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 11 (H)

	Content	Concepts and Skills
TERM 1	Value for Money, Simple Proportion, Direct and Inverse Proportion, Sharing using Ratio, Compound Interest and Depreciation, Compound Units, Surds - Introduction to Surds, Surds - Surd Expressions Surds - Rationalising the Denominator, Algebraic Fractions – Simplifying, Algebraic Fractions – Solving, Algebraic Proof, earranging difficult Formulae, Inverse Functions – Introduction, Inverse Functions - Harder Questions, Composite Functions, Congruent triangles Similar Shapes, Similarity - Area and Volume	• knowledge of core principles • application of skills • problem solving • evaluation • group work • peer coaching • revision skills • examination technique
TERM 2	Pythagoras in 3D, Trigonometry in 3D, Trigonometric Graphs - Sine and Cosine, Trigonometric Graphs - Tangent The Sine Rule (REVIEW), The Cosine Rule (REVIEW) Area of a Triangle Using Sine (REVIEW), Sampling Populations, Stratified sampling, Histograms, Cumulative Frequency, Boxplots	• knowledge of core principles • application of skills • problem solving • evaluation • group work • peer coaching • revision skills • examination technique
TERM 3	Drawing Quadratic Graphs, Sketching Functions, Roots and Turning Points of Quadratics, Cubic and Reciprocal Graphs Transformation of Functions - Polynomial Functions, Transformation of Functions - Trigonometric Functions, Product of Three Binomials, Iteration - Trial and Improvement, Iterative Processes, Circle Theorems (REVIEW), Distance-Time Graphs, Velocity-Time Graphs, Equations of tangents and area under graph, Exponential Functions, Vectors, Exact Trigonometric Values (REVIEW)	• knowledge of core principles • application of skills • problem solving • evaluation • group work • peer coaching • revision skills • examination technique