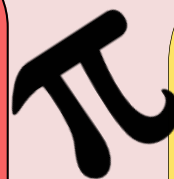## Overview:

Year 10 students will study a range of units on number, algebra, shape, measure, ratio and proportion.

There will be regular assessment throughout the year enabling you to track your progress.

Year 10 MATHEMATICS

Term 1:

Number: calculations; place value and estimating; Factors and multiples; calculating with powers (indices); index notation; standard form; and surds.

Algebra: algebraic expressions; simplifying expressions; substitution; formulae; expanding and factorising; equations; inequalities; linear and non-linear sequences.

Interpreting & representing data: frequency tables; two-way tables; representing data; time series; stem and leaf diagrams; pie charts; scatter graphs and line of best fit; averages and range.

Fractions, ratio & percentages: working with fractions; adding, subtracting, multiplying and dividing with fractions; fractions, decimals and percentages; calculating percentages; ratios; ratio and proportion.

Angles and trigonometry: properties of shapes; angles in parallel lines; angles in triangles; exterior and interior angles; geometrical problems; Pythagoras' theorem; and trigonometry.

Term 2:

Graphs: coordinates; linear graphs; gradient; y = mx + c; real-life graphs; distance-time graphs; graphing rates of change; line segments; quadratic graphs; cubic and reciprocal graphs.

Perimeter, area & volume: perimeter and area of rectangles, parallelograms, triangles, trapezia and circles; changing units; area of compound shapes; surface area of 3D solids; volume of prisms; units and accuracy; sectors of circles; cylinders, spheres, pyramids and cones.

Transformations & constructions: translation, reflection, rotation and enlargement; combining transformations; scale drawings and bearings; constructions; and loci.

Term 3:

Equations & inequalities: Solving linear inequalities; solving quadratic equations; completing the square; and solving simultaneous equations.

Probability: calculating probability; two events; combined events; mutually exclusive events; experimental probability; Venn diagrams and set notation; tree diagrams; and conditional probability.

Multiplicative reasoning: growth and decay; compound measures.

Ratio & proportion: ratios and measures; using ratios; using proportion; proportion and graphs; and proportion problems.

Trigonometry: accuracy; graphs of the sine, cosine and tangent functions; calculating areas and the sine rule; the cosine rule and 2D trigonometric problems; solving problems in 3D; trans-