Our Lady and St. Bede Catholic Academy

Subject Curriculum – Year 9 Theta

Big Ideas & Purpose	The aims of teaching and learning mathematics are to encourage and enable students to: recognise that mathematics permeates the world around us; appreciate the usefulness, power and beauty of mathematics and enjoy mathematics and develop patience and persistence when solving problems.					
Programme of Study	HT1 **Indices and standard form** Indices Calculations and estimates STEM: Standard form **Expressions and formulae** Substituting into expressions Writing expressions and formulae STEM: Using formulae Rules of indices and brackets Expanding double brackets	HT2 **Dealing with data** Planning a survey Collecting data Calculating averages Display and analyse data Writing a report Multiplicative reasoning Enlargement Negative and fractional scale factors FINANCE: Percentage change Rates of change Problem-solving	HT3 **Constructions** Using scales Basic constructions Constructing triangles Loci **Equations, inequalities and proportionality** Solving equations Using equations Trial and improvement Using and solving Inequalities STEM: Proportion Simultaneous equations	HT4 **Circles, Pythagoras and prisms** Circumference of a circle Area of a circle Pythagoras' theorem Prisms and cylinders STEM: Errors and bounds **Sequences and graphs** nth term of arithmetic sequences Non-linear sequences Graphing rates of change Using y = mx + c More straight-line graphs More simultaneous equations Graphs of quadratic functions Non-linear graphs	HT5 **Probability** Experimental probability Probability diagrams Independent events	HT6 **Comparing shapes** Congruent and similar shapes Ratios in triangles The tangent ratio The sine ratio The cosine ratio
Key Assessments	• Assessments take place after every unit. • Usually 2 per half term.		• Assessments take place after every unit. • Usually 2 per half term.		• Year 9 will take an end of year examination in the summer term.	

Key Skills

- To provide opportunities for learner to demonstrate their knowledge of mathematics across a whole range of topic areas.
- To allow learners to develop their problem-solving strategies and provide the confidence and skills required to tackle unfamiliar challenges.

Links to Careers

- Mathematics teaches accuracy and precision in work. The analytical and problem-solving skills you learn are valuable in many different careers, for example Accountancy, Teaching, Business, Medicine, Architecture and Computer Studies.

Our Lady and St. Bede Catholic Academy

Subject Curriculum – Year 9 Delta

Big Ideas & Purpose	The aims of teaching and learning mathematics are to encourage and enable students to: recognise that mathematics permeates the world around us; appreciate the usefulness, power and beauty of mathematics and enjoy mathematics and develop patience and persistence when solving problems.					
Programme of Study	HT1 **Powers and roots** Reciprocals Indices Standard form STEM: Calculating with standard form Fractional indices Surds **Quadratics** Sequences Expanding Factorising Solving quadratic equations **Inequalities, equations and formulae** Inequalities Using index laws Solving equations Changing the subject Algebraic fractions	HT2 **Collecting and analysing data** STEM: Data collection Presenting and comparing data Estimating statistics Box plots Cumulative frequency graphs Histograms	HT3 **Multiplicative reasoning** Direct proportion Solving problems using direct proportion Non-linear proportion Arcs and sectors of circles **Non-linear graphs** Graphs of quadratic functions Solving quadratic equations Graphs of cubic functions STEM: Graphs of reciprocal functions	HT4 **Accuracy and measures** Rates of change Density and pressure Upper and lower bounds Calculating with bounds STEM: Accurate measures in real life **Graphical solutions** Simultaneous equations Using y = mx + c More simultaneous equations Graphs and simultaneous equations Solving inequalities	HT5 **Trigonometry** The tangent ratio The sine ratio The cosine ratio Using trigonometry to find angles Solving problems using trigonometry Trigonometric graphs	HT6 **Mathematical reasoning** Explain, show and justify MODELLING: Real-life situations Proof More proof
Key Assessments	• Assessments take place after every unit. • Usually 2 per half term.		• Assessments take place after every unit. • Usually 2 per half term.		• Year 9 will take an end of year examination in the summer term.	
Key Skills	• To provide opportunities for learner to demonstrate their knowledge of mathematics across a whole range of topic areas. • To allow learners to develop their problem-solving strategies and provide the confidence and skills required to tackle unfamiliar challenges.			**Links to Careers** • Mathematics teaches accuracy and precision in work. The analytical and problem-solving skills you learn are valuable in many different careers, for example Accountancy, Teaching, Business, Medicine, Architecture and Computer Studies.		

Our Lady and St. Bede Catholic Academy

Subject Curriculum – Year 9 Pi

Big Ideas & Purpose	The aims of teaching and learning mathematics are to encourage and enable students to: recognise that mathematics permeates the world around us; appreciate the usefulness, power and beauty of mathematics and enjoy mathematics and develop patience and persistence when solving problems.					
Programme of Study	HT1 **Number** calculations Adding and subtracting Multiplying Dividing Multiplying and dividing negative numbers Squares, cubes and roots More powers Calculations **Sequences and equations** Algebraic expressions Using the nth term Finding the nth term Solving equations	HT2 **Statistics** Planning a survey Statistics from tables Comparing data Pie charts and scatter graphs FINANCE: Misleading graphs Writing a report **Fractions, decimals and percentages** Equivalent proportions Recurring decimals Adding and subtracting fractions Multiplying fractions Dividing fractions Comparing proportions FINANCE: Percentage change	HT3 **Geometry in 2D and 3D** Angles Maps and scales Constructions 3D solids MODELLING: Pythagoras' theorem **Algebraic and real-life graphs** Reading graphs Plotting graphs Distance-time graphs Midpoints Intercepts and gradients	HT4 **Multiplicative reasoning** STEM: Using ratios Using proportions Problem-solving with proportions Measures and conversions **Algebraic and geometric formulae** Substituting into formulae More complex formulae Formulae in geometry Compound shapes Circles	HT5 **Probability** Probability experiments Sample space diagrams MODELLING: Two-way tables Tree diagrams	HT6 **Polygons and transformations** Quadrilaterals Triangles Transformations Enlargement Congruent shapes
Key Assessments	• Assessments take place after every unit. • Usually 2 per half term.		• Assessments take place after every unit. • Usually 2 per half term.		• Year 9 will take an end of year examination in the summer term.	
Key Skills	• To provide opportunities for learner to demonstrate their knowledge of mathematics across a whole range of topic areas. • To allow learners to develop their problem-solving strategies and provide the confidence and skills required to tackle unfamiliar challenges.			**Links to Careers** • Mathematics teaches accuracy and precision in work. The analytical and problem-solving skills you learn are valuable in many different careers, for example Accountancy, Teaching, Business, Medicine, Architecture and Computer Studies.		