Maths Long Term Plans

ARCHBISHOP SENTAMU ACADEMY
CHURCH OF ENGLAND

	Autumn 1 1-7	Autumn 2 8-14	Spring 1 15-21	Spring 2 22-27	Summer 1 28-32	Summer 2 33-39
Year 7	N1 *Understanding of place value.* Key number bonds and multiplication facts Written methods of calculation. Rounding values. Using directed numbers. P1 Using a probability scale. Listing outcomes of events.	A1 Understanding algebraic notation. Simplifying algebraic expressions. G1 Calculate perimeter of shapes. Calculating areas. Understand properties of 3D shapes.	N2 Factors and multiples. Number patterns. Fractions; equivalent fractions and fractions of an amount. Percentages of an amount. A2 Coordinates. Horizontal and vertical lines.	G2 Properties of circles. Line symmetry. Transformations. N3 Prime numbers. *Powers and roots* *Highest Common Factors and Lowest Common Multiples.*	G3 Polygons. Angle fact. Angles in triangles. R1 Introduction to ratio. Unit conversions. Expressing quantities as fractions.	R1 Introduction to ratio. Unit conversions. Expressing quantities as fractions. S1 Project work to include: Pictograms. Bar charts. Frequency tables and diagrams.
Year 8	N1 Using place value. More advanced written calculations, including with decimals and directed numbers.. Application to real life; units of measurement P1 Outcomes of events.	A1 Expanding brackets. Factorisation. Substitution. G1 More advanced areas. Applications of area and perimeter. Application of properties of shapes	N2 Fractions, decimals and percentages. All operations with fractions. A2 Sequences, including nth term.	G2 Measuring and drawing angles. Scale drawings. N3 Application to real-life problems. Function machines and inverse operations.	G3 Properties of special triangles. Angles and parallel lines. Angle sum of polygons. R1 Unit pricing. Simplifying ratios. Sharing in ratios.	R1 Unit pricing. Simplifying ratios. Sharing in ratios. S1 Project work to include: Averages and the range. Scatter diagrams. Pie charts.

	Mutually exclusive events.					
Year 9	Mastery recap and review from Y7 and Y8	A1 Graphs and graph constructions. N1 Rounding and estimation. Standard form. Exact representation of roots.	G1 Area and circumference of circles. Volume and surface area of prisms, cones and spheres. A2 Solving equations. Rearranging equations. Simultaneous equations.	N2 Using percentages, decimals and fractions in calculations and applied situations. G2 Loci and constructions. Pythagoras. Trigonometry.	R1 Increasing and decreasing by a percentage. Compound measures. Direct and inverse proportion. A3 Inequalities. Quadratic sequences. Regions.	P1 Two-way tables. Venn diagrams. Relative frequency. S1 Project work to include: Averages from a table.
Year 10 Foundation	Mastery recap and review from Y9	A1 Expanding brackets and factorising Sketching graphs and functions Using flowcharts Linear sequences Special sequences N1 Negatives in real life Equivalent fractions Factors, multiples and primes Powers and indices	G1 Using a protractor Transformations Area of a trapezium Surface area Volume of cuboids P1 Two-way tables Frequency tables Venn diagrams Averages from a table N2 Comparing fractions Operations with fractions Reciprocals	R1 Value for money Introduction to proportion Exchanging money Sharing in a ratio G2 Angles and parallel lines Angles in polygons Bearings Constructions Sectors and segments Pythagoras' theorem	A2F Rearranging formulae Inequalities Simultaneous equations Special sequences	N3F HCF and LCM Working with indices, including negative Standard Form Percentages of an amount Change to a percentage Rounding to a s.f. Estimation Bounds

Year 10 Higher	Mastery recap and review from Y9	A1 Substitution Straight line graphs Sketching functions Nth term of sequences N1 Indices Fractions, decimals and percentages Rounding and estimation Bounds	G1 Area of a trapezium Surface area Volume Angles and parallel lines Angles in polygons Bearings Constructions Sectors and segments Pythagoras' theorem A2 Rearranging formulae Inequalities Simultaneous equations Special sequences P1 Two-way tables Frequency tables Venn diagrams Averages from a table Tree diagrams Sampling	R1 Percentage change Simple and compound percentage change Compound units Similar shapes D-T graphs Direct and inverse proportion A3 Factorising and solving quadratics Roots and turning points of quadratics Equations of straight line graphs	A3 Simultaneous equations Geometric progressions G2 Loci Sectors and segments Congruency Trigonometry Spheres, cones and frustums	P2 Tree diagrams Stratified sampling Cumulative frequency and box plots Histograms
Year 11 Foundation	PPE preparation:	DIRT following PPE marking. 3A Factorise and solve quadratics Equations of straight line graphs Cubic and reciprocal graphs	P3 Tree diagrams Sampling populations including stratified G3 Loci Congruent triangles	Revision	Revision	

			Trigonometry Spheres and cones Introduction to vectors			
Year 11 Higher	PPE preparation	DIRT following PPE marking. A5 Algebraic proof Trigonometric graphs Graph transformations Equations of circles	G4 Sine rule Cosine rule Vectors A6 Regions Completing the square Algebraic fractions Simultaneous equations involving non-linears Composite functions	Revision	Revision	
Sixth Form resit	Groundwork: Number All 4 operations Rounding Fractions, decimals and percentages Laws of indices Prime factors LCM and HCF Groundwork: Algebra Simplify expressions Index notation Substitution Coordinates Groundwork: Geometry Angles in polygons	Straight-line graphs Angle properties in shapes Accuracy Circles Equations and inequalities Probability Sequences	Constructions Quadratics Quadratic graphs Ratio and compound measures Proportion Simultaneous equations	Pythagoras' theorem Statistical graphs and measures Transformation of shapes and vectors Bivariate data Sampling Probability of combined events Volume and surface area	Trigonometry Further graphs Mathematical arguments Revision	

	and parallel lines Perimeter Area Groundwork: Statistics Pictograms Bar charts Pie charts Line graphs Stem and leaf diagrams Percentage Indices and roots Algebraic manipulation					
Maths in Context	A1: Sampling A2: Time series and moving averages A3: Constructing diagrams for grouped and ungrouped data A4: Interpret and analyse data through diagrams A5: Interpret and analyse: include standard deviation and variance A6: Recognise correlation and examine in relation to causation A10: Use and apply Spearman's rank	SG1: Growth and decay with percentages SG2: Simple interest and compound interest SG3: Recognise and sketch different functions SG4: Interpret gradients at points SG5: Calculations with roots and indices SG6/9/10: Recognise and use sequences	LP1: Simultaneous equations and understanding solutions LP2: Solve linear inequalities LP3: Use algebra to support and construct arguments Linear programming with up to 3 variables	P1: Theoretical probability P2: Calculating probability P3: Tree diagrams and Venn diagrams P4: Use and interpret formula with probability P5: Understand and interpret risk	Revision	

AS Maths	P1: Coordinate Geometry P2: Algebra and functions P3: Further algebra	P4: Trigonometry P5: Vectors P8: Exponentials and Logarithms	P6: Differentiation P7: Integration S1: Statistical sampling S2: Data presentation and interpretation	S3: Probability S4: Statistical distribution M1: Quantities and units in mechanics M2: Kinematics 1 (constant acceleration)	S5: Statistical hypothesis testing M3: Forces and Newton's law M4: Kinematics 2 (variable acceleration)	
A2 Maths	P1: Proof P2: Algebraic and partial fractions P3: Functions and modelling P6: Trigonometry	P4: Series and sequences P5: The binomial theorem P7: Parametric equations P8: Differentiation	P9: Numerical methods P10: Integration P11: Integration	S1: Regression and correlation S2: Probability M1: Moments M2: Forces at an angle	S3: The normal distribution M3: Application of kinematics M4: Application of forces Revision	