The English Martyrs Catholic School and Sixth Form College

Year 7 Maths	Module 1	Module 2	Module 3
Topic Theme and Intent	Within this first Module, Year 7 students will cover 4 main areas of the curriculum which are: Number 1 & 2, Statistics 1 and Ratio, Proportion and Rates of Change 1.	Within Module 2, Year 7 students will cover 3 main areas of the curriculum which are: Geometry and Measure 1, Statistics 2 and Number 3.	Within Module 3, Year 7 students will cover 3 of the main areas of the curriculum which are: Algebra 1, Probability 1 and Ratio, Proportion and Rates of Change 2
Knowledge and Skills	**Number 1:** Place value and decimals, properties of number, approximation and estimation, BIDMAS, equivalent fractions, changing to and from mixed numbers, calculations with fractions and mixed numbers, finding areas with fractional sides and applying BIDMAS with fractions. **Statistics 1:** Collecting a grouping data, discrete and continuous data, grouped and ungrouped bar charts, line graphs, pictograms, stem and leaf diagrams, scatter graphs, frequency polygons and Interpreting data. **Number 2:** Equivalent fractions, decimals, percentages, percentage of amounts with and without a calculator, recurring decimals and notation, ordering fractions, decimals and percentages, best buy with fractions of amounts and percentages. **Ratio, Proportion and Rates of Change 1:** Converting between metric units of length, mass and capacity. Time, percentage increase and decrease including multiplicative factors, percentage change, converting between metric areas and volumes.	**Geometry and Measure 1** Measuring lengths and angles, identifying 2D shapes, congruence, area & perimeters of squares, rectangles, triangles, compound shapes, properties of a circle, area & circumference of a circle, compound area & perimeter involving circles. discovering Pythagoras' Theorem, volumes of cubes, cuboids, prisms, cylinders and volume - working backwards to find lengths. **Statistics 2:** Averages and range including working backwards, comparing two sets of data, finding averages from frequency tables, finding averages from grouped frequency tables and working backwards Interpreting "real" data as opposed to simplified data. **Number 3:** Negative Numbers in context e.g. temperature, adding and subtracting directed numbers, multiplying and dividing directed numbers, using negative numbers in contextual questions including calculations with fractions and complicated BIDMAS questions.	**Algebra 1** Introduction to algebraic notation, concept of expressions, equations, inequalities terms & factors, simplifying & expanding expressions, creating expressions, formulae & equations, solving linear expressions – 1, 2 & 3 step involving brackets, number patterns, term to term rules & nth terms, coordinates in 4 quadrants, gradient of a line and y intercepts, recognising $y=mx+c$ **Probability 1** Probability lines and understand language, different ways of estimating data, listing outcomes to experiments, the probability of something not happening, mutually exclusive events, use notation, $P(A') = P(\text{not } A) = 1- P(A)$, relative frequency and deciding which set of data will give you the best estimate. **Ratio, Proportion and Rates of Change 2** Making calculations with money, understanding ratio, simplifying ratio including e.g. 50cm: 3m, solving problems using equivalent ratio, writing ratios in the form 1: n, dividing amounts in a given ratio, finding amounts when the difference between 2 ratios are given.
Literacy Links	**Reading**: Literacy Homework – Historic use of Fractions. **Writing**: Analyse averages and spread through stem and leaf diagrams. **Oracy**: Articulate verbally errors and mistakes on diagrams.	**Reading**: Literacy homework – Historic use of Pythagoras. **Writing**: Analyse averages and spread through frequency tables. **Oracy**: to communicate the difference between mean, median, mode and range.	**Reading**: Literacy homework – Historic use of Ratio. **Writing**: Proficiently display accurate probability notation. **Oracy**: to communicate and understand language around probability lines and terminology.
Essential Vocabulary	Place value, estimation, discrete, continuous, mixed numbers, improper fractions, correlation, scatter graph, frequency polygon, metric, imperial	Mode, mean, median, range, circumference, Pythagoras, prism, cylinder,	Equation, expression, inequality, formula, gradient, y intercept, certain, impossible evens, likely, unlikely

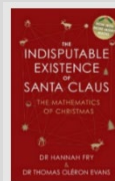**Disciplinary Reading**   **Reading for Pleasure**

 The Number Devil By Hans Magnus Enzensberger

 A Mathematical Pandora's Box By Brian Bolt

 The Indisputable existence of Santa Claus By Dr Hannah Fry and Dr Thomas Oleron Evans

 Aha! Gotcha Aha! Insight By Martin Gardner