The English Martyrs Catholic School and Sixth Form College

| Year 10 Maths Foundation	Module 1	Module 2	Module 3
Topic Theme and Intent	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.
Knowledge and Skills	<u>Data:</u> Probability, listing outcomes, two-way tables, frequency trees <u>Number:</u> Estimation, bounds, making calculations with mixed numbers <u>Algebra:</u> Solving equations, forming and solving equations <u>Ratio and Proportion:</u> Dividing ratio, ratio as a fraction, two ratios & difference, recipes, best buys, basic inverse & direct proportion <u>Shape:</u> Rotational symmetry, transformations, Pythagoras, Trigonometry	<u>Data:</u> Tree diagrams, stem & leaf diagrams, averages from tables <u>Number:</u> Percentage increase & decrease, percentage change, reverse percentages, indices <u>Algebra:</u> Expanding double brackets, factorising quadratics, equation of a line, parallel lines, quadratic/cubic/reciprocal graphs <u>Ratio and Proportion:</u> Simple interest, compound interest, distance time graphs, speed, density and pressure <u>Shape:</u> 3D shapes, nets, plans of elevation, isometric drawing.	<u>Data:</u> Timetables, Venn diagrams, <u>Number:</u> Standard form <u>Algebra:</u> Equations involving area, perimeter & angles, rearranging formula and simultaneous equations <u>Ratio and Proportion:</u> Congruency, similar shapes. <u>Shape:</u> Area & circumference of circles, area & perimeter of a semi-circle, compound area, angles in parallel lines, angles in polygons, volume & surface area of prisms, cylinders, bearings including trigonometry, constructions
Literacy Links	**Reading**: Forming equations given information. **Writing**: Describe transformation. **Oracy**: Explain when to use each ratio in trigonometry.	**Reading**: Read and interpret tree diagrams. **Writing**: Write down formulas for speed, density and pressure. **Oracy**: Verbalise the difference between simple and compound interest.	**Reading**: Interpret Venn diagrams. **Writing**: Set up simultaneous equations. **Oracy**: Explain the difference between surface area and volume.
Essential Vocabulary	Truncating, forming equations, direct & inverse proportion, SOHCAHTOA	Multipliers, tree diagrams, quadratics, simple & compound interest	Simultaneous equation, constructions, congruency, changing the subject, Venn diagram
Catholic Social Teaching	**Democracy:** When teaching proportion we can use voting in General Elections and looking at the subsequent make up of the House of Commons. **Care for creation:** Collecting and representing data about the environment and then interpreting it to make conclusions.	**Individual Liberty:** Pupils learn about numerical constraints on their behaviours, such as speed limits or tax rates. **Rule of Law:** Taxes and how money is spent by the government links to percentage and ratio. **Community:** Credit/debit cards, managing debt, paying for college, saving and budgeting, opening bank accounts, high cost loans, filing taxes etc.	**Human Dignity:** The development of mathematical literacy is a vitally important social justice issue. **Peace and reconciliation:** Alan Turing and other identified historical mathematicians discussed – focus on the lives around the Maths and the obstacles that they overcame.

Disciplinary Reading   **Reading for Pleasure**

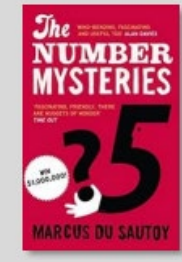# The English Martyrs Catholic School and Sixth Form College
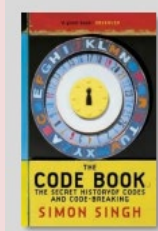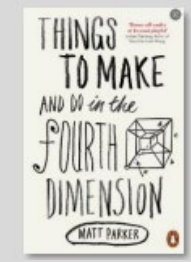
The Code Book by Simon Singh
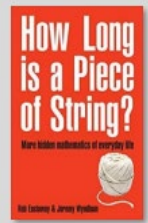
How Long Is a Piece of String by Rob

Flatland by Edwin A. Abbott

The Number Mysteries by Marcus Du Sautoy

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