Mathematics – KS4 Curriculum Map

ST BEDE'S
CATHOLIC VOLUNTARY ACADEMY

Foundation

Year 10 (F)	Advent 1	Advent 2	Lent 1	Lent 2	Pentecost 1	Pentecost 2
Key content	Unit 1: Number Unit 2: Algebra	Unit 3: Graphs, tables and charts Unit 4: Fractions and percentages	Unit 5: Equations, inequalities and sequences Unit 6: Angles	Unit 7: Averages and range Unit 8: Perimeter, area and volume 1	Unit 9: Graphs Unit 10: Transformations	Unit 11: Ratio and proportion Unit 12: Right-angled triangles
Key concepts and skills	**Unit 1a** 1.1 Calculations **Unit 1b** 1.2 Decimal numbers **Unit 1c** 1.3 Place value **Unit 1d** 1.4 Factors and multiples 1.5 Squares, cubes and roots 1.6 Index notation 1.7 Prime factors **Unit 2a** 2.1 Algebraic expressions **Unit 2b** 2.2 Simplifying expressions 2.3 Substitution 2.4 Formulae 2.5 Expanding brackets 2.6 Factorising 2.7 Using expressions and formulae	**Unit 3a** 3.1 Frequency tables 3.2 Two-way tables 3.3 Representing data 3.4 Time series 3.5 Stem and leaf diagrams **Unit 3b** 3.6 Pie charts **Unit 3c** 3.7 scatter graphs 3.8 Line of best fit **Unit 4a** 4.1 Working with fractions 4.2 Operations with fractions 4.3 Multiplying fractions 4.4 Dividing fractions 4.5 Fractions and decimals 4.6 Fractions and percentages **Unit 4b** 4.7 Calculating percentages 1 4.8 Calculating percentages	**Unit 5a** 5.1 Solving equations 1 5.2 Solving equations 2 5.3 Solving equations with brackets 5.4 Introducing inequalities 5.5 More inequalities 5.6 Using Formulae **Unit 5b** 5.7 Generating sequences 5.8 Using the nth term of a sequence **Unit 6a** 6.1 Properties of shapes 6.2 Angles in parallel lines 6.3 Angles in triangles **Unit 6b** 6.4 Exterior and interior angles 6.5 More exterior and interior angles 6.6 Geometrical problems	**Unit 7** 7.1 Mean and range 7.2 Mode, median and range 7.3 Types of average 7.4 Estimating the mean 7.5 Sampling **Unit 8** 8.1 Rectangles, parallelograms and triangles 8.2 Trapezia and changing units 8.3 Area of compound shapes 8.4 Surface area of 3D solids 8.5 Volume of prisms 8.6 More volume and surface area	**Unit 9b** 9.1 Coordinates 9.2 Linear graphs 9.3 Gradient 9.4 y = mx + c **Unit 9a** 9.5 Real-life graphs 9.6 Distance-time graphs 9.7 More Real-life graphs **Unit 10** 10.1 Translation 10.2 Reflection 10.3 Rotation 10.4 Enlargement 10.5 Describing enlargements 10.6 Combining transformations	**Unit 11a** 11.1 Writing ratios 11.2 Using ratios 1 11.3 Ratios and measures 11.4 Using ratios 2 11.5 Comparing using ratios **Unit 11b** 11.6 Using proportion 11.7 Proportion and graphs 11.8 Proportion problems **Unit 12** 12.1 Pythagoras' Theorem 1 12.2 Pythagoras' Theorem 2 12.3 Trigonometry: the sine ratio 1 12.4 Trigonometry: the sine ratio 2 12.5 Trigonometry: the cosine ratio 12.6 Trigonometry: the tangent ratio 12.7 Finding lengths and angles using trigonometry

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Year 11(F)	Advent 1	Advent 2	Lent 1	Lent 2
Key content	Unit 13: Probability Unit 14: Multiplicative reasoning	Unit 15: Constructions, Loci and bearings Unit 16: Quadratic equations and graphs	Unit 17: Perimeter, area and volume 2 Unit 18: Fractions, indices and standard form	Unit 19: Congruence, similarity and vectors Unit 20: More algebra
Key concepts and skills	**Unit 13** 13.1 Calculating probability 13.2 Two events 13.3 Experimental probability 13.4 Venn diagrams 13.5 Tree diagrams 13.6 More tree diagrams **Unit 14** 14.1 Percentages 14.2 Growth and decay 14.3 Compound measures 14.4 Distance, speed and time 14.5 Direct and inverse proportion	**Unit 15a** 15.1 3D solids 15.2 Plans and elevations 15.3 Accurate drawings 1 15.4 Scale drawings and maps 15.5 Accurate drawings 2 **Unit 15b** 15.6 Constructions 15.7 Loci and regions 15.8 Bearings **Unit 16a** 16.1 Expanding double brackets 16.2 Plotting quadratic graphs **Unit 16b** 16.3 Using Quadratic graphs 16.4 Factorising quadratic expressions 16.5 Solving quadratic equations	**Unit 17** 17.1 Circumference of a circle 1 17.2 Circumference of a circle 2 17.3 Area of a circle 17.4 Semicircles and sectors 17.5 Composite 2D shapes and cylinders 17.6 Pyramids and cones 17.7 Spheres and composite solids **Unit 18a** 18.1 Multiplying and dividing fractions **Unit 18b** 18.2 The laws of indices 18.3 Writing large numbers in standard form 18.4 Writing small numbers in standard form 18.5 Calculating with standard form	**Unit 19a** 19.1 Similarity and enlargement 19.2 More similarity 19.3 Using similarity 19.4 Congruence 1 19.5 Congruence 2 **Unit 19b** 19.6 Vectors 1 19.7 Vectors 2 **Unit 20** 20.1 Graphs of cubic and reciprocal functions 20.2 Non-linear graphs 20.3 Solving simultaneous equations graphically 20.4 Solving simultaneous equations algebraically 20.5 Rearranging formulae 20.6 Proof

Mathematics – KS4 Curriculum Map

Higher

ST BEDE'S
CATHOLIC VOLUNTARY ACADEMY

Year 10 (H)	Advent 1	Advent 2	Lent 1	Lent 2	Pentecost 1	Pentecost 2
Key content	**Unit 1a:** Calculations, checking and rounding **Unit 1b:** Indices **Unit 1c:** HCF & LCM, Standard form **Unit 1d:** Surds **Unit 2a:** Setting up and solving equations. Rearranging the formula. **Unit 2b:** Sequences	**Unit 3a:** Averages **Unit 3b:** Interpreting and representing data **Unit 4:** Fractions, ratio and percentages	**Unit 5a:** Angles, polygons and parallel lines **Unit 5b:** Pythagoras and trigonometry **Unit 6a:** Linear graphs **Unit 6b:** Real life graphs	**Unit 7a**: Area **Unit 7b:** Surface area and volume **Unit 7c:** Bounds **Unit 8a:** Transformations **Unit 8b:** Bearings **Unit 8c:** Constructions & Loci	**Unit 9a:** Solving quadratics and simultaneous equations **Unit 9b:** Solving linear inequalities **Unit 10:** Probability	**Unit 11:** Multiplicative reasoning **Unit 12:** Similarity and congruence
Key concepts and skills	**Unit 1a** 1.1 Number problems and reasoning 1.2 Rounding and estimating **Unit 1b** 1.3 Calculating with powers (indices) 1.4 Zero, negative and fractional indices **Unit 1c** 1.5 HCF and LCM 1.6 Powers of 10 and standard form **Unit 1d** 1.7 Surds **Unit 2a** 2.1 Expanding brackets and factorising quadratics. 2.2 Solving and setting up equations. 2.3 Rearranging equations 2.4 Iteration **Unit 2b** 2.5 Sequences	**Unit 3a** 3.1 Averages and range **Unit 3b** 3.2 Statistical diagrams 3.3 Time series 3.4 Scatter graphs 3.5 Line of best fit **Unit 4** 4.1 Fractions 4.2 Ratios 4.3 Ratio and proportion 4.4 Percentages 4.5 Fractions, decimals and percentages	**Unit 5a** 5.1 Angle properties of triangles and quadrilaterals 5.2 Interior angles of a polygon 5.3 Exterior angles of a polygon **Unit 5b** 5.4 Pythagoras' theorem 1 5.5 Pythagoras' theorem 2 5.6 Trigonometry 1 5.7 Trigonometry 2 **Unit 6a** 6.1 Linear graphs 6.2 Perpendicular lines **Unit 6b** 6.3 Real-life graphs 6.1 Graphing rates of change 6.2 Velocity time graphs	**Unit 7a** 7.1 Perimeter and area 7.2 Circles including sectors **Unit 7b** 7.3 Surface area and volume 7.4 Cylinders and spheres 7.5 Pyramids and cones 7.6 3D solids **Unit 7c** 7.7 Bounds 7.8 Prisms **Unit 8a** 8.1 Transformations **Unit 8b** 8.2 Scale drawings and bearings **Unit 8c** 8.3 Constructions and Loci	**Unit 9a** 9.1 Solving quadratic equations 9.2 Completing the square 9.3 Quadratic formula 9.4 Solving simple simultaneous equations 9.5 More simultaneous equations 9.6 Solving linear and quadratic simultaneous equations **Unit 9b** 9.7 Solving linear inequalities **Unit 10** 10.1 Combined events 10.2 Mutually exclusive events 10.3 Experimental probability 10.4 Independent events and tree diagrams 10.5 Conditional probability 10.6 Venn diagrams and set notation	**Unit 11** 11.1 Proportionality using the unitary method 11.2 Best buy 11.3 Compound measures 11.4 Kinematics formulas 11.5 Direct proportion 11.6 Inverse proportion **Unit 12** 12.1 Congruence 12.2 Geometric proof and congruence 12.3 Similarity 12.4 Similarity in 3D solids

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Year 11(H)	Advent 1	Advent 2	Lent 1	Lent 2
Key content	**Unit 13a:** Graphs of Trigonometric functions **Unit 13b:** Area of a triangle, sine and cosine rule **Unit 14:** Cumulative frequency, boxplots and Histograms	**Unit 15:** Quadratics and graphs Unit 16a: Circle theorems **Unit 16b:** Circle Geometry	**Unit 17a**: Rationalise the denominator **Unit 17b:** Algebraic fractions **Unit 17c:** Changing the subject of a formula **Unit 17d:** Algebraic proofs **Unit 17d:** Functions **Unit 18**: Vectors and geometric proof	**Unit 19a:** Reciprocal and Exponential Graphs **Unit 19b:** Gradient and area under graphs
Key concepts and skills	**Unit 13a** 13.1 Graph of the sine function 13.2 Graph of the cosine function 13.3 Graph of the tangent function 13.4 Transforming trigonometric graphs **Unit 13b** 13.5 Area of a traingle 13.6 The sine and cosine rule 13.7 Solving problems in 3D **Unit 14** 14.1 Sampling 14.2 Cumulative frequency 14.3 Box plots 14.4 Drawing histograms 14.5 Interpreting histograms 14.6 Comparing and describing distributions	**Unit 15** 15.1 Sketching a quadratic from factorizing 15.2 Identifying a quadratic from a graph 15.3 Sketching a cubic function 15.4 Solving simultaneous equations graphically 15.5 Representing quadratic inequalities graphically and solve 15.6 Quadratic equations 15.7 Using iteration to solve equations **Unit 16a** 16.1 Knowing and applying basic circle theorems 16.2 Find and give reasons for missing angles when combining circle theorems 16.3 Proofing circle theorems **Unit 16b** 16.4 Recognize and construct the graph of a circle 16.5 Find the equation of a tangent	**Unit 17a** 17.1 Rationalise the denominator **Unit 17b** 17.2 Algebraic fractions 17.3 Simplifying algebraic fractions 17.4 Solving algebraic fractions **Unit 17c** 17.5 Changing the subject **Unit 17d** 17.6 Algebraic proofs **Units 17e** 17.7 Functions **Unit 18** 18.1 Vectors and vector notation 18.2 Vector arithmetic 18.3 Vector geometry 18.4 Parallel vectors and collinear points 18.5 Solving geometric problems	**Unit 19** 19.1 Sketch reciprocal and exponential functions 19.2 Exponential growth and decay **Unit 19b** 19.3 Estimate the area under a quadratic graph 19.4 Estimate the gradient of a quadratic or non-linear graph at a given point by sketching the tangent and finding its gradient 19.5 Interpret the gradient of non-linear graph in curved distance–time and velocity–time graphs: 19.6 Interpret the gradient of a linear or non-linear graph in financial contexts 19.7 Interpret the area under a linear or non-linear graph in real-life contexts 19.8 Interpret the rate of change of graphs of containers filling and emptying;