	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 13 Further Maths	***Unit title/Theme*** *Sub title(s)* Review Integration – P2 Review Volumes of revolution – CP1 Review Series – CP1 Review Series section2.1– CP2 Volumes of revolution – CP2 Methods in calculus – CP2 Hyperbolic functions - CP2 Review Complex numbers – CP1 Argand diagrams – CP1 Matrices – CP1 Roots of polynomials - CP1 Simplex algorithm – D1 Travelling salesman problem – D1	***Unit title/Theme*** *Sub title(s)* Series section 2.2-2.4 – CP2 Methods in differential equations – CP2 Modelling with differential equations – CP2 Linear transformations – CP1 Complex numbers – CP2 Vectors – CP1 Vectors – FP1 Polar coordinates – CP2	***Unit title/Theme*** *Sub title(s)* Conics 1 – FP1 Conics 2 – FP1 Methods in calculus – FP1 section 7.1/7.2 only Reducible differential equations – FP1 t-formulae – FP1 Methods in calculus – FP1 section 7.3 only Proof by induction – CP1 Inequalities – FP1 Taylor Series – FP1	***Unit title/Theme*** *Sub title(s)* Numerical methods – FP1 *REVISION*	***Unit title/Theme*** *Sub title(s)* REVISION	***Unit title/Theme*** *Sub title(s)* EXAMS
	Concepts/Tier 3 vocabulary Same as topic names above	***Concepts/Tier 3 vocabulary*** Same as topic names above	***Concepts/Tier 3 vocabulary*** Same as topic names above	***Concepts/Tier 3 vocabulary*** Same as topic names above and all previous	***Concepts/Tier 3 vocabulary*** Same as all topic names above	***Concepts Tier 3 vocabulary*** Same as all topic names above
	Justification: ***Each topic requires GCSE knowledge of Maths, or knowledge of the previous topic in the half terms or previous half term to understand and access it.***					

	Assessment: *Half Term Topic Test and Decision PPE*	***Assessment:*** *Half Term Topic Test*	***Assessment:*** ***PPE***	***Assessment:*** *Half Term Topic Test*	***Assessment:*** *In Class mini-tests*	***Assessment:*** *A Level Exams*
	Wider reading/Cultural capital Oxbridge reading list offered to any student wishing to pursue a Mathematics degree. Literacy word display throughout the Maths corridor to promote key vocabulary used throughout the curriculum. Further Maths offered at A level but also to year 11 as an addition GCSE style qualification. Careers involving Mathematics CPD delivered to classes emphasising the importance of the subject and its use in basically every career Students entered for UKMT challenges School trips organised to Maths themed venues Use of SPARX Maths					

	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Year 13 Maths	***Unit title/Theme*** *Sub title(s)* Review - Binomial Expansion – P2 Functions – P2 Sequences and Series – P2 Differentiation – P2 Regression, Correlation & Hypothesis testing – S&M2 Review - Conditional Probability – S&M2	***Unit title/Theme*** *Sub title(s)* Radians – P2 Trigonometric Functions – P2 Trigonometry & Modelling – P2 Review - Binomial Distribution & Hypothesis testing – S&M1 Normal Distribution – S&M2	***Unit title/Theme*** *Sub title(s)* Parametric Equations – P2 Integration – P2 Moments – S&M2 Forces & Friction – S&M2	***Unit title/Theme*** *Sub title(s)* Continue Integration – P2 Vectors – P2 Numerical Methods – P2 Application of forces – S&M2 Further Kinematics – S&M2	***Unit title/Theme*** *Sub title(s)* REVISION	***Unit title/Theme*** *Sub title(s)* EXAMS
	Concepts/Tier 3 vocabulary Same as topic names above	***Concepts/Tier 3 vocabulary*** Same as topic names above	***Concepts/Tier 3 vocabulary*** Same as topic names above	***Concepts/Tier 3 vocabulary*** Same as topic names above	***Concepts/Tier 3 vocabulary*** Same as all topic names above	***Concepts Tier 3 vocabulary*** Same as all topic names above

	Justification: ***Each topic requires GCSE knowledge of Maths, or knowledge of the previous topic in the half terms or previous half term to understand and access it.***					
	Assessment: *Half Term Topic Test*	***Assessment:*** *Half Term Topic Test*	***Assessment:*** ***PPE***	***Assessment:*** *Half Term Topic Test*	***Assessment:*** *In class mini tests*	***Assessment:*** *A Level Exams*
	Wider reading/Cultural capital Oxbridge reading list offered to any student wishing to pursue a Mathematics degree. Literacy word display throughout the Maths corridor to promote key vocabulary used throughout the curriculum. Further Maths offered at A level but also to year 11 as an addition GCSE style qualification. Careers involving Mathematics CPD delivered to classes emphasising the importance of the subject and its use in basically every career Students entered for UKMT challenges School trips organised to Maths themed venues Use of SPARX Maths					

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Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 12 Further Maths	***Unit title/Theme*** *Sub title(s)* Algebraic expressions – brief review – P1 Quadratics – Brief review – P1 Equations & inequalities – P1 Graphs & transformations – P1 Algebraic methods – P1 Binomial expansion – P1 Data Collection – S&M1 Measures of location & spread – S&M1 Representations of data – S&M1 Correlation – S&M1 Probability – S&M1 Statistical distributions – S&M1 Hypothesis testing – S&M1 Straight line graphs – P1 Circles – P1	***Unit title/Theme*** *Sub title(s)* Trigonometric identities & equations – P1 Differentiation – P1 Integration – P1 Modelling in mechanics – S&M1 Constant acceleration – S&M1 Forces & motion – S&M1 Variable acceleration – S&M1 Vectors – P1 Exponentials & logarithms – P1	***Unit title/Theme*** *Sub title(s)* Functions & graphs – P2 Binomial expansion – P2 Regression, correlation & hypothesis testing – S&M2 Conditional probability – S&M2 Normal distribution – S&M2 Algebraic methods – P2 Sequences & series – P2	***Unit title/Theme*** *Sub title(s)* Trigonometric functions – P2 Trigonometry & modelling – P2 Moments –S&M2 Forces & Friction – S&M2 Projectiles – S&M2 Radians – P2 Vectors – P2	***Unit title/Theme*** *Sub title(s)* Parametric equations – P2 Differentiation – P2 Integration – P2 Application of forces – S&M2 Further kinematics – S&M2 Algorithms – D1 Graphs & networks – D1 Algorithms on graphs – D1	***Unit title/Theme*** *Sub title(s)* Route inspection – D1 Linear programming – D1 Critical path analysis – D1 Review plus end of year tests

	Trigonometric ratios – P1					
	Concepts/Tier 3 vocabulary Same as topic names above	***Concepts/Tier 3 vocabulary*** Same as topic names above	***Concepts/Tier 3 vocabulary*** Same as topic names above	***Concepts/Tier 3 vocabulary*** Same as topic names above	***Concepts/Tier 3 vocabulary*** Same as topic names above	***Concepts Tier 3 vocabulary*** Same as topic names above and all previous
	Justifications ***Each topic requires GCSE knowledge of Maths, or knowledge of the previous topic in the half terms or previous half term to understand and access it.***					
	Assessment: *Half Term Topic Test*	***Assessment:*** *-Half Term Topic Test*	***Assessment:*** *Half Term Topic Test*	***Assessment:*** *Half Term Topic Test*	***Assessment:*** ***PPE***	***Assessment*** *End of Year Test*
	Wider reading/Cultural capital Oxbridge reading list offered to any student wishing to pursue a Mathematics degree. Literacy word display throughout the Maths corridor to promote key vocabulary used throughout the curriculum. Further Maths offered at A level but also to year 11 as an addition GCSE style qualification. Careers involving Mathematics CPD delivered to classes emphasising the importance of the subject and its use in basically every career Students entered for UKMT challenges School trips organised to Maths themed venues Use of SPARX Maths					

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 12 Maths	***Unit title/Theme*** *Sub title(s)* Algebraic expressions – brief review only Quadratics – P1 Equations & inequalities – P1 Graphs & Transformations – P1	***Unit title/Theme*** *Sub title(s)* Circles – P1 Algebraic methods – P1 Binomial expansion – P1 Probability – S&M1	***Unit title/Theme*** *Sub title(s)* Trigonometric ratios – P1 Trigonometry identities & equations – P1 Modelling in mechanics – S&M1 Constant acceleration – S&M1	***Unit title/Theme*** *Sub title(s)* Vectors – P1 Differentiation – P1 Forces & motion – S&M1	***Unit title/Theme*** *Sub title(s)* Integration – P1 Exponentials & logarithms – P1 Variable acceleration – S&M1	***Unit title/Theme*** *Sub title(s)* Algebraic methods – P2 Function & graphs – P2

	Straight line graphs – P1 Data collection – S&M1 Measures of location & spread – S&M1 Representations of data – S&M1 Correlation – S&M1	Statistical distributions – S&M1 Hypothesis testing – S&M1				
	Concepts/Tier 3 vocabulary Same as topic names above	***Concepts/Tier 3 vocabulary*** Same as topic names above	***Concepts/Tier 3 vocabulary*** Same as topic names above	***Concepts/Tier 3 vocabulary*** Same as topic names above	***Concepts/Tier 3 vocabulary*** Same as topic names above	***Concepts Tier 3 vocabulary*** Same as topic names above
	Justification: ***Each topic requires GCSE knowledge of Maths, or knowledge of the previous topic in the half term to understand and access it.***					
	Assessment: *Half Term Topic Test*	***Assessment:*** *Half Term Topic Test*	***Assessment:*** *Half Term Topic Test*	***Assessment:*** *Half Term Topic Test*	***Assessment:*** ***PPE***	***Assessment*** *Half Term Topic Test*
	Wider reading/Cultural capital Oxbridge reading list offered to any student wishing to pursue a Mathematics degree. Literacy word display throughout the Maths corridor to promote key vocabulary used throughout the curriculum. Further Maths offered at A level but also to year 11 as an addition GCSE style qualification. Careers involving Mathematics CPD delivered to classes emphasising the importance of the subject and its use in basically every career Students entered for UKMT challenges School trips organised to Maths themed venues Use of SPARX Maths					

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Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
11H	***Unit title/Theme*** *Sub title(s)* *NUM 3 Powers and Roots* *ALG 1 Expressions, Equations, and Formula* *NUM 4 Fractions* *NU&M 6 Fractions, Decimals, and Percentages* *NUM 7 Percentages* *ALG 7 Algebraic Proof*	***Unit title/Theme*** *Sub title(s)* *ALG 3 Coordinate Geometry* *ALG 4 Real Life Graphs* *SSM 1 Lines and Angles* *HD 2 Probability* *NUM 8 Ratio and Proportion* *SSM 7 Vectors*	***Unit title/Theme*** *Sub title(s)* *ALG 2 Number patterns and sequences* *ALG 5 Function notation* *SSM 2 Properties of Shapes* *SSM 6 Properties of Shapes (3D)*	***Unit title/Theme*** *Sub title(s)* *SSM 3 Trigonometry* *ALG 6 Equation of a Circle* *HD 3 Representing Data*	***Unit title/Theme*** *Sub title(s)* *SSM 4 Units, measuring and estimating* *SSM 5 Constructions* *CONTINGENCY, EXAM PRACTICE AND REVISION*	*EXAM SEASON*
	Concepts/Tier 3 vocabulary *Completing the square* *Quadratic formula* *Expand trinomials* *Fractional and negative indices* *Expanding brackets with surds* *Rationalising the denominator* *Solving equations with algebraic fractions* *Recurring decimals* *Compound intertest and geometric sequences* *Proving expressions are multiples of integers*	***Concepts/Tier 3 vocabulary*** *Perpendicular lines* *Sketching quadratics and cubics* *Area under speed time graphs* *Tangent at a point* *Circle theorems proof* *Venn diagrams with three sets* *Probability problems* *Capture recapture* *Graphs of proportionality* *Proportionality from a table* *Vector algebra* *Lines split in ratios* *Proof of straight lines*	***Concepts/Tier 3 vocabulary*** *Forming and using iteration* *Proving location of roots* *Function notation* *Composite and inverse functions* *Exponential graphs* *Transforming graphs* *Proof of congruency* *Surface area and volume of cones, spheres, frustums* *Density problems* *Pressure, force, area*	***Concepts/Tier 3 vocabulary*** *Bearings using Pythagoras and Trigonometry* *3D Pythagoras and Trigonometry* *Exact values* *Sine Rule* *Cosine Rule* *Area of any triangle* *Sin, Cos, Tan graphs* *Sketching and shading regions* *Equation of a circle* *Non-linear simultaneous equations* *Gradient of a radius and tangent* *Equation of a tangent to a circle* *Drawing and interpreting histograms* *Finding and estimating averages from histograms*	***Concepts/Tier 3 vocabulary*** *Bounds including trigonometry* *Constructions and Loci*	

Justification:

Our spiral curriculum based on the National Curriculum. It is our own scheme of work, not 'off the shelf'. Our spiral curriculum has prior learning, core learning and extension embedded throughout to allow pupils to progress to the best of their ability.

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Our spiral curriculum provides foundations for future e.g. logical skills, reasoning, enjoyment, curiosity, resilience and sets high expectations throughout.

Assessment:	***Assessment:***	***Assessment:***	***Assessment:***	***Assessment:***	***Assessment:***
MOCK GCSE PAPER	***PPE***	***HALF TERM TEST***	***PPE***		
-baseline					

Wider reading/Cultural capital

Oxbridge reading list offered to any student wishing to pursue a Mathematics degree.
Literacy word display throughout the Maths corridor to promote key vocabulary used throughout the curriculum.
Further Maths offered at A level but also to year 11 as an addition GCSE style qualification.
Careers involving Mathematics CPD delivered to classes emphasising the importance of the subject and its use in basically every career
Students entered for UKMT challenges
School trips organised to Maths themed venues
Use of SPARX Maths

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
11F	***Unit title/Theme*** *Sub title(s)* Groundwork: Number Groundwork: Algebra Groundwork: Geometry Groundwork: Statistics Percentages Indices and roots Algebraic manipulation	***Unit title/Theme*** *Sub title(s)* Straight-line graphs Angle properties in shapes Accuracy Circles Equations and inequalities Probability Sequences	***Unit title/Theme*** *Sub title(s)* Constructions Quadratics Quadratic graphs Ratio and compound measures Proportion Simultaneous equations Pythagoras' theorem	***Unit title/Theme*** *Sub title(s)* Statistical graphs and measures Transformations of shapes and vectors Bivariate data Sampling Probability of combined events Volume and surface area Trigonometry	***Unit title/Theme*** *Sub title(s)* Further graphs Mathematical arguments Revision and past paper practice	
	Concepts/Tier 3 vocabulary *Directed numbers* *Order of Operations* *Using Place Value* *4 operations with Decimals* *Rounding* *Product Prime Factors* *HCF/LCM* *Laws of Indices* *Simplifying Expressions* *Algebraic Substitution* *Expanding and Factorising* *Area/Perimeter Shapes* *Angles in Parallel Lines* *Drawing and Interpreting Charts* *Percentages* *Standard Form*	***Concepts/Tier 3 vocabulary*** Drawing SLG *Gradient and Equations of SLG* *Angles in Polygons* *Rounding, Truncation and Error Intervals* *Area/Circumference of Circles* *Arcs/Sectors* *Solving Equations and Inequalities* *Experimental and Theoretical Probabilities* *Frequency Trees* *Types of sequences* *Term-to-term and position-to-term rules*	***Concepts/Tier 3 vocabulary*** Constructions and Loci Scale Drawings Bearings Factorising/Solving Quadratics Quadratic Graphs Simplifying and sharing in a ratios Density, Pressure and Speed Direct and Inverse Proportion Recipes and Exchange Rates Linear Simultaneous Equations Pythagoras' Theorem	***Concepts/Tier 3 vocabulary*** *Averages from frequency tables* *Stem and Leaf* *Transformations* *Vectors* *Scatter Graphs* *Sampling* *Venn Diagrams* *Probability Trees* *Volume of solids* *Surface Area* *Trigonometry* *Trig Exact Values* *Cubic Graphs* *Reciprocal Graphs*		

	Assessment: ***MOCK GCSE PAPER*** ***-baseline***	***Assessment:*** ***PPE***	***Assessment:*** ***HALF TERM TEST***	***Assessment:*** ***PPE***	***Assessment:***	***Assessment:***
Wider reading/Cultural capital Oxbridge reading list offered to any student wishing to pursue a Mathematics degree. Literacy word display throughout the Maths corridor to promote key vocabulary used throughout the curriculum. Further Maths offered at A level but also to year 11 as an addition GCSE style qualification. Careers involving Mathematics CPD delivered to classes emphasising the importance of the subject and its use in basically every career Students entered for UKMT challenges School trips organised to Maths themed venues Use of SPARX Maths						

Curriculum Mapping: Mathematics Year 7H-9H

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Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
10H	***Unit title/Theme*** *Sub title(s)* ***ALG 1 Expressions, Equations, and Formula*** ***NUM 3 Powers and Roots*** ***NUM 4 Fractions*** ***NU&M 6 Fractions, Decimals, and Percentages*** ***NUM 7 Percentages***	***Unit title/Theme*** *Sub title(s)* ***ALG 3 Coordinate Geometry*** ***ALG 4 Real Life Graphs*** ***SSM 1 Lines and Angles*** ***HD 2 Probability*** ***NUM 8 Ratio and Proportion***	***Unit title/Theme*** *Sub title(s)* ***ALG 2 Number patterns and sequences*** ***ALG 5 Function notation*** ***SSM 2 Properties of Shapes***	***Unit title/Theme*** *Sub title(s)* ***SSM 3 Trigonometry*** ***HD 3 Representing Data***	***Unit title/Theme*** *Sub title(s)* ***SSM 4 Units, measuring and estimating*** ***SSM 5 Constructions*** ***ALG 6 Equation of a Circle***	***Unit title/Theme*** *Sub title(s)* ***ALG 7 Algebraic Proof*** ***SSM 6 Properties of Shapes (3D)*** ***SSM 7 Vectors***
	Concepts/Tier 3 vocabulary *Completing the square* *Quadratic formula* *Expand trinomials* *Fractional and negative indices* *Expanding brackets with surds* *Rationalising the denominator* *Solving equations with algebraic fractions* *Recurring decimals* *Compound intertest and geometric sequences*	***Concepts/Tier 3 vocabulary*** *Perpendicular lines* *Sketching quadratics and cubics* *Area under speed time graphs* *Tangent at a point* *Circle theorems proof* *Venn diagrams with three sets* *Probability problems* *Capture recapture* *Graphs of proportionality* *Proportionality from a table*	***Concepts/Tier 3 vocabulary*** *Forming and using iteration* *Proving location of roots* *Function notation* *Composite and inverse functions* *Exponential graphs* *Transforming graphs* *Proof of congruency*	***Concepts/Tier 3 vocabulary*** *Bearings using Pythagoras and Trigonometry* *3D Pythagoras and Trigonometry* *Exact values* *Sine Rule* *Cosine Rule* *Area of any triangle* *Sin, Cos, Tan graphs* *Drawing and interpreting histograms* *Finding and estimating averages from histograms*	***Concepts/Tier 3 vocabulary*** *Bounds including trigonometry* *Sketching and shading regions* *Equation of a circle* *Non-linear simultaneous equations* *Gradient of a radius and tangent* *Equation of a tangent to a circle*	***Concepts/Tier 3 vocabulary*** *Proving expressions are multiples of integers* *Surface area and volume of cones, spheres, frustums* *Density problems* *Pressure, force, area* *Vector algebra* *Lines split in ratios* *Proof of straight lines*

Justification:

Our spiral curriculum based on the National Curriculum. It is our own scheme of work, not 'off the shelf'. Our spiral curriculum has prior learning, core learning and extension embedded throughout to allow pupils to progress to the best of their ability.

We know that in maths, gaps in pupils' knowledge cause serious difficulties in pupils' ability to progress into the next stage of learning. As a result, we purposely sequence our curriculum to revisit previously learnt topics and then build on this. Our spiral curriculum embeds this re-visiting idea every lesson through retrieval practice, questioning for understanding, live marking and observation, effective feedback and assessments. Our spiral curriculum benefits increase in learners' mathematical understanding as topics are revisited, levels of difficulty increase and new learning is constantly related to previous learning.

Our spiral scheme of work is designed to support pupils at their correct level (H/I/F), starting in year 7 based on KS2 results. Therefore, pupils are placed in sets from start of year 7. The scheme of work progresses each half term and has features of all 4 strands with each half term.

Our spiral curriculum provides foundations for future e.g. logical skills, reasoning, enjoyment, curiosity, resilience and sets high expectations throughout.

Assessment: ***Half term test based on these ideas***	***Assessment:*** ***Half term test based on these ideas***	***Assessment:*** ***Half term test based on these ideas***	***Assessment:*** ***PPEs based on all topics from year 7 up to now***	***Assessment:*** ***Half term test based on these ideas***	***Assessment:*** ***Half term test based on these ideas***

Wider reading/Cultural capital

Oxbridge reading list offered to any student wishing to pursue a Mathematics degree.
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Further Maths offered at A level but also to year 11 as an addition GCSE style qualification.
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Students entered for UKMT challenges
School trips organised to Maths themed venues
Use of SPARX Maths

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
9H/10I	***Unit title/Theme*** *Sub title(s)* ***ALG 1 Expressions, Equations, and Formula*** ***NUM 3 Powers and Roots*** ***NUM 4 Fractions***	***Unit title/Theme*** *Sub title(s)* ***NUM 6 Fractions, Decimals, and Percentages*** ***NUM 7 Percentages*** ***SSM1 Lines and Angles*** ***ALG 2 Number Patterns and Sequences***	***Unit title/Theme*** *Sub title(s)* ***HD 1 Collecting and analysing data*** ***SSM 2 Properties of Shapes (2D)*** ***HD 2 Probability*** ***ALG 3 Coordinate Geometry***	***Unit title/Theme*** *Sub title(s)* ***SSM 3 Perimeter and Area*** ***SSM 4 Units, Measuring, and Estimating*** ***HD 3 Representing Data***	***Unit title/Theme*** *Sub title(s)* ***NUM 8 Ratio and Proportion*** ***SSM 5 Constructions*** ***ALG 4 Real Life Graphs***	***Unit title/Theme*** *Sub title(s)* ***SSM 6 Properties of Shapes (3D)*** ***SSM 7 Transformations***
	Concepts/Tier 3 vocabulary *Simultaneous equations* *Factorising quadratics using difference of two squares* *Inequalities* *Reciprocal and exponential graphs* *Fractional and negative indices* *Surds* *Standard form* *Algebraic fractions*	***Concepts/Tier 3 vocabulary*** *Recurring decimals* *Simple and compound interest* *Reverse percentages* *Circle theorems* *Fibonacci and geometric sequences* *Nth term* *Quadratic sequences*	***Concepts/Tier 3 vocabulary*** *Quartiles from Stem and Leaf diagrams* *Combined mean* *Similar shapes* *Scales factors for area and volume* *Probability problems with and without replacement* *Given that for venn diagrams* *Y=mx+c* *Equation of a line* *Distance between two points* *Parallel lines* *Perpendicular gradients*	***Concepts/Tier 3 vocabulary*** *Sector area and arc length for any angle* *Pythagoras problems* *SOHCAHTOA for missing sides and angles* *Exact values* *Calculations using upper and lower bounds* *Finding approximate values using bounds* *Cumulative frequency graphs* *Box plots* *Quartiles* *Comparing data*	***Concepts/Tier 3 vocabulary*** *Direct and inverse proportion using indices* *Loci and regions* *Sketching inequalities* *Speed time graphs* *Area under speed time graphs* *Gradient of speed time graphs*	***Concepts/Tier 3 vocabulary*** *Solving problems involving surface area and volume of cylinders* *Worded problems relating volume and litres to cubic centimetres* *Volume of pyramids and cones* *Negative scale factor for enlargement* *Combined transformations* *Column vectors* *Vector algebra*

Justification:

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Use of SPARX Maths

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	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
8H/9I/10F	***Unit title/Theme*** *Sub title(s)* ***NUM 1/2 Place Value and Numerical Methods*** ***SSM 1 Lines and Angles*** ***ALG 1 Expressions, Equations, and Formula***	***Unit title/Theme*** *Sub title(s)* ***NUM 3 Powers and Roots*** ***NUM 4 Fractions*** ***HD 1 Collecting and Analysing Data*** ***NUM 5 Factors, Multiples, and Primes*** ***SSM 2 Properties of Shapes (2D)***	***Unit title/Theme*** *Sub title(s)* ***SSM 3 Perimeter and Area*** ***ALG 2 Number Patterns and Sequences*** ***NUM 6 Fractions, Decimals, and Percentages***	***Unit title/Theme*** *Sub title(s)* ***SSM 4 Units, Measure, and Estimating*** ***HD 2 Probability*** ***NUM 7 Percentages***	***Unit title/Theme*** *Sub title(s)* ***ALG 3 Coordinate Geometry*** ***SSM 5 Constructions*** ***HD 3 Representing Data*** ***NUM 8 Ratio and Proportion***	***Unit title/Theme*** *Sub title(s)* ***SSM 6 Properties of Shapes (3D)*** ***ALG 4 Real Life Graphs*** ***SSM 7 Transformations***
	Concepts/Tier 3 vocabulary *Dividing by decimals* *Estimation* *BIDMAS* *Bearings* *Angles in triangles* *Interior and exterior angles in polygons* *Solving equations involving fractions* *Forming and solving equations* *Factorising single brackets* *Solving inequalities* *Expanding double brackets*	***Concepts/Tier 3 vocabulary*** *Positive integers applied to fractions* *Index laws for multiplication and division* *Dividing by fractions* *Calculations with mixed numbers* *Discrete and continuous data* *Median and modal class from grouped data* *Estimating the mean from grouped data* *Averages from Stem and Leaf diagrams* *Highest Common Factor and Lowest Common Multiple of two or more numbers* *Highest Common Factor and Lowest Common Multiple worded problems* *Scale factor for similar shapes* *Identify congruent triangles using the conditions*	***Concepts/Tier 3 vocabulary*** *Form algebraic expressions for perimeter and area and solve* *Arc length of semi circles and quadrants* *Area of semi circles and quadrants* *Area and perimeter of compound shapes involving sectors* *Pythagoras' Theorem* *Next term of quadratic sequences* *Nth term for basic quadratic sequences* *Understanding simple geometric and Fibonacci sequences* *Problem solving when comparing fractions and percentages of an amount* *Problem solving involving ratios with fractions and percentages*	***Concepts/Tier 3 vocabulary*** *Finding upper and lower bounds* *Error intervals* *Area and volume conversion* *Relative frequency and Expected frequency calculations* *Tree diagrams* *Simple Venn notation* *Percentage change* *Percentage increase/decrease*	***Concepts/Tier 3 vocabulary*** *Calculate the equation of a line from a graph* *Deduce the gradient and y intercept from an equation* *Parallel gradients* *Construct angles* *Simple loci* *Interpolation and extrapolation from scatter graphs* *Causation and correlation* *Frequency polygons* *Solving ratio problems* *Direct proportion* *Worded inverse proportion*	***Concepts/Tier 3 vocabulary*** *Volume and surface area of prisms* *Volume and surface area of cylinders* *Gradient of distance time graphs* *Solve speed, distance, time problems when time is not whole hours* *Reflections in y=x and y=-x* *Describe a rotation around any point* *Enlarge 2D shapes* *Describe enlargements* *Invarian*
	Justification:					

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Wider reading/Cultural capital

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Use of SPARX Maths

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
7H/8I/9F	***Unit title/Theme*** *Sub title(s)* ***NUM 1 Place Value and Numerical Methods*** ***NUM 2 Properties of Number*** ***SSM 1 Lines and Angles*** ***NUM 3 Powers and Roots*** ***ALG 1 Expressions, Equations, and Formula***	***Unit title/Theme*** *Sub title(s)* ***NUM 4 Fractions*** ***HD 1 Collecting and Analysing Data*** ***NUM 5 Factors, Multiples, and Primes*** ***SSM 2 Properties of Shapes (2D)***	***Unit title/Theme*** *Sub title(s)* ***SSM 3 Perimeter and Area*** ***ALG 2 Number Patterns and Sequences*** ***NUM 6 Fractions, Decimals, and Percentages***	***Unit title/Theme*** *Sub title(s)* ***SSM 4 Units, Measure, and Estimating*** ***HD 2 Probability*** ***NUM 7 Percentages***	***Unit title/Theme*** *Sub title(s)* ***ALG 3 Coordinate Geometry*** ***SSM 5 Constructions*** ***HD 3 Representing Data*** ***NUM 8 Ratio and Proportion***	***Unit title/Theme*** *Sub title(s)* ***SSM 6 Properties of Shapes (3D)*** ***ALG 4 Real Life Graphs*** ***SSM 7 Transformations***
	Concepts/Tier 3 vocabulary *Rounding to significant figures* *Truncating* *Multiply and divide whole numbers and decimals* *Simple inequalities* *BIDMAS* *Geometric notation* *Angles in triangles and quadrilaterals* *Corresponding angles* *Alternate angles* *Co-interior angles* *Index notation* *Simple index rules* *Solve equations with brackets* *Solve equations with unknowns on both sides* *Rearrange simple formula*	***Concepts/Tier 3 vocabulary*** *Four operations with fractions with different denominators* *Four operations with mixed numbers* *Worded fraction problems* *Mean, mode, median, and range for discrete data* *Frequency tables* *Mean, mode, median, and range from frequency tables* *Prime factor decomposition using index notation* *Find Highest Common Factor and Lowest Common Multiple using prime factors* *Congruent shapes* *Solve problems based on shape properties*	***Concepts/Tier 3 vocabulary*** *Perimeter and area of compound shapes* *Area of parallelograms and trapeziums* *Circumference and area of circles* *Generate sequences from nth terms* *Generate specific terms from nth terms* *Find the nth term of complex arithmetic sequences* *Convert a fraction into a decimal* *Order fractions, decimals, and percentages* *Solve problems comparing fractions and percentages* *Use the inequality symbol*	***Concepts/Tier 3 vocabulary*** *Convert time into decimals (complex)* *Solve problems involving converting units* *Sample space diagrams* *Mutually exclusive and independent events* *Use AND/OR rules for probability* *Probability from Venn diagrams* *Frequency trees* *Increase/Decrease by a given percentage* *Calculate an amount as a percentage of another*	***Concepts/Tier 3 vocabulary*** *Midpoint of a line segment* *Find the gradient from a line or from two coordinates* *Construct regular squares, triangles, hexagons* *Perpendicular bisectors* *Angle bisectors* *Produce scatter graphs* *Comment on correlation* *Plot a line of best fit* *Stem and leaf diagrams* *Divide into a ratio* *Solve problems involving ratios* *Recipe style questions* *Exchange rates for currency*	***Concepts/Tier 3 vocabulary*** *Find missing lengths given volume and a length* *Surface area and volume of prisms* *Complex plans and elevations* *Density, mass, volume* *Draw travel graphs* *Reflect shapes in lines parallel to axis* *Rotate shapes around points* *Describe a rotation around the origin* *Describe enlargements using scale factors* *Enlarge shapes using a centre of enlargement and a positive scale factor* *Find the centre of enlargement as a coordinate*
	Justification: Our spiral curriculum based on the National Curriculum. It is our own scheme of work, not 'off the shelf'. Our spiral curriculum has prior learning, core learning and extension embedded throughout to allow pupils to progress to the best of their ability. We know that in maths, gaps in pupils' knowledge cause serious difficulties in pupils' ability to progress into the next stage of learning. As a result, we purposely sequence our curriculum to revisit previously learnt topics and then build on this. Our spiral curriculum embeds this re-visiting idea every lesson through retrieval practice, questioning for understanding, live marking and observation, effective feedback and assessments. Our spiral					

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Wider reading/Cultural capital

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7I/8F	***Unit title/Theme*** *Sub title(s)* ***NUM 1 Place Value and Numerical Methods*** ***NUM 2 Directed Numbers*** ***SSM 1 Lines and Angles*** ***NUM 3 Powers and Roots***	***Unit title/Theme*** *Sub title(s)* ***ALG 1 Expressions, Equations and Formula*** ***NUM 4 Fractions*** ***HD 1 Collecting & Analysing Data*** ***NUM 5 Factors, Multiples and Primes***	***Unit title/Theme*** *Sub title(s)* ***SSM 2 Properties of Shape (2D)*** ***NUM 6 Fractions, Percentages & Decimals*** ***NUM 7 Percentages*** ***ALG 2 Number Patterns and Sequences*** ***HD 2 Probability***	***Unit title/Theme*** *Sub title(s)* ***SSM 3 Perimeter and Area*** ***SSM 4 Units, Measure and Estimating*** ***ALG 3 Coordinate Geometry***	***Unit title/Theme*** *Sub title(s)* ***ALG 4 Real Life Graphs*** ***HD 3 Representing Data*** ***NUM 8 Ratio and Proportion*** ***SSM 5 Constructions***	***Unit title/Theme*** *Sub title(s)* ***SSM 6 Properties of Shape (3D)*** ***SSM 7 Transformations***
	Concepts/Tier 3 vocabulary Round whole numbers to the nearest 10, 100, 1000 and to 1 significant figure Round to the nearest whole number and 1 or 2 decimal places Multiply & divide decimal numbers by 10, 100 & 1000 Multiply & divide whole numbers & decimals. Order and four operations with negative numbers. Solve problems involving angles at a point, angles on a straight line, vertically opposite angles. Square numbers, square roots (up to 12); Cube numbers, cube roots (up to 10); Use index notation for whole numbers (including squaring and cubing)	***Concepts/Tier 3 vocabulary*** Solve 1 - 3 step equations; Write simple formulas &expressions algebraically. Rearrange simple formula. Substitution of positive and negative integers Expand single brackets. Write a quantity as a fraction of another quantity. Multiply/divide fractions. Add/subtract fractions (different denominators) Find the mode, mean, median and range for any set of discrete data. Compare two distributions using the range and one average. Find LCM and HCF of two or more numbers by listing; Problem solving e.g. train times; Sorting numbers into Venn diagrams (multiples / primes etc.)	***Concepts/Tier 3 vocabulary*** Classify and define special triangles & quadrilaterals based on angle properties, lines of symmetry and order of rotational symmetry. Convert between fractions, decimals, percentages. Calculate percentages of a quantity by finding no calculator. Generate and describe sequences involving negatives or fraction. Use basic iterative formulas to generate simple term to term sequences. Find the nth term of simple sequences. Use the appropriate. Use a probability scale from 0 to 1; Estimate the probability found from experiments; Compare experimental and theoretical probabilities	***Concepts/Tier 3 vocabulary*** Calculate perimeter and area of compound shapes that can be split into rectangles; Use the formula for calculating area of triangle Read a timetable and calculate differences in time; Convert from one metric unit to another; Simple conversion of time to decimals e.g. 0.5hours = 30mins Complete a table of values for equations such as y = 2x + 3 and plot the line; Name and draw lines parallel to the x and y axis	***Concepts/Tier 3 vocabulary*** Use conversion graphs; Draw a travel graph; Interpret simple travel graphs Construct pie charts using a protractor by converting frequency to degrees; Interpret pie charts; Complete and interpret two way tables Use ratios to find fractions; Divide a quantity in a given ratio; Using equivalent ratios to solve problems e.g. strength of squash mixed in different parts; Introduction into exchange rates Compass skills; Construct a triangle given 1 side and 2 angles ASA; Construct a triangle given 2 sides and 1 angle SAS; Construct a triangle given 3 sides SSS	***Concepts/Tier 3 vocabulary*** Recognise and draw nets of complex 3D shapes e.g. cylinders, tetrahedrons; Calculate volume and surface area of cubes and cuboids; Draw plans and elevations of simple 3D solids Reflect a 2D shape in the axis of a graph; Translate shape in terms of a vector; Rotate a 2D shape given any point on the axis; Enlarge 2D shapes by a positive scale factor (including simple fractions)
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St Martin's School
Be the best you can be

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7F	***Unit title/Theme*** *Sub title(s)* ***NUM 1 Place Value and Numerical Methods*** ***NUM 2 Directed Numbers*** ***SSM 1 Lines and Angles*** ***NUM 3 Powers and Roots***	***Unit title/Theme*** *Sub title(s)* ***ALG 1 Expressions, Equations and Formula*** ***NUM 4 Fractions*** ***NUM 5 Factors, Multiples and Primes***	***Unit title/Theme*** *Sub title(s)* ***NUM 6 Fractions, Percentages & Decimals*** ***SSM 2 Properties of Shape (2D)*** ***ALG 2 Number Patterns and Sequences***	***Unit title/Theme*** *Sub title(s)* ***HD 1 Collecting & Analysing Data*** ***NUM 7 Percentages***	***Unit title/Theme*** *Sub title(s)* ***HD 2 Probability*** ***SSM 3 Perimeter and Area*** ***SSM 4 Units, Measure and Estimating*** ***HD 3 Representing Data***	***Unit title/Theme*** *Sub title(s)* ***ALG 3 Coordinate Geometry*** ***NUM 8 Ratio and Proportion*** ***SSM 5 Properties of Shape (3D)*** ***ALG 4 Real Life Graphs*** ***SSM 6 Transformations***
	Concepts/Tier 3 vocabulary Read and write numbers in figures and words; Round to the nearest 10, 100 and 1000; Secure written methods for whole number addition and subtraction; Use understanding of place value to multiply and divide by 10,100 and 1000; Secure written methods for whole number multiplication and division Order positive/negative numbers on a number line; Add/subtract negative integers; Add/subtract negative numbers in context (e.g. Temperature) Recognise and estimate the three types of angle; Measure and construct an angle to the nearest degree; Eight points of a compass Recall the square numbers up to 12 x 12; Practice methods of multiplication to calculate squares and cubes; Efficient use of a calculator to find squares and roots	***Concepts/Tier 3 vocabulary*** Expressions and equations; Simplify expressions; Use simple formulas written in words; Substitute positive numbers into a simple formula Find equivalent fractions; Order fractions with the same denominator; Simplify Fractions; Add and subtract fractions with the same denominator; Change an improper fraction to a mixed number; Change a mixed number to an improper fraction; Find a fraction of a whole Understand definition of multiple, factor and prime Multiples, factors and prime; Find multiples of a number; Find a factor pair of a number; List common multiples; Test to see if a number is prime	***Concepts/Tier 3 vocabulary*** Convert decimals to fractions (cancel down as extension); Understand that a percentage is a fraction out of 100; Write a simple fraction as a percentage and vice versa; Find fractions, percentages, decimals that are the same; Simple comparison of fractions, decimals and percentages Draw, recognise and name special triangles and quadrilaterals; Recognise diagonal lines of symmetry Generate simple integer sequences; Describe in words simple sequences; Write the term to term rule of a sequence involving positive numbers; Generate a simple sequence given a rule; Recognise and continue common number patterns such as multiples, squares, triangle numbers, Fibonacci	***Concepts/Tier 3 vocabulary*** Construct a frequency chart (using a tally); draw and interpret pictograms; draw and interpret line graphs; draw and interpret bar chart from a frequency chart; Find the mode and range of a set of data; Find the mean from a set of data; Find the median from an odd set of data Non-calculator method for finding simple percentages of a quantity (10%, 25%, 50%, 75%); Finding percentages using a Calculator	***Concepts/Tier 3 vocabulary*** Express probability as a fraction; Display possible outcomes in an organised manner Calculate perimeters of polygons given lengths of all sides; Define areas in terms of square units; Understand and apply formulas for calculating perimeter and area of squares and rectangles Accurately read scales in a range of contexts; Choose suitable units of measure; Estimate measures; Convert times between 12 hour and 24 hour Construct and interpret compound/dual bar charts; Interpret simple pie charts; Construct simple pie charts (recall prior knowledge of fractions and percentages)	***Concepts/Tier 3 vocabulary*** Write down the coordinate of a point in all four quadrants; Construct a shape using coordinates; Complete a shape using coordinates write information as a ratio in a variety of contexts; Simplify a given ratio; Match equivalent ratios Draw 2D representations of 3D shapes on Isometric paper; Recognise and draw nets of basic 3D shapes; Find the volume of a solid by counting cubes Plot and read from Conversion Graphs Transformations: Reflect in a mirror line; Rotate a shape about its centre or a vertex; Translate shape in terms of up/down/left/right

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