Bishop Milner
CATHOLIC COLLEGE

Year 10 Foundation LONG-TERM SEQUENCE for MATHS

The curriculum for this stage of students' education has been designed to:

build directly on the Year 9 LTS, strengthening core foundations while moving students into more demanding GCSE level applications. It extends prior learning in number and algebra by progressing from basic indices, equations and factor work to bounds, surds, fractional indices and simultaneous equations, including non linear systems. Geometry develops from KS3 angle facts and simple constructions into polygons, circle geometry, Pythagoras, trigonometry, 3 D reasoning and more complex area and volume problems involving circles, sectors, prisms and cylinders. Data handling builds on earlier charts and averages, moving into grouped data, histograms, cumulative frequency, box plots and comparing distributions. Graphs progress from straight line plotting to interpreting quadratics, cubics, circles and using graphs to solve equations. Vectors advance from simple representations to algebraic manipulation, scalar multiplication and geometric applications. These carefully sequenced links ensure that Year 10 content feels like a natural progression, enabling students to deepen understanding, tackle multi step problems and apply familiar ideas confidently as they move towards GCSE success.

Half Term 1	**Half Term 2**	**Half Term 3**
Students Must know: Algebraic manipulation Builds on Year 9 simplifying and substitution by extending into expanding single and double brackets, factorising expressions and working with more complex algebraic structures. Equations, inequalities and formulae Progresses from solving basic linear equations in Year 9 to rearranging formulae, solving multi step equations and representing/solving inequalities on number lines. Quadratic expressions and equations Develops the Year 9 introduction to expanding brackets by moving into expanding quadratics, factorising simple quadratics and solving them using factorisation.	**Students Must know:** Percentages Builds on Year 9 percentage fluency by extending into percentage change, reverse percentages and multi step percentage problems. Ratio and scale Develops Year 9 ratio skills into more complex sharing, scaling, map based scale work and proportional reasoning. Working with fractions Strengthens Year 9 fraction operations, focusing on adding, subtracting, multiplying and dividing fractions in more demanding contexts.	**Students Must know:** Non calculator methods Builds on Year 9 arithmetic by strengthening written methods for the four operations, including efficient strategies for integers, decimals and fractions. Straight line graphs Extends Year 9 coordinate and graphing skills into plotting linear graphs, understanding gradient and intercept, and interpreting real life linear relationships. Probability Develops Year 9 introductory probability into more structured methods, including sample spaces, frequency trees and calculating probabilities in multi step contexts.
How this will be assessed: Weekly exit tickets. One end of half term assessment	How this will be assessed: Weekly exit tickets. GCSE exam paper at the end of the half term.	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: Rounding and estimation Builds on Year 9 rounding skills by applying estimation and significant figures to more complex calculations and problem solving contexts. Perimeter, area and volume Extends Year 9 work on 2D shapes and prisms into circles, compound shapes, surface area and more challenging volume reasoning. Interpret and represent data Develops Year 9 data handling foundations into constructing and interpreting charts, tables and statistical diagrams with greater accuracy and context. Non linear graphs Builds on Year 9 graphing skills by introducing curves such as quadratics and reciprocals, focusing on plotting, interpreting and	**Students Must know:** Angles Builds on Year 9 angle facts by applying them to more complex diagrams, including parallel lines, polygons and multi step reasoning. Graphs and diagrams Extends Year 9 data handling and graphing skills into interpreting and constructing a wider range of statistical diagrams and graphical representations. Vectors Develops from Year 9 coordinate understanding into vector notation, addition, subtraction and solving geometric problems using vectors.	**Students Must know:** Factors and powers Builds on Year 9 index laws and factor work by extending into prime factorisation, highest common factor, lowest common multiple and more complex index calculations. Pythagoras' theorem and trigonometry Develops Year 9 right angle triangle knowledge into full use of Pythagoras' theorem and introduces sine, cosine and tangent for finding missing sides and angles.
How this will be assessed: Weekly exit tickets. GCSE exam paper at the end of the half term.	How this will be assessed: Weekly exit tickets. One end of half term assessment	How this will be assessed: Weekly exit tickets. GCSE exam papers x3 – mock exams

Embedding this knowledge can be supported at home by:

Embedding this knowledge can be supported at home by encouraging students to engage in regular independent practice through Sparx Maths, where personalised homework and targeted retrieval tasks reinforce the concepts taught in class. Students can also make use of high quality resources such as Corbett Maths (tutorial videos, practice questions and 5 a day revision), Maths Genie (graded worksheets and exam style problems) and BBC Bitesize, which provides clear explanations and interactive activities. Consistent use of these platforms helps strengthen fluency, deepen understanding and build long term confidence across the curriculum.

Bishop Milner CATHOLIC COLLEGE

Year 10 Higher LONG-TERM SEQUENCE for MATHS

The curriculum for this stage of students' education has been designed to:

build directly on the Year 9 LTS, strengthening the foundations while moving students into more demanding GCSE level applications. It extends prior learning in areas such as algebra (moving from solving two step equations in Year 9 to forming and solving linear equations and inequalities in Year 10), proportional reasoning (progressing from basic ratio and unit conversions to percentage change, compound measures and real life proportional problems), and geometry (developing from angle facts and basic constructions to scale drawings, Pythagoras and more complex area/volume work). These carefully sequenced connections ensure that Year 10 content feels like a natural progression, enabling students to deepen understanding, tackle multi step problems and apply familiar ideas in new contexts as they move towards GCSE success.

Half Term 1	Half Term 2	Half Term 3
Students Must know: **Algebraic manipulation** Builds on Year 9 simplifying and substitution by extending into collecting like terms, using the laws of indices, expanding single brackets and factorising expressions by taking out a common factor. **Equations, inequalities and formulae** Progresses from solving basic linear equations in Year 9 to tackling fractional equations and unknowns on both sides, interpreting and solving inequalities (including set notation at extension level), and changing the subject of simple, familiar and more complex formulae, even when the variable appears more than once. **Quadratic expressions and equations** Develops the Year 9 introduction to expanding brackets by moving into expanding double and triple brackets, factorising quadratics (including more complex cases and differences of two squares), and solving quadratic equations set equal to zero using factorisation and, at extension level, completing the square.	**Students Must know:** **Percentages** Builds on Year 9 percentage fluency by extending into percentage change, repeated change, expressing values as percentages, reverse percentages and both simple and compound interest. **Ratio and scale** Develops Year 9 ratio skills into using equivalent ratios, linking ratios to fractions, combining ratios and sharing quantities algebraically, including problems that connect ratio and algebra. **Working with fractions** Strengthens Year 9 fraction operations by moving into adding and subtracting with different denominators, multiplying and dividing fractions, and extending these skills to algebraic fractions in more demanding problem solving contexts.	**Students Must know:** **Number skills and operations** Builds on Year 9 fluency with calculations by extending into accurate use of the order of operations, using related facts to work efficiently, solving multi step problems and converting recurring decimals into fractions. **Straight line graphs** Develops Year 9 graphing skills into drawing and interpreting straight line graphs, using the form y = mx + c, finding equations from graphs or points, representing inequalities on graphs, working with midpoints and perpendicular lines, and interpreting real life linear relationships. **Probability** Strengthens Year 9 understanding of chance by moving into calculating probabilities of single events, using relative frequency, constructing sample spaces, organising information with two way tables and frequency trees, and working with independent events using tree diagrams.
How this will be assessed: Weekly exit tickets. One end of half term assessment	How this will be assessed: Weekly exit tickets. GCSE exam paper at the end of the half term.	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: **Number, rounding and accuracy** Builds on Year 9 rounding and estimation by extending into significant figures, efficient calculator use and interpreting error intervals, including those created through truncation. **Perimeter, area and volume** Develops Year 9 shape knowledge into calculating perimeters and areas of a wider range of 2 D shapes, working confidently with circles and sectors, and finding volumes and surface areas of prisms and cylinders using nets and formulae. **Data handling and statistical methods** Strengthens Year 9 data skills by moving into calculating averages from both ungrouped and grouped data, comparing distributions, understanding data types and sampling, using capture–recapture, and interpreting scatter graphs with interpolation and extrapolation. **Graphs of curves and circles** Builds on Year 9 graphing foundations by extending into interpreting and sketching quadratic and cubic graphs, identifying key features such as roots and turning points, estimating gradients and areas under curves, and working with the equation of a circle and tangents.	**Students Must know:** **Angles and geometric reasoning** Builds on Year 9 angle facts by extending into angle rules around a point and on straight lines, angles in triangles, quadrilaterals and polygons, parallel line angle relationships, algebraic angle solving and geometric proof. **Statistical diagrams and data representation** Develops Year 9 data handling skills into constructing and interpreting a wider range of statistical diagrams, including pie charts, time series, frequency polygons, stem and leaf diagrams, histograms, cumulative frequency graphs and box plots and comparison of distributions. **Vectors** Strengthens Year 9 understanding of movement and direction by introducing formal vector notation, scalar multiplication, vector addition and subtraction, and applying vector journeys within shapes, including quadrilaterals.	**Students Must know:** **Surds, indices and number properties** Builds on Year 9 work with factors, powers and roots by extending into prime factorisation for HCF and LCM, negative and fractional indices, simplifying and operating with surds, expanding brackets containing surds and rationalising both simple and more complex denominators, applying these skills to increasingly challenging number problems. **Pythagoras and trigonometry** Develops Year 9 right angled triangle knowledge into full GCSE trigonometry, including using Pythagoras' theorem, applying trigonometric ratios for sides and angles, recalling exact values, working in 3 D, finding the area of non right angled triangles and using the sine and cosine rules to find unknown lengths and angles. **Simultaneous equations** Progresses from solving simple equations in Year 9 to using graphical, elimination and substitution methods, adjusting equations where needed, solving real life problems and extending into linear–non linear systems through graphs, equating expressions and substitution .
How this will be assessed: Weekly exit tickets. GCSE exam paper at the end of the half term.	How this will be assessed: Weekly exit tickets. One end of half term assessment	How this will be assessed: Weekly exit tickets. GCSE exam papers x3 – mock exams

Embedding this knowledge can be supported at home by:

Embedding this knowledge can be supported at home by encouraging students to engage in regular independent practice through Sparx Maths, where personalised homework and targeted retrieval tasks reinforce the concepts taught in class. Students can also make use of high quality resources such as Corbett Maths (tutorial videos, practice questions and 5 a day revision), Maths Genie (graded worksheets and exam style problems) and BBC Bitesize, which provides clear explanations and interactive activities. Consistent use of these platforms helps strengthen fluency, deepen understanding and build long term confidence across the curriculum.