

The English Martyrs Catholic School and Sixth Form College



<u>Year 10 Maths Higher</u>	<u>Module 1</u>	<u>Module 2</u>	<u>Module 3</u>
<u>Topic Theme and Intent</u>	Within this first Module, Year 10 students will cover 5 main areas of the curriculum which are: Number, Algebra, Ratio and Proportion, and Shape.	Within Module 2, Year 10 students will cover 5 main areas of the curriculum which are: Data, Number, Algebra, Shape and Ratio and Proportion.	Within Module 3, Year 10 students will cover 5 of the main areas of the curriculum which are: Number Data, Algebra, Shape and Ratio and Proportion.
<u>Knowledge and Skills</u>	<p><u>Data:</u> Two-way tables, tree diagrams, independent & conditional probability and Venn diagrams</p> <p><u>Number:</u> Limits of accuracy, Negative & fractional indices.</p> <p><u>Algebra:</u> Factorising and solving quadratics, quadratic formula, completing the square, linear & quadratic simultaneous equations</p> <p><u>Ratio and Proportion:</u> Congruent triangles, similar shapes including length, area & volume</p> <p><u>Shape:</u> Transformations including negative and fractional enlargements</p>	<p><u>Data:</u> comparing stem & leaf diagrams, box plots and cumulative frequency</p> <p><u>Number:</u> percentage change, compound interest and recurring decimal to fractions.</p> <p><u>Algebra:</u> Quadratic sequences, cubic, reciprocal graphs and exponential graphs</p> <p><u>Shape:</u> 3D Pythagoras & trigonometry, Sine & Cosine rule and area of a triangle</p> <p><u>Ratio and Proportion:</u> Direct & inverse proportion using k, combination of two proportions, speed, density, pressure, distance-time graphs, area under a graph and rates of change.</p>	<p><u>Data:</u> Histograms</p> <p><u>Number:</u> Surds, product rule for counting and standard form.</p> <p><u>Algebra:</u> Expanding triple brackets, quadratic inequalities, equation of a straight line, gradient between two points, parallel & perpendicular lines and equation of a circle</p> <p><u>Shape:</u> Circle theorems and their proofs, arc length & area of a sector (working backwards), volume & surface area of cylinders, pyramids, cones and spheres.</p> <p><u>Ratio and Proportion:</u> Capture/recapture</p>
<u>Literacy Links</u>	<p>Reading: Be able to extract the correct information to construct a two-way table.</p> <p>Writing: Describing transformations.</p> <p>Oracy: Explain the difference between independent & conditional probability.</p>	<p>Reading: Identify a quadratic sequence.</p> <p>Writing: Comparing and interpreting data.</p> <p>Oracy: Explain the difference between direct and inverse proportion.</p>	<p>Reading: Interpret histograms.</p> <p>Writing: Give definition for each circle theorem.</p> <p>Oracy: Articulate what assumptions are made when estimation capture/recapture.</p>
<u>Essential Vocabulary</u>	Completing the square, negative enlargement, upper & lower bounds, intersect & union, scale factor.	Comparing data, 2 nd difference, k, A=1/2absinc, exponential growth.	Frequency density, rationalise the denominator, gradient, circle theorems

Disciplinary Reading

Reading for Pleasure

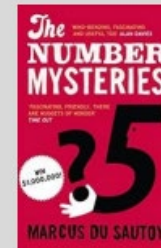


The Code Book by Simon Singh

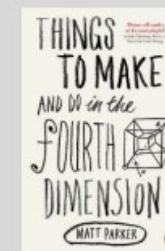
How Long is a Piece of String by Rob



Flatland by Edwin A. Abbott



The Number Mysteries by Marcus Du Sautoy



Things to make and do in the fourth dimension by Matt Parker

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