The English Martyrs Catholic School and Sixth Form College

| **Year 9 Maths**	**Module 1**	**Module 2**	**Module 3**
Topic Theme and Intent	Number / Algebra / Ratio and Proportion / Shape **Extend and Challenge**	Data / Number / Algebra / Shape / Ratio and Proportion. **Extend and Challenge**	Data / Algebra / Shape / Ratio and Proportion **Extend and Challenge**
Knowledge and Skills	Number: Types of Numbers, Highest Common Factor and Lowest Common Multiple, Standard Form, Bounds with decimal places and **significant figures; and an introduction into Fractional and Negative Indices.** Algebra: Expand and simplify single and double brackets and factorise into single and double brackets (quadratics with the coefficient of x only being 1) Ratio and Proportion: use a ratio in different contexts, use recipes, find the best buy and solve problems using direct and indirect Proportion, **including using algebra.** Shape: finding the area of compound shapes (including all 2D shapes), **finding the area and arc length of a sector**, finding the volume of prisms (cylinders) and **finding the surface area of a cylinder.**	Data: Probability, Sample Space, Two-Way Tables, Frequency Trees, **Independent Events, Tree Diagrams** and Venn Diagrams. Number: Adding, Subtracting, Multiplying and Dividing Fractions and Mixed Numbers, **Basic Algebraic Fractions**, Percentages Increase and Decrease, Percentages Multipliers, **Reverse Percentages**, Simple Interest and **Compound Interest.** Algebra: Nth Term of a Linear Sequence, Nth Term of a Patterned Sequences, Generate Sequences from the Nth Term, **Nth Term of a Quadratic Sequence** and **Fibonacci Sequences** Shape: Angles and Equations, Angles in Parallel Lines, Angles in Polygons (Interior and **Exterior**) Ratio and Proportion: Speed Distance Time, **Kinematic Formulae** and Density	Data: Mean, Mode and Median from a Table (including a Grouped Table), C**omparing Data using Averages and Range** and **Reverse Mean** Algebra: Solving Equations, Solving Inequalities, **Forming and Solving Equations**, and Changing the Subject of a Formula. Shape: Pythagoras' Theorem, **Trigonometry,** Loci and Bearings Ratio and Proportion: Similar Shapes and Triangles, **Similar Shapes involving Area and Volume**, Converting Units of Length, **Area** and **Volume,** and Currency Conversions Algebra: Midpoint between two points, **Distance between two points**, Gradient of a Line, Equation of a Line, Parallel and **Perpendicular** Lines, and Plotting Quadratic Graphs
Literacy Links	**Reading**: Identifying when to use HCF or LCM from an applied question **Writing**: Using the correct symbols for direct and indirect proportion **Oracy**: describe the net of a cylinder to understand how to work out the surface area,	**Reading**: interpret information to be able to construct sample spaces and frequency trees. **Writing**: using the correct units for speed and density **Oracy**: explain the reasons for finding missing angles	**Reading**: form an expression and an equation from a worded problem **Writing**: to know that an equation of line needs to be written as $y = mx + c$ **Oracy**: explain verbally the origin of Pythagoras' Theorem, $a^2 + b^2 = c^2$
Essential Vocabulary	Reciprocal Bounds/Error Interval/Limits Direct / Indirect / Inverse Proportion Sector / Arc Length Prism / Cylinder	Independent Venn Diagram / Intersection / Union Compound Interest Fibonacci Kinematics / SUVAT Equations	Integer Subject of a Formulae Trigonometry / Opposite / Adjacent / Hypotenuse Loci / Locus / Equidistant Gradient / y = mx + c / y-intercept Parallel / Perpendicular
Catholic Social Teaching	**Common good:** Ratios can be used to assess social indictors like income distribution. Catholic Social Teaching focuses on the common good ensure everyone has their fair share.	Stability: Parallel lines provide stability and structure in geometry. Similarly, Catholic Social Teachings seeks to create stable and just societies can thrive and achieve their potential.	**Harmony:** The Pythagorean Theorem reflects harmony in mathematical relationships. Similarly Catholic Social Teachings promotes harmony through justice, solidarity and common good encouraging respect and dignity to all.

Disciplinary Reading   Reading for Pleasure
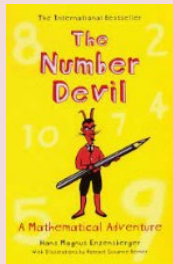
The Number Devil
By
Hans Magnus
Enzensberger
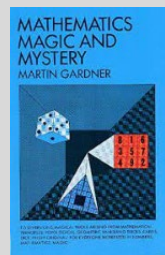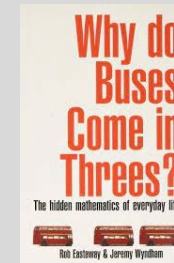

Mathematics Magic and Mystery
By
Martin Gardner

How Many Socks Make a Pair?
By
Rob Eastaway

Why do Buses Come in Threes?
By
Rob Eastaway & Jeremy Wyndham