

KNOWLEDGE AND SKILLS OVERVIEW

	HT1	HT2	HT3	HT4	HT5	HT6	Cultural Capitol	Oracy/Literacy/Reading
Year 7	Algebraic thinking Sequences Algebraic notations <i>Simplifying, Substituting</i>	Place value and proportion Integers and decimals <i>Ordering, Median, Range, Rounding</i> Fraction, decimals and percentage equivalence	Application of Number Problem solving with multiplication and division	Directed Number Four operations Fractional Thinking Addition and subtraction of fractions	Lines and Angles Constructing, measuring, using and reasoning with geometric notation.	Reasoning with Number Number sense <i>Mental maths, Simplifying using common factors</i> Sets and probability Prime numbers and proof	NSPCC Number Day World Pi Day Liverpool Maths Party Day UKMT Challenge competitions Links to real life context throughout teaching, for example in the topic of percentage	Verbal reasoning in lessons. Key vocabulary identified via ticksheets Maths library of numeracy related fictions.
Year 8	Proportional Reasoning Ratio & Scale Multiplicative Change <i>Conversion graphs, currency conversions, Scale factors</i> Multiplying and Dividing Fractions	Representations Working on the Cartesian Plane <i>Plotting straight lines, link to direct proportion and sequences</i> Representing Data <i>Scatter graphs, grouped and ungrouped frequency tables</i> Tables & Probability <i>Two-way tables, Venn diagrams</i>	Algebraic Techniques Brackets, Equations and Inequalities Sequences Indices <i>Laws of indices</i>	Algebraic Techniques Fractions & Percentages Standard index Form Number Sense <i>Estimation, Money, Metric units for weight, length, area and volume</i>	Developing Geometry Angles in Parallel Lines & Polygons Area of Trapezia & Circles	Reasoning with Data Line symmetry & reflection The data handling cycle Measures of Location <i>Averages from tables</i>	NSPCC Number Day World Pi Day – students studying circle at the time Liverpool Maths Party Day UKMT Challenge competitions Links to real life context throughout teaching, for example with ratio, proportion and recipes.	Verbal reasoning in lessons. Key vocabulary identified via ticksheets Maths library of numeracy related fictions.
Year 9	Reasoning with Algebra Straight Line Graphs <i>Comparing gradients, Finding equations of a line, Parallel and Perpendicular lines</i> Forming & Solving Equations Testing Conjectures <i>Deciding True or False, Show That problems, Expanding binomials and polynomials</i>	Constructing in 2D & 3D Shapes 3D Shapes <i>Surface area and volume of 3D shapes</i> Constructions & Congruency	Reasoning with Number Numbers <i>Problem solving fractions and integers, Standard Form</i> Using Percentages Maths & Money <i>Compound and Simple interest, VAT, exchange rates</i>	Reasoning with Geometry Deduction <i>Solving angles problems and conjectures</i> Rotation & Translation Pythagoras' Theorem	Reasoning with Proportion Enlargement & Similarity Solving ratio & proportion Problems <i>Interpreting conversion graphs, Best Buy problems, Ratio and algebra problems</i> Rates <i>Speed, distance & time formulae and graphs</i>	Representations Probability <i>Calculating probability events, Probability Tree Diagrams</i> Algebraic Representation <i>Quadratic and reciprocal graphs, Graphing simultaneous equations, representing inequalities</i>	Visit from bank – Barclays Talk from Maths inspiration (probability) Liverpool Maths Party Day UKMT Challenge competitions Links to real life context throughout teaching, for example statistics and interpreting data.	Verbal reasoning in lessons. Key vocabulary identified via ticksheets Maths library of numeracy related fictions. Open evening helpers; lead maths activities.
Year 10	Module 1: <i>Indices, Algebra, Equations and formula, Solving quadratics by factorising, Linear simultaneous equations, Sequences, Ratio.</i>	Module 2: <i>Perimeter, circumference and area, volume, polygons, circle theorems, Pythagoras theorem and trigonometry.</i>	Module 3: <i>Sequences, properties of polygons and angles in polygons.</i>	Module 4: <i>Decimals, Factors, Multiples, Accuracy, Bounds, Percentages, Surds, Standard form, Growth and decay.</i>	Module 4 Continued: <i>Decimals, Factors, Multiples, Accuracy, Bounds, Percentages, Surds, Standard form, Growth and decay.</i>	Module 5: <i>Sampling and capture-recapture, Scatter graphs, Systematic Listing, Probability, Tree diagrams, Venn diagrams.</i>	Maths Feast days Liverpool Maths Party Day UKMT Challenge competitions Bletchley Park visit Links to real life context throughout teaching, for example in the topic of number with bounds.	Verbal reasoning in lessons. Key vocabulary identified via ticksheets UKMT Challenge competitions Maths KS4/5 library

KNOWLEDGE AND SKILLS OVERVIEW

Year 11	Module 6: <i>Shape transformations, Congruence and similarity, Length/area/vol scale factors, bearings and scale drawings, circumference, area and volume, Loci, Non-right-angled trigonometry</i>	Module 7: <i>Coordinates & linear graphs, further quadratics, simultaneous equations, functions, iteration, proportion, real life graphs, algebraic fractions, inequality regions, graphs and graph transformations.</i>	Module 7 Continued: <i>Coordinates & linear graphs, further quadratics, simultaneous equations, functions, iteration, proportion, real life graphs, algebraic fractions, inequality regions, graphs and graph transformations.</i>	Module 8: <i>Compound measures, vectors, proof, circle theorem proofs, area under a graph and gradient of a curve, equation of circles and tangents.</i>	Summer examination preparation	GCSE Examination support	UKMT Challenge competitions Liverpool University Lectures Bletchley Park visit Links to real life context throughout teaching, for example in the topic of graphs making links with Science and Geography.	Verbal reasoning in lessons. Key vocabulary identified via tick sheets Maths KS4/5 library
Year 12	Pure Algebra 1	Pure Trigonometry	Pure Calculus	Pure Algebra 2	Statistics and Mechanics 1	Statistics and Mechanics 1	UKMT Senior Challenge competitions Liverpool University Lectures Link within and between topics made such as from GCSE and beyond to degree level.	Verbal reasoning in lessons. Maths KS4/5 library
Year 13	Pure Algebra 3	Pure Further Trigonometry	Pure Differentiation	Pure Integration	Statistics and Mechanics 2	Statistics and Mechanics 2	UKMT Senior Challenge competitions Liverpool University Lectures Link within and between topics made such as from AS Level and beyond to degree level.	Verbal reasoning in lessons. Maths KS4/5 library
Core Maths	Fermi Estimation & Modelling <i>Using assumptions and constraints to limit a broad problem and model a potential solution.</i> Analysis of Data <i>Sampling, stem & leaf, measures of average & spread, box plots, cumulative frequency and Histograms</i>	Personal Finance: <i>Tax, NI, student loans, APR, AER, VAT, exchange rates and Inflation</i>	Critical Analysis <i>How data can be misleading, how to interpret & check statements are supported by data</i>	Correlation & Regression <i>Using data to show trends in data and comparing data sets.</i> Normal Distribution <i>Modelling data using the normal distribution, standardising the normal distribution and finding probabilities</i>	Confidence Intervals <i>Use of the sample mean and confidence intervals to analyse claims made about data sets</i>	Exams	Cross curricular links Real life links throughout course Link to AMSP	Verbal reasoning in lessons. Key vocabulary identified via in course notes Maths KS4/5 library

