Bishop Milner CATHOLIC COLLEGE

Year [9] LONG-TERM SEQUENCE for [MATHS]

The curriculum for this stage of students' education has been designed to:
develop students' mathematical fluency, reasoning, and problem-solving by building deep understanding through a carefully sequenced, mastery-based approach that consolidates KS3 knowledge and prepares learners for GCSE maths.

Half Term 1	Half Term 2	Half Term 3
Students Must know: **Properties of number** Students must understand factors, multiples, primes, indices and roots, and use these fluently to solve problems. This builds from primary school work on multiplication tables and basic factors, and is extended in Years 7–8 through primes, HCF/LCM, and powers. **Percentages** Students must be able to calculate, increase/decrease and compare percentages, including reverse percentage problems. This builds from primary school work on fractions of amounts and Year 7–8 development linking fractions, decimals and percentages and calculating percentage change. **Area and volume** Students must calculate the area of compound shapes and the volume and surface area of prisms. This builds from primary school knowledge of area of rectangles and basic shapes, and Year 7–8 work on perimeter, area of 2D shapes, and volume of simple 3D solids like cuboids.	**Students Must know:** **Equations, inequalities and formulae** Students must be able to solve linear equations, rearrange formulae, and solve and represent inequalities. This builds from primary school understanding of missing number problems and is developed in Years 7–8 through solving one- and two-step equations and forming expressions from words. **Rates** Students must understand and compare rates such as speed, density, and unit price, including solving problems involving conversion between units. This builds from primary school work on multiplication, division, and measures, and Year 7–8 work on ratio, proportion, and simple speed calculations. **Standard form** Students must be able to convert numbers to and from standard form and perform calculations using it. This builds from Year 7–8 work on place value, powers of 10, and multiplying/dividing by powers of 10, extending earlier understanding of large and small numbers from primary school.	**Students Must know:** **Maths & Money** Students must be able to apply percentage change, interest, and budgeting skills to real-life financial problems. This builds from primary school work on coins and basic money calculations, and Year 7–8 work on percentages, decimals, and simple financial contexts such as profit and loss. **Straight Line Graphs** Students must understand how to plot, interpret, and use straight line graphs, including finding gradients and equations of lines in simple cases. This builds from Year 7–8 work on coordinates, plotting points in all four quadrants, and recognising patterns in tables and graphs. **Ratio and Proportion** Students must be able to use ratio notation, divide in a given ratio, and solve direct proportion problems. This builds from primary school sharing and grouping, and Year 7–8 work on ratio language, scaling, and linking ratio to fractions and percentages.
How this will be assessed: Weekly exit tickets. One end of half term assessment	How this will be assessed: Weekly exit tickets. One end of half term assessment	How this will be assessed: Weekly exit tickets. One end of half term assessment
Half Term 4	**Half Term 5**	**Half Term 6**
Students Must know: **Construction & Congruency** Students must be able to construct accurate geometric diagrams using compasses and protractors and understand congruent shapes and conditions for congruency. This builds from primary school work on drawing and measuring shapes and is developed in Years 7–8 through properties of angles, triangles, and basic constructions. **Similarity** Students must understand similarity in shapes, including scale factors and how lengths and areas change under enlargement. This builds from primary school work on scaling and proportional reasoning and Year 7–8 work on ratio, fractions, and enlargements on coordinate grids. **Algebraic Manipulation** Students must be able to simplify expressions, expand and factorise, and manipulate algebra confidently, including brackets and identities. This builds from primary school arithmetic patterns and Year 7–8 work on forming expressions, substituting values, and working with linear expressions and equations.	**Students Must know:** **Pythagoras' Theorem** Students must be able to apply Pythagoras' theorem to find missing sides in right-angled triangles and solve geometric problems. This builds from primary school understanding of squares and square numbers, and Year 7–8 work on area of squares, coordinates, and using algebraic reasoning in shapes. Non-Linear Graphs Students must be able to recognise, interpret, and sketch simple non-linear graphs such as quadratic and inverse proportion graphs. This builds from Year 7–8 work on coordinates and straight-line graphs, and understanding patterns in tables of values and basic algebraic relationships. **Sets & Probability** Students must be able to represent sets using Venn diagrams and calculate probabilities using set notation and basic probability rules. This builds from primary school work on chance and simple probability, and Year 7–8 work on listing outcomes, frequency, and basic probability calculations. **Transformations** Students must be able to describe and perform translations, reflections, rotations, and enlargements accurately. This builds from primary school work on shape movement and symmetry, and Year 7–8 work on coordinates, basic transformations, and describing properties of shapes.	**Students Must know:** **Simultaneous Equations** Students must be able to solve pairs of linear equations using substitution or elimination to find unknown values. This builds from primary school work on solving missing number problems and is developed in Years 7–8 through solving one-step and multi-step linear equations and forming equations from contexts. **Trigonometry** Students must be able to use trigonometric ratios (sin, cos, tan) in right-angled triangles to find missing sides and angles. This builds from primary school understanding of angles and right angles, and Year 7–8 work on angle facts, Pythagoras' work with triangles, and calculating missing sides using simple ratio reasoning.
How this will be assessed: Weekly exit tickets. One end of half term assessment	How this will be assessed: Weekly exit tickets.	How this will be assessed: Weekly exit tickets. One end of year 9 assessment

Embedding this knowledge can be supported at home by:
Embedding this knowledge at home can be supported by regular practice and review of key skills in short, focused sessions. Parents are encouraged to use the White Rose Maths Practice Journals, which reinforce classroom learning through carefully sequenced questions, alongside the weekly completion of Sparx Maths homework, which helps students consolidate and deepen their understanding through independent practice and retrieval.