Stuart Bathurst Catholic High School

Mathematics Department

Long-term sequencing Year 9

The curriculum has been designed to ensure that students develop the skills required to be successful in reaching their goals. We want students to be numerate and understand the Mathematics of the world around them, whilst also having an appreciation and love of Mathematical concepts.
Problem solving is embedded from year 7 all the way through to year 13, with a 5-year SOW in year 7 to 11, based upon students' current level of knowledge and understanding. Teaching is based around a mastery curriculum, with links made between multiple topics. Students are first taught to fully understand the knowledge, and then given time to fully master the skill. Students are then given opportunities to apply their understanding and skills to practical applications. Each stage of students 5-year plan builds upon students' prior knowledge and seeks to develop this further. Our curriculum is designed to be fluid, data-led and student-centric, with it being adapted as and when necessary.

TERM 1:	**TERM 2:**	**TERM 3:**
STUDENTS MUST KNOW: **Straight line graphs –** using a table of values, comparing gradients, plotting linear graphs, equation of a line from a graph, exploring perpendicular lines. **Forming and solving equations –** Solving one and two step equations and inequalities, solving equations with unknowns on both sides, rearranging formulae, substituting into formulae, negatives in inequalities. **Testing conjectures –** true or false, always sometimes never, binomials, show that, conjectures with number, conjectures with algebra. **3D shapes –** nets of 3D shapes, plans and elevations, area of 2D shapes, surface area of prisms including cylinders, volumes of prisms including cylinders and spheres. **Constructions and congruency –** measuring angles, scale drawings, locus from a point, perpendicular bisector, locus from a line, angle bisector, congruent figures. **Number –** use and understand surds, work with directed number, HFC, LCM, operations with fractions, working with decimals and numbers in standard form. **HOW THIS WILL BE ASSESSED:** **End of unit assessments at least twice a half term.** **Learning review windows twice a year.** **Formative assessment in lessons - mini white boards.**	**STUDENTS MUST KNOW:** **Using percentages –** Calculate percentage increase and decrease, calculate percentage change, reverse percentage problems, repeated percentage change**.** **Maths and money –** calculating simple interest, compound interest, VAT, wages, tax, exchange rates and working with best buy problems. **Deduction –** deductions with angles, deduction with shapes, deductions with algebra, angles in parallel lines. **Rotation and translation –** rotate a shape about any given point, translate a shape using any given vector, complete multiple transformations, compare rotations and reflections. **Pythagoras –** calculating the hypotenuse, calculating a short side, applying Pythagoras on a coordinate grid, proving a triangle is right-angled. **HOW THIS WILL BE ASSESSED:** **End of unit assessments at least twice a half term.** **Learning review windows twice a year.** **Formative assessment in lessons - mini white boards.**	**STUDENTS MUST KNOW:** **Enlargement and similarity –** Enlarging by a positive/fractional/negative scale factor, finding missing sides in similar shapes, exploring similar triangles. **Ratio and proportion –** direct and inverse proportion, conversion graphs, best buy problems, solving problems when given the whole or part. **Rates –** speed distance time, density mass volume, rates of flow, converting compound units, distance time graphs. **Probability –** calculating probabilities, relative frequency, expected outcomes, tree diagrams (with and without replacement). **Algebraic representation –** draw and interpret quadratic graphs, draw other graphs including cubic graphs and reciprocals, representing inequalities, using graphs to solve simultaneous equations. **HOW THIS WILL BE ASSESSED:** **End of unit assessments at least twice a half term.** **Learning review windows twice a year.** **Formative assessment in lessons - mini white boards.**

Home learning set will consist of a combination of: 3-part homework (spiral, develop, apply), and additional worksheets where appropriate.