displayed on a calculator. • Sequences and patterns in a real life. 	<ul style="list-style-type: none"> • Algebraic manipulation including expanding of brackets and factorising, leading into geometric and quadratic sequences. • Calculating interior and exterior angles of polygons. • Fraction arithmetic. • Transformations – rotations, reflections and translations. 	<ul style="list-style-type: none"> • Indices and Standard Form. • Compound measures such as a speed, pressure and density. Converting between units of compound measures. • Algebraic proof, linked to sequences and geometry. • Bearings. • Solving the most complex linear equations including fractions and multiple terms. • Relative frequency. • Similarity and Enlargements. • Interquartile range, cumulative 	<p>Students will progressively be expected to give in depth reasoning and rationale as to why they have reached certain conclusions, with advanced/confident mathematicians being able to give alternative methods and strategies for solving a problem.</p> <p>The levels of application that students practice and develop in Year 7 and Year 8 result in them using mathematics more confidently in every-day life.</p> <p>It is vital that our practitioners deliver our curriculum in a way that promotes a thirst for knowledge as this encourages students to study maths past their</p>	<p>Be Confident in the 4 key areas of Mathematics:</p> <ul style="list-style-type: none"> • Number (Rounding, Fractions, Decimals, Percentages, Indices) • Shape/Measure (Area, Perimeter, Volume of shapes) • Algebra (Simplifying expressions, Collecting terms, Plotting graphs, Expanding, Factorising, Solving equations) • Averages and data (Presenting, Analysing and

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			frequency and box plots.	GCSE qualification. Research suggests that students who have experienced a challenging and enriching KS3 are more likely to assert themselves purposefully at key stage 4 as well as to consider Mathematics as an option at Key Stage 5.	interpreting data) In addition students will be able to take the above content/skills and apply them to mathematical problems.
Spring	<ul style="list-style-type: none"> • Decimal Arithmetic and the relationship between fractions decimals and percentages. • Drawing and interpreting graphs of linear functions. 	<ul style="list-style-type: none"> • 3d shapes, representation and volumes • Fractions decimals and percentages with a focus on percentage problems • Plotting straight line graphs and the relationship between a graph and its equation 	<ul style="list-style-type: none"> • Right angled trigonometry. • Circles, including Sector Area and Arc Length. • Graph working including parallel and perpendicular lines and non-linear functions. • Constructions and Loci. 		
Summer	<ul style="list-style-type: none"> • Writing and solving equations and basic inequalities. • Calculating averages and presenting data using bar charts and pie charts. • Calculating Ratio and distribution in real life scenarios. 	<ul style="list-style-type: none"> • Metric units and solving problems using direct proportion. • Collecting data, data and analysing data sets which may need to be grouped. 	<ul style="list-style-type: none"> • Simultaneous equations. • Advanced ratio. • Surds. • Algebraic fluency and quadratic equations. • Advanced problem solving from UKMT. 		

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<p><i>Rationale for these specific components and composite outcomes:</i></p>	<p>Our year 7 curriculum relies on students to retrieve the challenging content which is studied during year 6 as well as encouraging students to look at reasoning such as why? And how? They are not only expected to understand how to answer a question but also apply their knowledge and understanding to complex problems.</p> <p>The curriculum is designed to reflect the fact that although student experiences at KS2 may be mixed, the majority of students joining the school will have sound numeric skills. The curriculum is designed to enable students to quickly explore other areas of mathematics not covered at KS2, whilst still providing support or those students who are weaker at basic numeracy.</p>	<p>Throughout year 8, students explore reasoning in Maths and our more able students are introduced to problem solving more regularly in lessons. All students will work on their retrieval and understanding of core skills such as expanding brackets, solving linear equations, calculating averages and understanding different types of number. Year 8 prepares students for the step up in content and difficulty in Year 9. A large number of able students are encouraged to look at Grade 4-6 skills from the GCSE SOL to 'refresh' their memory and build confidence in the more accessible content prior to Year 9.</p>	<p>The most challenging year of the Key Stage 3 curriculum, students are preparing themselves for the start of their GCSE curriculum in Year 10. Over the course of the 3 years students of Chesterton would have explored large quantities of the GCSE curriculum and also honed their skills in applying knowledge and skills to problems. More able students would have focused on a number of Grade 7/8 topics in Year 9 such as Proof, Quadratics and Surds</p>		
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How is challenge embedded into the KS3 curriculum?

- Students are encouraged each lesson by their teacher to aim to extend their learning by engaging in discussions about their topic as well as attempt International maths challenge problems to broaden knowledge and application.
- Students in Mathematics are given aspirational targets on a lesson by lesson basis with clear signposting referencing GCSE grading, giving them an indication of their performance compared to that of a year 11 student.
- Setting enables each student to be challenged at their most appropriate level

How does the KS3 curriculum above build on previous learning in KS2?

- The main purpose of our Key Stage 3 curriculum is to challenge all students and for them to aspire to maximise their potential in the subject.
- From discussion with local primary schools, the Key Stage 2 curriculum places a large focus on the skill element of mathematics and learners are expected to remember and retrieve key facts methods to answer questions. Our Key Stage 3 curriculum takes their core skills and places the emphasis on application and problem solving. This allows for a deeper understanding of the topic and allows students to feel confident in applying knowledge in a number of ways.
- Setting enables students who have mastered skills at KS2 to move swiftly onto new content