Year 11 Foundation

Extending their learning even further, students will learn how to tackle more demanding multi-step contextual mathematics, as well as some abstract algebra. This will give students a strong foundation for further post-16 study as confident, numerate citizens.

	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Knowledge & Skills Overview	**Percentages** Solve a range of contextual percentage problems, including percentage profit/loss and reverse percentage. **Inequalities, Expressions & Equations** Represent inequalities in a variety of forms. Create & solve linear inequalities. **Pythagoras' Theorem** Know and apply Pythagoras' Theorem to find missing sides of right-angled triangles.	**Area & Volume** Calculate the area of 2D shapes including circles. Find the surface area & volume of prisms, cones, spheres, and pyramid. Work with compound units like density & pressure. **Proportion & Rates of Change** Use direct proportion to work with recipes, currency conversion, and speed-distance-time.	**Probability** of more than one event using two-way tables, sample space diagrams, Venn diagrams & simple tree diagrams. **Angles in Polygons** Solve interior and exterior angle reasoning problems within polygons. **Continuous Data** Construct and interpret data within grouped frequency tables, frequency polygons and histograms. .	**Real Life Graphs** Construct and interpret liner graphs in context **Non-Linear Equations** Explore the graphs of quadratics, cubic, and reciprocals. Solve quadratic equations by factorising, graphically, or trial and improvement. **Trigonometry** Use the trigonometric ratios to find missing sides or angles within right angled triangles.	**Simultaneous Equations** Solve simultaneous linear equations algebraically and graphically. **Shapes** Prove triangles are congruent. Use principles of similarity to one dimension.	**Personalised Revision Plan** Using rich and detailed question level analysis of all practice examination material, students will have the support to focus their revision on their personalised areas for development. **Exam Season**
Opportunities for Recall & Retrieval of Prior Learning	**From Year 10** • Percentages • Fraction and ratio • Expressions and equations • Area & Perimeter	**From Year 10** • Area & Volume • Ratio & Proportion • Use equations and formulae	**From Year 10** • Angles & Reasoning • Averages • Data Handling Cycle	**From Year 10** • Ratio & Proportion • Linear graphs • Equations and formulae	**From Year 10** • Linear Graphs • Equations & Formulae • Ratio & Proportion • 2D Shapes	**From Year 10** Personalised revision
	From Year 11 • Skills with equations with Pythagoras' Theorem • Use of percentage & ratio with area and perimeter problems	**From Year 11** • Fractions, ratio and percentages • Formulae and equations from area problems • Compound units	**From Year 11** • Fractions, ratio and percentages • Form and solve equations to find missing angles in polygons	**From Year 11** • Proportion & Rates • Pythagoras' Theorem with Trigonometry • Angle and area problems with Trigonometry	**From Year 11** • Proportion & Rates • Forming linear equations & solving • Link perimeter and area to similar shapes	**From Year 11** Personalised revision

Year 11 Higher

Extending their learning even further into more complex and abstract mathematics, students will learn to become agile and resourceful in their approaches to solving advanced multi-discipline problems, preparing them well for post-16 qualifications, such as A-Level Mathematics.

	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Knowledge & Skills Overview	**Solving Quadratics** Solve quadratic equations by factorising, using the formula, rearranging, and iteration. **Probability** of more than one event using two-way tables, sample space diagrams, Venn diagrams and tree diagrams. Form and solve equations from probability problems **Area & Volume** Calculate the volume and surface area of spheres, cones, pyramids including complex compound 3D shapes.	**Circle Theorems** Know & use the circle theorems to solve multi-step angle reasoning problems. Prove angle facts related to circles algebraically. **Linear Inequalities** Represent, construct and solve inequalities. Identify feasible regions on graphs **Proportionality** Use direct & inverse proportion to solve complex problems. Express relationships using algebra	**Rates of Change** Explore distance-time, and velocity-time graphs **Continuous Data** Construct and interpret cumulative frequency diagrams, box-plots and histograms	**Trigonometry & Pythagoras** Use Trigonometry and Pythagoras with problems in 3D. Extend the use of trigonometry to non-righted angled triangles. **Functions & Graph Transformations** Sketch and transform non-linear graphs adjust, their functions. **Non-Linear Simultaneous Equations** Solve one linear & one non-linear equation simultaneously using algebra or graph	**Shapes** Prove triangles are congruent. Use principles of similarity in 1D, 2D and 3D. **Vectors** Represent vectors and calculate related magnitudes and angles **Further Equations & Graphs** Link all features of a quadratic graph to the different forms of its function. Explore cubic, reciprocal & exponential graphs	**Personalised Revision Plan** Using rich and detailed question level analysis of all practice examination material, students will have the support to focus their revision on their personalised areas for development. **Exam Season**
Opportunities for Recall & Retrieval of Prior Learning	**From Year 10** • Expressions and equations • Algebraic fractions • Accuracy & bounds with Area & Volume • Angle & Reasoning	**From Year 10** • Linear simultaneous equations & graphs • Ratio & Proportion • Percentage multipliers & formulae	**From Year 10** • Analysis of data • Linear simultaneous equations & graphs • Algebraic Fractions • Skill with Surds	**From Year 10** • Algebraic fractions • Linear & non-Linear Graphs • Linear simultaneous equations	**From Year 10** • Ratio & Proportion • Perimeter, area and volume • Linear and non-linear graphs • Percentage multiplier	**From Year 10** Personalised revision
	From Year 11 • Rearranging skills for volume formulae • Area & volume with quadratics	**From Year 11** • Area of feasible regions on graphs • Area under velocity-time graphs	**From Year 11** • Area with Histograms • Solving quadratics • Area & volume with trigonometry or Pythagoras	**From Year 11** • Data & sampling • Solving quadratics • Transformations • Trigonometric functions	**From Year 11** • Geometric proof • Transformations	**From Year 11** Personalised revision