Mathematics Higher

Curriculum intent:

It is the intention of St Gregory's Mathematics department to deliver a curriculum that will develop the skills set out in the National curriculum is the intention of St Gregory's Mathematics department to deliver a curriculum that will not only meet the requirements of the National Curriculum but will prepare pupils for the real world. Centred upon our belief 'Master your CRAFT, exceed your potential' our curriculum is designed to be accessible for all, challenging and enjoyable. Our five year scheme of learning enables students to build on prior knowledge; thus allowing for a smooth transition from primary years through to secondary and beyond. We want our students to leave St Gregory's with transferable skills that will enable them to solve problems, communicate, visualise, think analytically, self-regulate, reflect and more. It is through such skills that our students will not only function in society and the world of work but will become successful leaders and educators themselves having mastered their craft.

Coherence - breaking down problems into small interconnected steps

Representation and Structure – using concrete, pictorial and abstract ways to enable all pupils to access and solve problems

Analytical Thinking – providing opportunities for pupils to think through and share their ideas

Fluency and Variation – knowledge of key mathematical facts, enabling pupils to make connections and think flexibly.

Transferable Skills – equips pupils with the tools to tackle various situations in everyday life.

In doing this we endeavour to promote an appreciation of Mathematics as a creative and highly interconnected discipline. m and promote an appreciation of Mathematics as a creative and highly interconnected discipline providing the solution to some of history's most intriguing problems. Aiming to provide students with a sense of enjoyment and curiosity about the subject together with an appreciation of the beauty and power of Maths in different cultures.

We endeavour to provide support across a range of subjects with an emphasis on problem-solving and developing Mathematical fluency across the whole school curriculum, narrowing gaps that students may have with the basic numeracy skills essential within everyday life.

Year 10 (H)

	Content	Concepts and Skills
TERM 1	Multiplying and Dividing Decimals, Using Place Value Calculator Questions, Rounding to Significant Figures, Estimating Answers, BODMAS/BIDMAS, Squares, Cubes and Roots, Reciprocals, Working with Indices, Index notation, Negative Indices, Fractional Indices, Product of Primes, HCF / LCM, Mathematical Reasoning, Standard Form, Surds - Introduction to Surds, Expanding Brackets and simple factorisation, Expanding and Simplifying Brackets, Factorising and Solving Quadratics, The Difference of Two Squares Factorising Hard Quadratics, Solving Equations, Rearranging Simple Formulae, Forming Formulae and Equations, Rearranging difficult Formulae, nth Term, Special Sequences, Fibonacci Sequences, Geometric Progressions, Finding the nth Term of a Quadratic, Averages from a table, Frequency Tables and Diagrams, Pie Charts Scatter Diagrams, Time Series, Histograms, Cumulative Frequency, Boxplots, Adding and Subtracting Fractions - A Standard Method, Finding a Fraction of an Amount Multiplying Fractions / Dividing, Fractions, Percentages, Decimals, Percentage of an Amount, Change to a Percentage, Increase/Decrease by a Percentage, Percentage Change, Reverse Percentage Problems, Simple Interest, Recurring Decimals to Fractions, Recurring Decimals – Proof, Value for Money, Exchanging Money. Sharing using Ratio. Ratios, Fractions and Graphs	• knowledge of core principles • application of skills • problem solving • evaluation • group work • peer coaching • revision skills • examination technique
TERM 2	Angles and Parallel Lines, Angles in a Triangle , Angle Sum of Polygons, Circle Theorems, Pythagoras' Theorem, Trigonometry, The Sine Rule, The Cosine Rule, Area of a Triangle Using Sine , Straight Line Graphs, Sketching Functions, Midpoint of a Line on a Graph, The Gradient of a Line, Finding the Equation of a Straight Line - y=mx+c, Perpendicular Lines	• knowledge of core principles • application of skills • problem solving • evaluation • group work • peer coaching • revision skills • examination technique

Mathematics Higher

Archdiocese of Liverpool

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Year 10 (H)

	Content	Concepts and Skills
TERM 2	Drawing Quadratic Graphs, Cubic and Reciprocal Graphs, Equation of a Circle, Problems on Coordinate Axes, Area of a Parallelogram and Trapezium, Circle Definitions, Tangents, Arcs, Sectors and Segments, Area and Circumference of a Circle, Sectors of a Circle Surface Area of a Prism - Cuboids and Triangular Prims, Volume of a Cuboid and Prism, Spheres, Pyramids, Cones and Frustrums	- knowledge of core principles - application of skills - problem solving - evaluation - group work - peer coaching - revision skills - examination technique
TERM 3	Introduction to Bounds, Error Intervals, Upper and Lower Bounds, Combinations of Transformations, Enlargements,Enlargement - Negative Scale Factor, Bisecting an Angle, Constructing Perpendiculars, Draw a Triangle Using Compasses, Loci, Bearings, Simultaneous Equations Graphically, Simultaneous Equations Algebraically, Simultaneous Equations with a Quadratic, Factorising and Solving Quadratics, Solving Quadratics with the Formula, Factorising Hard Quadratics, Completing the Square, Inequalities on a Number Line, Solve Linear Inequalities, Regions, Solve Quadratic Inequalites, Experimental Probabilities, Possibility Spaces, Venn Diagrams , Probability using Venn Diagrams, Simple Tree Diagrams, Harder Tree Diagrams, And and Or Probability Questions, Exact Trigonometric Values	- knowledge of core principles - application of skills - problem solving - evaluation - group work - peer coaching - revision skills - examination technique