

YEAR 7 MATHS CURRICULUM OVERVIEW

Y7 Maths Half Term 1

Topic	Lessons	Key knowledge and skills	Resources	Progression and links	SEND/ More able	Assessment & recording; factual recall checks
1.Equipment	6	Use of mathematical equipment Use of a calculator Square and cube numbers and square roots	01. Equipment Use	Looking Backwards Year 6 Compare, order and recognize numbers to 10 million Round to the nearest 10, 100, 1000 Four operations with whole numbers Recognise squares, cubes, primes	Challenge <ul style="list-style-type: none"> Extension tasks embedded in class slides UKMT junior maths challenge questions Open Middle / Don Steward / Nrich tasks Working backwards Choice of homework tasks 	Formative <ul style="list-style-type: none"> Numeracy Ninjas Retrieval activities Mini whiteboards Self/Peer Assessment Think Pair Share Problem solving tasks Eedi homework tasks Exit tickets Low stakes mid-unit assessments Summative GL assessments
2.Number Properties	10	Square, triangle and cube numbers, including their sequences. Square and cube roots up to 15 squared Index notation for positive integer powers Index laws for multiplying and dividing with the same base and raising to the power of zero Highest Common Factor (method: from a list only). Prime factor decomposition Divisibility rules	02. Number Properties	Looking Forwards Year 8 – Maths with money Year 9 – Laws of Indices, Divisibility tests, Prime Factor Products, Estimation and Bounds Literacy Key terms: Odd, even, consecutive, integer, fraction, decimal, commutative, distributive, significant, square, cube, root, surd	Scaffold <ul style="list-style-type: none"> Numeracy Ninja Fluency homework via Eedi Coloured print resources Place value grids / Times table grids Pictorial representations used routinely Calculator skills practice 	
3.Place Value 1	9	Place value linking to: Measure (e.g. converting units) Standard form (writing big numbers and understanding them in context) Comparing and ordering integers, decimals and standard form	03. Place Value 1	Careers AMSP Careers lesson 1: Being a data scientist (version A) Pillar topics <ul style="list-style-type: none"> Numeracy 1/2 Using a calculator 1/2 Using a scientific calculator (1-4) 		

Y7 Maths Half Term 2

Topic	Lessons	Key knowledge and skills	Resources	Progression and links	SEND/ More able	Assessment & recording; factual recall checks
4.Place Value 2	8	<p>Understanding the concept of significant figures</p> <p>Rounding numbers to significant figures including standard form</p> <p>Estimating calculations to sensible degree of accuracy.</p> <p>Consider whether an answer is an over or underestimate</p>		<p>Looking Backwards</p> <p>Year 6</p> <p>Compare, order and recognize numbers, four operations with whole numbers</p> <p>Draw 2D shapes using given dimensions and angles</p> <p>Recognise, describe and build simple 3D shapes, including making nets,</p> <p>Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons</p> <p>Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius</p>	<p>Challenge</p> <ul style="list-style-type: none"> Extension tasks embedded in class slides UKMT junior maths challenge questions Open Middle / Don Steward / Nrich tasks Working backwards Choice of homework tasks 	<p>Formative</p> <ul style="list-style-type: none"> Numeracy Ninjas Retrieval activities Mini whiteboards Self/Peer Assessment Think Pair Share Problem solving tasks Eedi homework tasks Exit tickets Low stakes mid-unit assessments <p>Summative</p> <p>Trial Exam 1 – content learnt during the first half term</p>
5.Conventions and Properties of Shapes	8	<p>Conventions, properties and vocabulary of 2D and 3D Shapes</p> <p>Reflection and Rotational symmetry</p> <p>Construction</p>		<p>Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.</p> <p>Looking Forwards</p> <p>Year 8</p> <p>Maths with money</p> <p>Year 9</p> <p>Laws of Indices, Divisibility tests, Prime Factor Products, Estimation and Bounds, construction</p> <p>Literacy</p> <p>Key terms: Odd, even, consecutive, integer, fraction, decimal, commutative, distributive, significant, square, cube, root, surd</p> <p>Careers</p> <p>Tiling Patterns – links to Architecture and Design</p> <p>Pillar topics</p> <ul style="list-style-type: none"> Numeracy 1/2 Using a calculator 1/2 	<p>Scaffold</p> <ul style="list-style-type: none"> Numeracy Ninja Targeted fluency homework via Eedi Coloured print resources Place value grids / Times table grids Pictorial representations used routinely Calculator skills practice 	

Y7 Maths Half Term 3

Topic	Lessons	Key knowledge and skills	Resources	Progression and links	SEND/ More able	Assessment & recording; factual recall checks
5. Conventions and Properties of Shapes continued		Conventions, properties and vocabulary of 2D and 3D Shapes Reflection and Rotational symmetry Construction		Looking Backwards Year 6 Simple expressions, substitution, Four operations with fractions, converting mixed numbers and improper fractions Looking Forwards Year 8 Algebraic manipulation, solving equations, substitution, sequences, Probability, Solving Equations Year 9 Linear graphs, inequalities, rearranging formulae, transformations, algebraic fractions Literacy Key terms: term, expression, generalise, negative, zero pair, operation, improper, mixed number, divisor, dividend Careers AMSP Careers Lesson 2: Urban Regeneration (version A) Pillar topics • Using a calculator 2/3/4	Challenge • Extension tasks embedded in class slides • UKMT junior maths challenge questions • Open Middle / Don Steward / Nrich tasks • Working backwards • Choice of homework tasks Scaffold • Numeracy Ninja • Targeted fluency homework via Eedi • Coloured print resources • Place value grids / Times table grids • Pictorial representations used routinely • Calculator skills practice	Formative • Numeracy Ninjas • Retrieval activities • Mini whiteboards • Self/Peer Assessment • Think Pair Share • Problem solving tasks • Eedi homework tasks • Exit tickets • Low stakes mid-unit assessments Summative End of topic assessments as appropriate
6. Addition and Subtraction	6	Add and subtract with negative numbers Sequences Problem solving with negative numbers Generalising algebraically				
7. Multiplication and Division	12	Multiplicative reasoning Standard form Order of operations Multiples and LCM				

Y7 Maths Half Term 4

Topic	No of lessons	Key knowledge and skills	Resources	Progression and links	SEND/ More able	Assessment & recording; factual recall checks
7.Multiplication and Division continued...		Multiplicative reasoning Standard form Order of operations Multiples and LCM		Looking Backwards Year 6 Simple expressions, substitution, Four operations with fractions, converting mixed numbers and improper fractions	Challenge <ul style="list-style-type: none"> Extension tasks embedded in class slides Exploring algebraic representations UKMT junior maths challenge questions Open Middle / Don Steward / Nrich tasks Working backwards Choice of homework tasks 	Formative <ul style="list-style-type: none"> Numeracy Ninjas Retrieval activities Mini whiteboards Self/Peer Assessment Think Pair Share Problem solving tasks Eedi homework tasks Exit tickets Low stakes mid-unit assessments
8.Generalising number	12	Key algebraic vocabulary Functions machines Collecting like terms Distributive law Expanding and simplifying expressions		Looking Forwards Year 8 Algebraic manipulation, solving equations, substitution, sequences, Solving Equations Year 9 Standard Form, Laws of Indices, Literacy Percentage, Fraction, Decimal, Multiplier, Increase, Decrease, Convert, Simplify, Equivalent, Divide, Share, Operation, Function, Expression, Factorise, Expand Careers Packaging Design (links to graphic design and manufacturing) Pillar topics: Maths: Using a scientific calculator (1-4) Calculating with percentages (1-5) Ratio (1-4)	Scaffold <ul style="list-style-type: none"> Numeracy Ninja Targeted fluency homework via Eedi Coloured print resources Place value grids / Times table grids Printed protractor overlays Pictorial representations used routinely Example-problem pairs Visualiser modelling Calculator skills practice 	Summative End of topic assessments as appropriate

Y7 Maths Half Term 5

Topic	No of lessons	Key knowledge and skills	Resources	Progression and links	SEND/ More able	Assessment & recording; factual recall checks
8.Generalising number continued		Key algebraic vocabulary Function machines Collecting like terms Distributive law Expanding and simplifying expressions		Looking Backwards Year 6 Simple expressions, substitution, simple formulae, Finding Rules Looking Forwards Year 8 Algebraic manipulation, solving equations, substitution, sequences, Solving Equations Year 9 Solving Inequalities, Linear Graphs, Rearranging Formulae Literacy Coefficient, Term, Solution, Fraction, Equation, Expression, Formula, Rearrange, Subject, Sequence, nth term	Challenge <ul style="list-style-type: none"> Extension tasks embedded in class slides Exploring algebraic representations UKMT junior maths challenge questions Open Middle / Don Steward / Nrich tasks Working backwards Choice of homework tasks Scaffold <ul style="list-style-type: none"> Numeracy Ninja Targeted fluency homework Coloured print resources Place value grids / Times table grids Printed protractor overlays Pictorial representations used routinely Example-problem pairs Visualiser modelling Calculator skills practice 	Formative <ul style="list-style-type: none"> Numeracy Ninjas Retrieval activities Mini whiteboards Self/Peer Assessment Think Pair Share Problem solving tasks Eedi homework tasks Exit tickets Low stakes mid-unit assessments Summative <p>Trial exams in May – Content learnt this year</p>
9.Linear Sequences	6	Vocabulary of sequences Term to term rule Generating from nth term Finding the nth term Ratio tables				
10.Basic Solving Equations	10	Writing equations Solving simple equations Pictorial representations		Careers AMSP: Going freelance: percentages, ratio and budgeting Pillar topics: Retrieval of Pillar topics from Autumn and Spring terms		

Y7 Maths Half Term 6

Topic	No of lessons	Key knowledge and skills	Resources	Progression and links	SEND/ More able	Assessment & recording; factual recall checks
10. Basic Solving Equations continued		<p>Writing equations</p> <p>Solving simple equations</p> <p>Pictorial representations</p>		<p>Looking Backwards</p> <p>Year 6</p> <p>simple expressions, substitution</p> <p>Looking Forwards</p> <p>Year 8</p> <p>Algebraic manipulation, solving equations, substitution, sequences, probability, maths and money</p> <p>Year 9:</p> <p>Linear graphs, inequalities, rearranging formulae, rounding and estimation, fractions</p> <p>Literacy</p> <p>Term, expression, numerator, denominator, rational, irrational, recurring, vinculum</p> <p>Careers</p> <p>Enrichment project – Running a Bakery</p> <p>Pillar topics:</p> <p>Revision of pillar topics from Terms 1-5</p>	<p>Challenge</p> <ul style="list-style-type: none"> Extension tasks embedded in class slides Exploring algebraic representations UKMT junior maths challenge questions Open Middle / Don Steward / Nrich tasks Working backwards Choice of homework tasks <p>Scaffold</p> <ul style="list-style-type: none"> Numeracy Ninja Targeted fluency homework via Eedi Coloured print resources Place value grids / Times table grids Printed protractor overlays Pictorial representations used routinely Example-problem pairs Visualiser modelling Calculator skills practice 	<p>Formative</p> <ul style="list-style-type: none"> Numeracy Ninjas Retrieval activities Mini whiteboards Self/Peer Assessment Think Pair Share Problem solving tasks Eedi homework tasks Exit tickets Low stakes mid-unit assessments <p>Summative</p> <p>End of topic assessments as appropriate</p> <p>CTG tasks to be assigned ready for year 8</p>
11. Ordering and Equivalence	4	<p>Fractions, decimals and percentages equivalence</p> <p>Terminating and non-terminating fractions</p> <p>Rounding errors</p>				

YEAR 8 MATHS CURRICULUM OVERVIEW

Y8 Maths Half Term 1

Topic	No of lessons	Key knowledge and skills	Resources	Progression and links	SEND/ More able	Assessment & recording; factual recall checks
Algebraic Notation	4	Working confidently with algebraic notation Forming expressions	Teams/CMAT/Year8/Algebraic Notation	Looking Backwards Year 6 Simple expressions, substitution, simple formulae Year 7 - Algebraic notation, forming simplex expressions, collecting simple terms together Looking Forwards Year 9: Solving equations and inequalities, straight line graphs, rearranging formulae Year 10: Quadratics, substitution, simultaneous equations Literacy: Expression, coefficient, variable, expand, simplify, term, collect, like terms, power, constant, factorise, highest common factor, substitute Careers AMSP: Critical Analysis Pillar topics: Revision of previously covered pillar topics	Challenge <ul style="list-style-type: none"> Extension tasks embedded in class slides Exploring algebraic representations UKMT junior maths challenge questions Open Middle / Don Steward / Nrich tasks Working backwards Choice of homework tasks Scaffold <ul style="list-style-type: none"> Numeracy Ninja Targeted fluency homework Coloured print resources Place value grids / Times table grids Pictorial representations used routinely Example-problem pairs Visualiser modelling Calculator skills practice 	Formative <ul style="list-style-type: none"> Numeracy Ninjas Retrieval activities Mini whiteboards Self/Peer Assessment Think Pair Share Problem solving tasks Tassomai homework tasks Exit tickets Low stakes mid-unit assessments Summative <p>No formal data capture End of topic assessments as appropriate</p>
Collecting Like Terms	4	Add, Subtract, Multiply and divide like and unlike terms	Teams/CMAT/Year7/Collecting Like Terms			
Expanding Brackets	4	Expanding a single bracket Expand a bracket and collect terms Expand a bracket with powers of a variable	Teams/CMAT/Year 8/Expanding			
Factorising	4	Factorise an expression into a single bracket with: Numerical factors Algebraic factors Numerical and Algebraic factors	Teams/CMAT/Year 8/Factorising			
Substitution	3	Substitute into a simple expression Substitute with negative numbers Substitute with powers	Teams/CMAT/Year 8/Substitution			

Y8 Maths Half Term 2

Topic	No of lessons	Key knowledge and skills	Resources	Progression and links	SEND/ More able	Assessment & recording; factual recall checks
Angles: Parallel lines and polygons	6	Interior and Exterior Angles in a Polygon Problems Solving with Angles in Polygons Angles in Parallel Lines Problem Solving with Angles in Parallel Lines	Teams/CMAT/ Year 8 /Angles	Looking Backwards Year 6 Area and perimeter of 2D shapes, Basic Angle Facts, Interior Angle Sum in a Polygon Year 7 - Drawing polygons, Solving Angle Problems	Challenge <ul style="list-style-type: none"> Extension tasks embedded in class slides Exploring algebraic representations UKMT junior maths challenge questions Open Middle / Don Steward / Nrich tasks Working backwards Choice of homework tasks 	Formative <ul style="list-style-type: none"> Numeracy Ninjas Retrieval activities Mini whiteboards Self/Peer Assessment Think Pair Share Problem solving tasks Eedi homework tasks Exit tickets Low stakes mid-unit assessments
Area	5	Area of a Rectangle – Problem Solving Area of Compound Rectilinear Shapes Tiling Problems Area of a Parallelogram, Triangle and Trapezium Area of Compound Shapes Area Problems	Teams/CMAT/ Year 8 /Area	Looking Forwards Year 9: Problem solving with parallel lines and polygons, bearings Year 10 – Similarity, Congruency, Pythagoras and Trigonometry Literacy Polygon, Interior, Exterior, Quadrilateral, Pentagon, Hexagon, Heptagon, Octagon, Cointerior, Alternate, Corresponding, Vertically Opposite, Transversal, Parallel, Parallelogram, Trapezium, Prism	Scaffold <ul style="list-style-type: none"> Numeracy Ninja Targeted fluency homework Coloured print resources Place value grids / Times table grids Pictorial representations used routinely Example-problem pairs Visualiser modelling Calculator skills practice 	
Surface Area	4	Surface Area of Cubes and Cuboids Surface Area of a Prism Surface Area of Compound Rectilinear Prisms Problem Solving	Teams/CMAT/ Year 8/Area	Careers Artistic triangles: making conjectures Pillar topics: Revision of previously covered pillar topics		Summative Trial Exams – Algebra Assessment

Y8 Maths Half Term 3

Topic	No of lessons	Key knowledge and skills	Resources	Progression and links	SEND/ More able	Assessment & recording; factual recall checks
Circles	5	Parts of a Circle Pi Circumference and Area Simple sectors Problem Solving	Teams/CMAT/ Year 8 /Circles	Looking Backwards Year 6 Using simple formulae, Volume of a cuboid, Area and perimeter of 2D shapes	Challenge <ul style="list-style-type: none"> Extension tasks embedded in class slides Exploring algebraic representations UKMT junior maths challenge questions Open Middle / Don Steward / Nrich tasks Working backwards Choice of homework tasks 	Formative <ul style="list-style-type: none"> Numeracy Ninjas Retrieval activities Mini whiteboards Self/Peer Assessment Think Pair Share Problem solving tasks Eedi homework tasks Exit tickets Low stakes mid-unit assessments
Volume	3	Volume of a cuboid Volume of a cylinder Volume of a general prism	Teams/CMAT/ Year 8 /Volume of a Prism	Year 7 - Pre-algebra, Algebraic Notation, Collecting Like Terms, irrational numbers, circle properties Looking Forwards Year 9: Solving Inequalities, Linear Graphs, Rearranging Formulae, Constructions Year 10 – Quadratics, Substitution, Simultaneous Equations, Exact values	Scaffold <ul style="list-style-type: none"> Numeracy Ninja Targeted fluency homework Coloured print resources Place value grids / Times table grids Pictorial representations used routinely Example-problem pairs Visualiser modelling Calculator skills practice 	
Solving Equations	3	Writing equations Solving simple equations Pictorial representations	Teams/CMAT/ Year 8/Solving Linear Equations	Literacy Coefficient, Term, Solution, Fraction, Equation, Expression, arc, tangent, radius, diameter, sector, segment, chord, volume, cuboid, cylinder, prism, cross-section Careers How do you keep your house warm? Pillar topics: Revision of previously covered pillar topics		Summative No formal data capture End of topic assessments as appropriate

Y8 Maths Half Term 4

Topic	No of lessons	Key knowledge and skills	Resources	Progression and links	SEND/ More able	Assessment & recording; factual recall checks
Solving Equations	7	Solving Equations including fractional, negative and decimal coefficients of x and double sided equations Forming equations	Teams/CMAT/ Year 8 /Solving linear equations	Looking Backwards Year 6 Using simple formulae Year 7 - Pre-algebra, Algebraic Notation, Collecting Like Terms, Fractions, Negative Number Looking Forwards Year 9: Solving Inequalities, Linear Graphs, Rearranging Formulae Year 10 – Quadratics, Substitution, Simultaneous Equations Literacy Coefficient, Term, Solution, Fraction, Equation, Expression, Formula, Rearrange, Subject, Sequence, nth term Careers Real life problem solving challenge Pillar topics: Revision of previously covered pillar topics	Challenge <ul style="list-style-type: none"> Extension tasks embedded in class slides Exploring algebraic representations UKMT junior maths challenge questions Open Middle / Don Steward / Nrich tasks Working backwards Choice of homework tasks Scaffold <ul style="list-style-type: none"> Numeracy Ninja Targeted fluency homework Coloured print resources Place value grids / Times table grids Pictorial representations used routinely Example-problem pairs Visualiser modelling Calculator skills practice 	Formative <ul style="list-style-type: none"> Numeracy Ninjas Retrieval activities Mini whiteboards Self/Peer Assessment Think Pair Share Problem solving tasks Eedi homework tasks Exit tickets Low stakes mid-unit assessments Summative <p>No formal data capture End of topic assessments as appropriate</p>
Rearranging Formulae	3	With numbers only With simple algebra With more complicated operations	Teams/CMAT/ Year 8 /Rearranging formulae			
Linear Sequences	4	Recognising Sequences Term to Term Rules Generate a sequence Find the next term Connect to a graph Find the nth term rule Find the nth term rule for a picture sequence	Teams/CMAT/ Year 8/Sequences			

Y8 Maths Half Term 5

Topic	No of lessons	Key knowledge and skills	Resources	Progression and links	SEND/ More able	Assessment & recording; factual recall checks
Linear Sequences	4	Recognising sequences Generating sequences Nth term rule with numbers and pictures	Teams/CMAT/ Year 8 /Sequences	Looking Backwards Year 6 Averages (for some), Finding Rules Year 7 - Introduction to Statistics project	Challenge <ul style="list-style-type: none"> Extension tasks embedded in class slides Exploring algebraic representations UKMT junior maths challenge questions Open Middle / Don Steward / Nrich tasks Working backwards Choice of homework tasks 	Formative <ul style="list-style-type: none"> Numeracy Ninjas Retrieval activities Mini whiteboards Self/Peer Assessment Think Pair Share Problem solving tasks Eedi homework tasks Exit tickets Low stakes mid-unit assessments
Probability	8	Probability Scale Notation Sample space, listing outcomes Relative frequency Two way tables Combined events Tree Diagrams	Teams/CMAT/ Year 8 /Probability	Looking Forwards Year 9: Collecting and Representing Data, Correlation Year 10 – Listing strategies, probability and sets		
Data	5	Types of Data Averages from discrete data, frequency tables and grouped data Problem solving	Teams/CMAT/ Year 8/Data	Literacy Square, Triangle, Prime, Linear, Arithmetic, Term, Position, Relative Frequency, Language of Probability, Language of Data Careers Calculating your carbon footprint Pillar topics: Handling Data 1/2	Scaffold <ul style="list-style-type: none"> Numeracy Ninja Targeted fluency homework Coloured print resources Place value grids / Times table grids Pictorial representations used routinely Example-problem pairs Visualiser modelling Calculator skills practice 	Summative End of year assessment on all content studied so far

Y8 Maths Half Term 6

Topic	No of lessons	Key knowledge and skills	Resources	Progression and links	SEND/ More able	Assessment & recording; factual recall checks
Maths and Money	6	Problem Solving Project: Representing Data Converting Units (Time and Money) Money Problems Value for Money Currency Conversions	Teams/CMAT/ Year 8 /WRM Holiday Planning Project	Looking Backwards Year 7 - Introduction to Statistics project, Time, Drawing Angles, Decimals, Constructing shapes Looking Forwards Year 9: Collecting and Representing Data, Constructions, Compound Units, Proportion Year 10 – Box Plots, Cumulative Frequency, Histograms	Challenge <ul style="list-style-type: none"> Extension tasks embedded in class slides Exploring algebraic representations UKMT junior maths challenge questions Open Middle / Don Steward / Nrich tasks Working backwards Choice of homework tasks 	Formative <ul style="list-style-type: none"> Numeracy Ninjas Retrieval activities Mini whiteboards Self/Peer Assessment Think Pair Share Problem solving tasks Eedi homework tasks Exit tickets Low stakes mid-unit assessments Summative <p>End of topic assessments as appropriate and CTG tasks from assessments in half term 5</p>
Close the Gap Work	6	Any topics identified from previous assessment tasks and revision for end of year assessment	Teams/CMAT/ Year 8 /Probability			
Constructions and Loci	7	Bisecting a line and an angle Constructing triangles Constructing angles Basic loci Constructing possible regions	Teams/CMAT/ Year 9/Loci and Construction	Literacy Currency, Conversion, Time Series Graph, Bisect, Construct, Loci, Perpendicular Careers Taking a risk: the real cost of piracy Pillar topics: Handling Data 1/2, Problem Solving	Scaffold <ul style="list-style-type: none"> Numeracy Ninja Targeted fluency homework Coloured print resources Place value grids / Times table grids Pictorial representations used routinely Example-problem pairs Visualiser modelling Calculator skills practice 	

YEAR 9 MATHS CURRICULUM OVERVIEW

Y9 Maths Half Term 1

Topic	No of lessons	Key knowledge and skills	Resources	Progression and links	SEND/ More able	Assessment & recording; factual recall checks
Powers and Roots	5	Integer Powers and Roots Laws of Indices Problem Solving	Teams/CMAT/ Year 9/ Ratio and Proportion	Looking Backwards Year 7/8: Place value, integer powers, fractions, decimals Looking Forwards Year 10: Harder indices, algebraic fractions, Pythagoras, Iteration, Surds	Challenge <ul style="list-style-type: none"> Extension tasks embedded in class slides Exploring algebraic representations and problems UKMT intermediate maths challenge questions Open Middle / Don Steward / Nrich tasks Working backwards 	Formative <ul style="list-style-type: none"> Numeracy Ninjas Retrieval activities Mini whiteboards Self/Peer Assessment Think Pair Share Problem solving tasks Dr Frost homework tasks Exit tickets Low stakes mid-unit assessments
Standard Form	5	Positive Powers of Standard Form Negative Powers of Standard Form Calculating with and without a calculator in Standard Form Problem Solving	Teams/CMAT/ Year 9/Rounding and Accuracy	Literacy Integer, Power, Root, Base, Index, Cube, Square, Standard Form, Factor, Multiple, Prime factor, product, equivalent, improper, mixed number	Scaffold <ul style="list-style-type: none"> Numeracy Ninja / Core skills retrieval Targeted fluency homework Coloured print resources Place value grids / Times table grids Pictorial representations used routinely Example-problem pairs Visualiser modelling Calculator skills practice 	
Factors, Multiple and Primes	7	Multiples including LCM Factors including HCF Divisibility Tests Problem Solving Prime Factor Products	Teams/CMAT/ Year 9/Factors, Multiples and Primes	Careers AMSP: Being a data scientist		Summative End of topic assessments as appropriate
Fractions	9	Equivalent fractions Converting between mixed numbers and improper fractions Ordering fractions and decimals Add, subtract, multiply and divide fractions and mixed numbers	Teams/CMAT/ Year 9/Fraction s			

Y9 Maths Half Term 2

Topic	No of lessons	Key knowledge and skills	Resources	Progression and links	SEND/ More able	Assessment & recording; factual recall checks
Data	13	Types of Data Sampling Tables Averages Bar Charts Pie Charts Frequency Tables Time Series Analysis Frequency polygons	Teams/CMAT/ Year 9/ Collecting and representing data	Looking Backwards Year 7/8: Statistics Projects, Basic Angle Facts, Properties of 2D shape Looking Forwards Year 10: Similarity, Averages, Histograms, Cumulative Frequency, GCSE Statistics	Challenge <ul style="list-style-type: none"> Extension tasks embedded in class slides Exploring algebraic representations and problems UKMT intermediate maths challenge questions Open Middle / Don Steward / Nrich tasks Working backwards Scaffold <ul style="list-style-type: none"> Numeracy Ninja / Core skills retrieval Targeted fluency homework Coloured print resources Place value grids / Times table grids Pictorial representations used routinely Example-problem pairs Visualiser modelling Calculator skills practice 	Formative <ul style="list-style-type: none"> Numeracy Ninjas Retrieval activities Mini whiteboards Self/Peer Assessment Think Pair Share Problem solving tasks Dr Frost homework tasks Exit tickets Low stakes mid-unit assessments Summative <p>End of topic assessments as appropriate</p>
Angles	4	Angles in Parallel Lines Angles in Polygons Problem solving with angles	Teams/CMAT/ Year 9/Angles	Literacy Population, sample, discrete, continuous, census, mean, median, mode, time series, polygon, frequency, alternate, cointerior, corresponding, transversal, interior, exterior, bearing, back bearing, plan view, elevation, naming 2D and 3D shapes		
Bearings	5	Drawing, Measuring and Calculating Bearings Scale Drawings Bearings with other angle facts	Teams/CMAT/ Year 9/Bearings			
Plans and Elevations	3	Properties of 3D shapes Drawing nets Plans and Elevations	Teams/CMAT/ Year 9/Plans and Elevations	Careers Working internationally		

Y9 Maths Half Term 3

Topic	No of lessons	Key knowledge and skills	Resources	Progression and links	SEND/ More able	Assessment & recording; factual recall checks
Constructions and Loci	9	Perpendicular bisectors Angle bisectors Constructing 2D shapes Constructing a given angle Basic Loci Loci and regions Exam style questions	Teams/CMAT/ Year 9/ Loci and Constructions	Looking Backwards Year 7/8: Statistics Projects, Basic Angle Facts, Coordinates, Properties of 2D shape, Substitution, algebraic notation, solving equations Looking Forwards Year 10: Coordinate geometry problems, GCSE Statistics Literacy Population, sample, discrete, continuous, census, mean, median, mode, time series, polygon, frequency, alternate, cointerior, corresponding, transversal, interior, exterior, bearing, back bearing, plan view, elevation, naming 2D and 3D shapes Careers AMSP: Urban regeneration	Challenge <ul style="list-style-type: none"> Extension tasks embedded in class slides Exploring algebraic representations and problems UKMT intermediate maths challenge questions Open Middle / Don Steward / Nrich tasks Working backwards Scaffold <ul style="list-style-type: none"> Numeracy Ninja / Core skills retrieval Targeted fluency homework Coloured print resources Place value grids / Times table grids Pictorial representations used routinely Example-problem pairs Visualiser modelling Calculator skills practice 	Formative <ul style="list-style-type: none"> Numeracy Ninjas Retrieval activities Mini whiteboards Self/Peer Assessment Think Pair Share Problem solving tasks Dr Frost homework tasks Exit tickets Low stakes mid-unit assessments Summative Trial Exams 1 End of topic assessments as appropriate
Scatter Graphs	6	Drawing and Interpreting Scatter Graph Lines of Best Fit Identifying outliers Predicting, Interpolating and Extrapolating	Teams/CMAT/ Year 9/Scatter Graphs			
Linear Graphs	12	Plotting coordinates Calculating midpoints Horizontal and vertical graphs Plotting a straight line graph from a table of values Calculating gradient Calculating y-intercepts Identifying features from a sketch Sketching from features Identifying parallel lines	Teams/CMAT/ Year 9/Foundat ion/Straight line graphs Or Teams/CMAT/ Year 9/Higher/ Straight line graphs			

Y9 Maths Half Term 4

Topic	No of lessons	Key knowledge and skills	Resources	Progression and links	SEND/ More able	Assessment & recording; factual recall checks
Transformations	8	Translations Rotations Reflections (including invariant points) Enlargements Enlargements with fractional and negative scale factors (H only) Combining transformations	Teams/CMAT/ Year 9/ Transformations Higher or Foundation	Looking Backwards Year 7/8: Coordinates, Angles, Pre-algebra, Collecting like terms, Solving Equations, Expanding brackets, Substitution Looking Forwards Year 10: Straight line graphs, Sets	Challenge <ul style="list-style-type: none"> Extension tasks embedded in class slides Exploring algebraic representations and problems UKMT intermediate maths challenge questions Open Middle / Don Steward / Nrich tasks Working backwards Scaffold <ul style="list-style-type: none"> Numeracy Ninja / Core skills retrieval Targeted fluency homework Coloured print resources Place value grids / Times table grids Pictorial representations used routinely Example-problem pairs Visualiser modelling Calculator skills practice 	Formative <ul style="list-style-type: none"> Numeracy Ninjas Retrieval activities Mini whiteboards Self/Peer Assessment Think Pair Share Problem solving tasks Dr Frost homework tasks Exit tickets Low stakes mid-unit assessments Summative <p>End of topic assessments as appropriate</p>
Solving Equations and Inequalities	10	Solving linear equations, including brackets Solving equations with the unknown on both sides Solving linear algebraic fractions (H only) Forming and solving equations Representing single and double linear inequalities Solving simple linear inequalities Solving harder linear inequalities (H only) Forming inequalities (H only) Representing linear inequalities graphically (H only)	Teams/CMAT/ Year 9/Solving Equations and Inequalities Higher or Foundation	Literacy Translation, rotation, reflection, enlargement, scale factor, fractional, equation, variable, expand, solve, inequality, linear, graphically, formula, rearrange Careers Working in tourism		
Rearranging Formulae	4	Rearranging formulae in one or two steps Rearranging formulae with multiple unknowns (H only)	Teams/CMAT/ Year 9/Foundation/Rearranging Formulae (H or F)			

Y9 Maths Half Term 5

Topic	No of lessons	Key knowledge and skills	Resources	Progression and links	SEND/ More able	Assessment & recording; factual recall checks
Ratio and Proportion	12	Equivalent Ratios Simplifying Ratio Unit Ratio Combining Ratios Sharing in a Ratio (total, part, difference) Reverse Ratio (H only) Algebraic Ratio (H only) Direct Proportion Inverse Proportion Proportion in Real Life Scenarios	Teams/CMAT/ Year 9/ Ratio and Proportion	Looking Backwards Year 7 - Simplifying ratios, converting between ratios and fractions, sharing in a ratio. Identifying significant digits, rounding to decimal places Looking Forwards Year 10: Similarity, Direct and Inverse Proportion, Graphs of Proportion, Estimating Averages from Charts	Challenge <ul style="list-style-type: none"> Extension tasks embedded in class slides Exploring algebraic representations and problems UKMT intermediate maths challenge questions Open Middle / Don Steward / Nrich tasks Working backwards Scaffold <ul style="list-style-type: none"> Numeracy Ninja / Core skills retrieval Targeted fluency homework Coloured print resources Place value grids / Times table grids Pictorial representations used routinely Example-problem pairs Visualiser modelling Calculator skills practice 	Formative <ul style="list-style-type: none"> Numeracy Ninjas Retrieval activities Mini whiteboards Self/Peer Assessment Think Pair Share Problem solving tasks Dr Frost homework tasks Exit tickets Low stakes mid-unit assessments Summative End of topic assessments as appropriate
Rounding and Estimation	7	Rounding to decimal places Rounding to significant figures Estimation Truncation Upper and Lower Bounds Calculating with Bounds (H only)	Teams/CMAT/ Year 9/Rounding and Accuracy	Literacy Ratio, Proportion, Inverse, Direct, Estimation, Truncation, Bounds, Error Interval, Significant, Equivalent, Simplify Careers AMSP: Going freelance: percentages, ratio and budgeting		

Y9 Maths Half Term 6

Topic	No of lessons	Key knowledge and skills	Resources	Progression and links	SEND/ More able	Assessment & recording; factual recall checks
Compound Measures	12	Unit conversions: metric, imperial, area, volume Area, Surface Area and Volume recap Speed Density Pressure Converting between compound measures Exchange Rates Rates of Flow Problem Solving	Teams/CMAT/ Year 9/ Compound Measures Higher or Foundation	Looking Backwards Year 7 - Simplifying ratios, converting between ratios and fractions, sharing in a ratio. Identifying significant digits, rounding to decimal places Looking Forwards Year 10: Similarity, Direct and Inverse Proportion, Graphs of Proportion, Estimating Averages from Charts	Challenge <ul style="list-style-type: none"> Extension tasks embedded in class slides Exploring algebraic representations and problems UKMT intermediate maths challenge questions Open Middle / Don Steward / Nrich tasks Working backwards Scaffold <ul style="list-style-type: none"> Numeracy Ninja / Core skills retrieval Targeted fluency homework Coloured print resources Place value grids / Times table grids Pictorial representations used routinely Example-problem pairs Visualiser modelling Calculator skills practice 	Formative <ul style="list-style-type: none"> Numeracy Ninjas Retrieval activities Mini whiteboards Self/Peer Assessment Think Pair Share Problem solving tasks Dr Frost homework tasks Exit tickets Low stakes mid-unit assessments Summative End of topic assessments as appropriate
Ready for Year 10	12	Enrichment Close the Gap Tasks Problem Solving with Money, Algebra, Ratio and Shape		Literacy Ratio, Proportion, Inverse, Direct, Estimation, Truncation, Bounds, Error Interval, Significant, Equivalent, Simplify Careers Working in logistics		

YEAR 10 MATHS CURRICULUM OVERVIEW

Y10 Maths Half Term 1

Topic	No of lessons	Key knowledge and skills	Resources	Progression and links	SEND/ More able	Assessment & recording; factual recall checks
Percentages	13	One quantity as a fraction/percentage of another (F only) (Non-)calculator percentages of an amount Percentage increase/decrease Percentage change Simple interest (F only) Compound interest and depreciation Reverse percentages	Teams/CMAT / Year 10/ Higher or Foundation / Percentages	Looking Backwards Year 7 and 8 – Percentages, Solving linear equations, rearranging formulae Year 9 – Transformations, Straight Line Graphs, Ratio and Proportion Looking Forwards Year 11: Quadratic inequalities and inequality regions, problem solving with graphs, interpreting real life graphs, Area and Volume Literacy Percentage, compound, depreciation, similarity, enlargement, scale factor, midpoint, horizontal, vertical, gradient, y-intercept, parallel, perpendicular, sketch, equation, coordinate, segment, linear, inequality Careers AMSP: Critical Analysis	Challenge <ul style="list-style-type: none"> Extension tasks embedded in class slides Exploring algebraic representations and problems UKMT intermediate maths challenge questions Open Middle / Don Steward / Nrich tasks Working backwards GCSE Statistics content Level 2 Further Maths content Scaffold <ul style="list-style-type: none"> Core skills retrieval Targeted fluency homework Coloured print resources Place value grids / Times table grids Pictorial representations used routinely Example-problem pairs Visualiser modelling Calculator skills practice 	Formative <ul style="list-style-type: none"> Retrieval activities Mini whiteboards Self/Peer Assessment Think Pair Share Problem solving tasks Dr Frost homework tasks Exit tickets Low stakes mid-unit assessments Summative <p>Baseline year 10 assessments</p> <p>End of topic assessments as appropriate</p>
Similarity	6	Recognising similar shapes Linear scale factors Enlargements Area and Volume scale factors (H only) Problem solving including ratio	Teams/CMAT /Year 10 / Higher or Foundation / Similarity			
Straight Line Graphs	12	Midpoints, horizontal and vertical lines (F only) Plotting from tables of values Gradients and y-intercepts graphically and algebraically Sketching graphs Parallel lines Perpendicular lines (H only) Finding equations from a gradient and given point Equations from pairs of coordinates Line segments and ratios (H only) Unconventional representations Graphing linear inequalities (H only)	Teams/CMAT /Year 10 / Higher or Foundation / Straight line graphs			

Y10 Maths Half Term 2

Topic	No of lessons	Key knowledge and skills	Resources	Progression and links	SEND/ More able	Assessment & recording; factual recall checks
Quadratics	13	Recap: multiply and divide algebraic terms, collect like terms (F only) Expand and factorise single brackets Expand double brackets Factorise quadratics Factorise non-monic quadratics (H only) Difference of Two Squares Solve quadratic equations by factorising Completing the Square (H only) Quadratic Formula (H only) Sketching Quadratics Solving Quadratics - any method (H only) Setting up quadratic equations (H only)	Teams/CMAT/ Year 10/ Higher or Foundation / Quadratics	Looking Backwards Year 8 – algebraic manipulation – collect terms, expand and factorise single brackets, solve linear equations Year 9 – Ratio and Proportion Looking Forwards Year 11: Quadratic inequalities and simultaneous equations, algebraic fractions, recognising and sketching graphs Literacy Coefficient, variable, term, expand, factorise, quadratic, equation, solution, root, scale factor, direct, inverse,	Challenge <ul style="list-style-type: none"> Extension tasks embedded in class slides Exploring algebraic representations and problems UKMT intermediate maths challenge questions Open Middle / Don Steward / Nrich tasks Working backwards GCSE Statistics content Level 2 Further Maths content Scaffold <ul style="list-style-type: none"> Core skills retrieval Targeted fluency homework Coloured print resources Place value grids / Times table grids Pictorial representations used routinely Example-problem pairs Visualiser modelling Calculator skills practice 	Formative <ul style="list-style-type: none"> Retrieval activities Mini whiteboards Self/Peer Assessment Think Pair Share Problem solving tasks Dr Frost homework tasks Exit tickets Low stakes mid-unit assessments Summative No formal data drop End of topic assessments as appropriate
Direct and Inverse Proportion	6	Recipe Problems (F only) Value for money (F only) Direct Proportion Inverse Proportion Graphs of Proportionality	Teams/CMAT/ Year 10 / Higher or Foundation / Direct and Inverse Proportion	Careers Dr Nira Chamberlain: Black heroes of mathematics		

Y10 Maths Half Term 3

Topic	No of lessons	Key knowledge and skills	Resources	Progression and links	SEND/ More able	Assessment & recording; factual recall checks
Congruency, Pythagoras and Trigonometry	13	Transformations (F only) Congruency Congruency – applications and proof (H only) Pythagoras Theorem Pythagoras in 3D (H only) Trigonometry – finding missing sides and angles Exact trig values (H only) Trigonometry in 3D (H only)	Teams/CMAT/ Year 10/ Higher or Foundation / Congruency Pythagoras and Trigonometry	Looking Backwards Year 8 – Angles, area, algebraic manipulation Year 9 – Powers and Roots, Transformations Looking Forwards Year 11: Sine and cosine rule, Graphs of trigonometric functions, algebraic fractions, transformations and vectors Literacy Reflection, rotation, translation, enlargement, transformation, scale factor, invariant, congruent, Pythagoras, Trigonometry, Surds, Opposite, Adjacent, Hypotenuse, reciprocal, index, base, power, root Careers Exploring mathematical research topics	Challenge <ul style="list-style-type: none"> Extension tasks embedded in class slides Exploring algebraic representations and problems UKMT intermediate maths challenge questions Open Middle / Don Steward / Nrich tasks Working backwards GCSE Statistics content Level 2 Further Maths content Scaffold <ul style="list-style-type: none"> Core skills retrieval Targeted fluency homework Coloured print resources Place value grids / Times table grids Pictorial representations used routinely Example-problem pairs Visualiser modelling Calculator skills practice 	Formative <ul style="list-style-type: none"> Retrieval activities Mini whiteboards Self/Peer Assessment Think Pair Share Problem solving tasks Dr Frost homework tasks Exit tickets Low stakes mid-unit assessments Summative Mid-year Trial Exams End of topic assessments as appropriate
Powers and Roots	6	Powers and Roots (F only) Index Laws for multiply, dividing and brackets Negative powers and reciprocals Fractional powers (H only)	Teams/CMAT/Year 10 / Higher or Foundation / Powers and Roots			

Y10 Maths Half Term 4

Topic	No of lessons	Key knowledge and skills	Resources	Progression and links	SEND/ More able	Assessment & recording; factual recall checks
Listing Strategies, Probability and Sets	14	Listing strategies Product rule for counting Single event probability (F only) Sample space diagrams Frequency Trees AND/OR rules Relative frequency Tree Diagrams Venn Diagrams Set notation Conditional probability (H only)	Teams/CMAT/ Year 10/ Higher or Foundation / Listing Strategies, Probability and Sets	Looking Backwards Year 8 – Algebraic manipulation, solving equations, probability Year 9 – Solving equations and inequalities, rearranging formulae Looking Forwards Year 11: Algebraic tree diagrams, Problem solving with Venns and Sets, Forming and Solving Equations and Inequalities	Challenge <ul style="list-style-type: none"> Extension tasks embedded in class slides Exploring algebraic representations and problems UKMT intermediate maths challenge questions Open Middle / Don Steward / Nrich tasks Working backwards GCSE Statistics content Level 2 Further Maths content Scaffold <ul style="list-style-type: none"> Core skills retrieval Targeted fluency homework Coloured print resources Place value grids / Times table grids Pictorial representations used routinely Example-problem pairs Visualiser modelling Calculator skills practice 	Formative <ul style="list-style-type: none"> Retrieval activities Mini whiteboards Self/Peer Assessment Think Pair Share Problem solving tasks Dr Frost homework tasks Exit tickets Low stakes mid-unit assessments Summative No formal data drop End of topic assessments as appropriate
Forming and Solving Equations	10	Equations, Identities, Formulae and Expressions Equating coefficients (H only) Rearranging harder formulae (H only) Substitution Solving one sided equations including fractions and negatives (F only) Forming equations (F only) Iterative Methods (H only)	Teams/CMAT/Y ear 10 / Foundation / Substitution Teams/CMAT/Y ear 10 / Higher / Iteration	Literacy Language of Probability, Tree, Venn, Set, Equation, Identity, Formula, Expression, coefficient, rearrange, iteration, conditional Careers What do Statisticians do all day?		

Y10 Maths Half Term 5

Topic	No of lessons	Key knowledge and skills	Resources	Progression and links	SEND/ More able	Assessment & recording; factual recall checks
Surds (H only)	7	Calculations in terms of Pi Simplifying Surds Approximating Surds Manipulating surd: (add/subtract/divide/multiply) Rationalising the denominator Exact values of trigonometric functions	Teams/CMAT/ Year 10/ Higher / Surds	Looking Backwards Year 7 - Working with fractions, Powers and Roots Year 8 - Area/Circumference of a Circle, Algebraic Manipulation Year 9 – Powers and Roots Year 10 - Trigonometry	Challenge <ul style="list-style-type: none"> Extension tasks embedded in class slides Exploring algebraic representations and problems UKMT intermediate maths challenge questions Open Middle / Don Steward / Nrich tasks Working backwards GCSE Statistics content Level 2 Further Maths content 	Formative <ul style="list-style-type: none"> Retrieval activities Mini whiteboards Self/Peer Assessment Think Pair Share Problem solving tasks Dr Frost homework tasks Exit tickets Low stakes mid-unit assessments
Calculating with Exact Values (F only)	7	Fractions: <ul style="list-style-type: none"> Equivalent Mixed to improper Of amounts (including fractions > 1) Multiplying Dividing Adding/Subtracting All including simple algebraic fractions Area and circumference of a circle Calculations in terms of Pi	Teams/CMAT/Y ear 10 / Foundation / Exact Values	Looking Forwards Year 11: Non right angle and 3D trigonometry, complex manipulation of surds, algebraic fractions, Sectors of circles Literacy Pi, Surd, Denominator, Rationalise, Equivalent, Improper, Circumference Careers Air Miles: Exploring the travelling salesman problem	Scaffold <ul style="list-style-type: none"> Core skills retrieval Targeted fluency homework Coloured print resources Place value grids / Times table grids Pictorial representations used routinely Example-problem pairs Visualiser modelling Calculator skills practice 	Summative No formal data drop End of topic assessments as appropriate

Y10 Maths Half Term 5 contd

Topic	No of lessons	Key knowledge and skills	Resources	Progression and links	SEND/ More able	Assessment & recording; factual recall checks
Simultaneous Equations	7	<p>Plotting Linear Graphs (F only)</p> <p>Linear Simultaneous Equations Solving graphically Solving algebraically by:</p> <ul style="list-style-type: none"> • Elimination • Substitution • Choosing an appropriate method • Form and solve <p>Non-linear simultaneous equations (H only)</p> <ul style="list-style-type: none"> • One linear, one quadratic • Including circle equations <p>Form and solve simultaneous equations from a ratio (H only)</p>	<p>Teams/CMAT/Year 10 / Higher / Simultaneous Equations</p> <p>Teams/CMAT/Year 10 / Foundation / Simultaneous Equations</p>	<p>Looking Backwards</p> <p>Year 8 - Solving Linear Equations Year 9 – Plotting linear graphs Year 10 – Equations of straight line graphs</p> <p>Looking Forwards Year 11: Quadratic Graphs, More complex forming and solving equations</p> <p>Literacy Simultaneous, Linear, Quadratic, Equation, Elimination, Substitution, Graphical, Form, Solve</p> <p>Careers Air Miles: Exploring the travelling salesman problem</p>	<p>Challenge</p> <ul style="list-style-type: none"> • Extension tasks embedded in class slides • Exploring algebraic representations and problems • UKMT intermediate maths challenge questions • Open Middle / Don Steward / Nrich tasks • Working backwards • GCSE Statistics content • Level 2 Further Maths content <p>Scaffold</p> <ul style="list-style-type: none"> • Core skills retrieval • Targeted fluency homework • Coloured print resources • Place value grids / Times table grids • Pictorial representations used routinely • Example-problem pairs • Visualiser modelling • Calculator skills practice 	<p>Formative</p> <ul style="list-style-type: none"> • Retrieval activities • Mini whiteboards • Self/Peer Assessment • Think Pair Share • Problem solving tasks • Dr Frost homework tasks • Exit tickets • Low stakes mid-unit assessments <p>Summative</p> <p>No formal data drop</p> <p>End of topic assessments as appropriate</p>

Y10 Maths Half Term 6

Topic	No of lessons	Key knowledge and skills	Resources	Progression and links	SEND/ More able	Assessment & recording; factual recall checks
Handling Data	7	F only Mean, median, mode and range from discrete data, frequency tables and grouped frequency tables Constructing and interpreting bar charts, pictograms and pie charts H only Median and quartiles from frequency tables Drawing box plots Comparing and interpreting box plots Drawing and interpreting cumulative frequency graphs Constructing and interpreting histograms	Teams/CMAT/ Year 10/ Foundation / Averages Charts and Graphs Teams/CMAT/ Year 10/ Higher / Quartiles, Box Plots and Cumulative Frequency Histograms	Looking Backwards Year 7 and 8 – Data handling project Year 9 – Collecting and Representing Data Looking Forwards Year 11: Problem solving with averages, Median from a histogram, Comparing distributions, GCSE Statistics Literacy Mean, median, mode, range, average, discrete, continuous, grouped, pictogram, quartile, cumulative, histogram, box plot, outlier, estimate Careers AMSP: Why study maths? Post-16 options.	Challenge <ul style="list-style-type: none"> Extension tasks embedded in class slides Exploring algebraic representations and problems UKMT intermediate maths challenge questions Open Middle / Don Steward / Nrich tasks Working backwards GCSE Statistics content Level 2 Further Maths content Scaffold <ul style="list-style-type: none"> Core skills retrieval Targeted fluency homework Coloured print resources Place value grids / Times table grids Pictorial representations used routinely Example-problem pairs Visualiser modelling Calculator skills practice 	Formative <ul style="list-style-type: none"> Retrieval activities Mini whiteboards Self/Peer Assessment Think Pair Share Problem solving tasks Dr Frost homework tasks Exit tickets Low stakes mid-unit assessments Summative End of Year Trial Exams End of topic assessments as appropriate
Mock Exams, Follow Up and Preparing for Year 11	7	Mixed revision activities in preparation for end of year assessment. Assessment follow up including Close the Gap tasks.	Teams/CMAT/Year 10 / Foundation / Exact Values			

YEAR 11 MATHS CURRICULUM OVERVIEW

Curriculum maps for year 11 classes provide an overview of the course of study for a student attaining at grade 7-9 on the Higher tier and grade 4-5 on the Foundation tier.

The sequence of study for each year 11 class is adjusted to the strengths of the group and any problematic areas identified following assessments. Topics may be studied in a different order to that shown on the scheme of learning and some may be added or omitted by the class teacher in order to prepare each class to achieve as well as possible in their end of course assessments.

Delivery of new curriculum content is planned up until February half term, this is followed by a program of revision that is bespoke to classes, smaller intervention groups or individual students.

Y11 Maths Half Term 1 - Higher

Topic	No of lessons	Key knowledge and skills	Resources	Progression and links	SEND/ More able	Assessment & recording; factual recall checks
Fractions and Decimals	2	Convert between decimals and fractions Convert recurring decimals to fractions	Teams/CMAT/ Year 11/ Higher / Converting Decimals and Fractions	Looking Backwards Fractions, Decimals, Sequences, Transformations, Right angle triangle trigonometry, Quadratic equations, Expanding brackets, Solving linear inequalities, Algebraic Manipulation Literacy Recur, Quadratic, Arithmetic, Geometric, Fibonacci, Triangular, Ratio, Translation, Vector, Scalar, Proof, Elevation, Depression, Equation, Solution, Numerator, Denomincator, Inequality	Challenge <ul style="list-style-type: none">Extension tasks embedded in class slidesExploring algebraic representations and problemsUKMT intermediate maths challenge questionsOpen Middle / Don Steward / Nrich tasksWorking backwardsGCSE Statistics contentLevel 2 Further Maths content Scaffold <ul style="list-style-type: none">Core skills retrievalTargeted fluency homeworkColoured print resourcesPlace value grids / Times table gridsPictorial representations used routinelyExample-problem pairsVisualiser modellingCalculator skills practice	Formative <ul style="list-style-type: none">Retrieval activitiesMini whiteboardsSelf/Peer AssessmentThink Pair ShareProblem solving tasksDr Frost homework tasksExit ticketsLow stakes mid-unit assessments Summative No formal Trial Exams End of topic assessments as appropriate
Linear and Quadratic Sequences	5	Linear Sequences Quadratic Sequences Special Sequences Geometric Sequences	Teams/CMAT/Y ear 11 / Higher / Sequences			
Vectors	6	Translations Add/Subtract vectors Multiply by a scalar Solve vector problems / proofs	Teams/CMAT/Y ear 11 / Higher / Vectors			
Further Trigonometr y		Area of any triangle Sine Rule Cosine Rule Angles of elevation/depression	Teams/CMAT/Y ear 11 / Higher / Further Trigonometry			
Algebraic Fractions		Quadratic Equations recap Linear algebraic fractions Quadratic algebraic fractions	Teams/CMAT/Y ear 11 / Higher / Algebraic Fractions			
Quadratic Inequalities		Linear inequalities (algebraic and graphical) Solving quadratic inequalities	Teams/CMAT/Y ear 11 / Higher / Inequalities and Proof			
Proof		Algebraic and geometric proof				

Y11 Maths Half Term 1 - Foundation

Topic	No of lessons	Key knowledge and skills	Resources	Progression and links	SEND/ More able	Assessment & recording; factual recall checks
Fractions and Decimals	2	Convert between decimals and fractions	Teams/CMAT/ Year 11/ Foundation / Converting Decimals and Fractions	Looking Backwards Decimals, Fractions, Sequences, Transformations, Pythagoras, Expanding brackets, Collecting like terms Literacy Decimal, Fraction, linear, quadratic, arithmetic, geometric, square, cube, prime, Fibonacci, Triangular, Translation, Rotation, Reflection, Enlargement, Centre, Transformation, Scale Factor, Vector, Scalar, Similar, Trigonometry, Expand, Simplify, Inequality	Challenge <ul style="list-style-type: none"> Extension tasks embedded in class slides Exploring algebraic representations and problems UKMT intermediate maths challenge questions Open Middle / Don Steward / Nrich tasks Working backwards GCSE Statistics content Scaffold <ul style="list-style-type: none"> Core skills retrieval Targeted fluency homework Coloured print resources Place value grids / Times table grids Pictorial representations used routinely Example-problem pairs Visualiser modelling Calculator skills practice 	Formative <ul style="list-style-type: none"> Retrieval activities Mini whiteboards Self/Peer Assessment Think Pair Share Problem solving tasks Dr Frost homework tasks Exit tickets Low stakes mid-unit assessments Summative No formal Trial Exams End of topic assessments as appropriate
Linear and Quadratic Sequences	5	Linear Sequences Quadratic Sequences Special Sequences	Teams/CMAT/ Year 11/ Foundation / Sequences			
Vectors	6	Translations, Rotations, Reflections and Enlargements Describing vectors Add/Subtract vectors Multiply by a scalar Vector Routes	Teams/CMAT/ Year 10 / Foundation/ Transformations and Vectors			
Further Trigonometry		Similarity Pythagoras Trigonometry – Missing sides and angles Exact trigonometric values	Teams/CMAT/ Year 11/ Foundation / Trigonometry			
Quadratics and Inequalities		Expanding double brackets Factorising quadratics Solving quadratics Linear inequalities recap Solving inequalities	Teams/CMAT/ Year 11/ Foundation / Quadratics			

Y11 Maths Half Term 2 - Higher

Topic	No of lessons	Key knowledge and skills	Resources	Progression and links	SEND/ More able	Assessment & recording; factual recall checks
Box Plots and Cumulative Frequency	6	Quartiles and median from a frequency table Drawing box plots Drawing and interpreting cumulative frequency graphs Comparing box plots	Teams/CMAT/ Year 11/ Higher / Quartiles...	Looking Backwards Data handling project, Averages, Quadratics, Trigonometry, Transformations	Challenge <ul style="list-style-type: none"> Extension tasks embedded in class slides Exploring algebraic representations and problems UKMT intermediate maths challenge questions Open Middle / Don Steward / Nrich tasks Working backwards GCSE Statistics content Level 2 Further Maths content Scaffold <ul style="list-style-type: none"> Core skills retrieval Targeted fluency homework Coloured print resources Place value grids / Times table grids Pictorial representations used routinely Example-problem pairs Visualiser modelling Calculator skills practice 	Formative <ul style="list-style-type: none"> Retrieval activities Mini whiteboards Self/Peer Assessment Think Pair Share Problem solving tasks Dr Frost homework tasks Exit tickets Low stakes mid-unit assessments Summative <p>Trial Exams 1</p> <p>End of topic assessments as appropriate</p>
Mock Exams and Follow Up				Literacy Quartile, median, types of data, box plot, cumulative, function, composite, inverse, quadratic, cubic, reciprocal, exponential, sine, cosine, tangent, reflect, rotate, transform, scale factor, invariant		
Graphs of Functions	11	Introduction to functions and their notation Composite and inverse functions Quadratic and cubic graphs Reciprocal and exponential graphs Sine, cosine and tangent graphs Transforming functions – translations, reflections, combinations	Teams/CMAT/Year 11 / Higher / Graphs of Functions			

Y11 Maths Half Term 2 - Foundation

Topic	No of lessons	Key knowledge and skills	Resources	Progression and links	SEND/ More able	Assessment & recording; factual recall checks
Averages	6	Mean, median, mode and range recap Averages from frequency and grouped frequency tables recap	Teams/CMAT/Year 11/ Foundation / Averages	Looking Backwards Data handling project, Averages, Substitution, Straight line graphs, Speed Literacy	Challenge <ul style="list-style-type: none"> Extension tasks embedded in class slides Exploring algebraic representations and problems UKMT intermediate maths challenge questions Open Middle / Don Steward / Nrich tasks Working backwards GCSE Statistics content Scaffold <ul style="list-style-type: none"> Core skills retrieval Targeted fluency homework Coloured print resources Place value grids / Times table grids Pictorial representations used routinely Example-problem pairs Visualiser modelling Calculator skills practice 	Formative <ul style="list-style-type: none"> Retrieval activities Mini whiteboards Self/Peer Assessment Think Pair Share Problem solving tasks Dr Frost homework tasks Exit tickets Low stakes mid-unit assessments Summative Trial Exams 1 End of topic assessments as appropriate
Mock Exams and Follow Up						
Graphs of Functions	10	Coordinates Vertical and horizontal lines Plotting a graph from a table of values Gradient and y-intercept graphically and algebraically Working with straight line equations Parallel lines Sketching linear functions Distance time graphs Real life graphs	Teams/CMAT/Year 11 / Foundation / Graphs of Functions	Mean, median, mode, range, average, grouped, types of data, frequency, vertical, horizontal, coordinate, gradient, intercept, parallel, sketch, linear, speed		

Y11 Maths Half Term 3 - Higher

Topic	No of lessons	Key knowledge and skills	Resources	Progression and links	SEND/ More able	Assessment & recording; factual recall checks
Graphs of Functions	5	Drawing a tangent to estimate the gradient of a curve Finding the area under a curve Interpreting gradients and areas in context Equation of a circle Equation of a tangent	Teams/CMAT/Year 11/ Higher / Graphs of Functions	Looking Backwards Gradient, Area of a trapezium, Straight line graphs, parts of a circle, area and circumference of a circle, volume of a prism, surface area	Challenge <ul style="list-style-type: none"> Extension tasks embedded in class slides Exploring algebraic representations and problems UKMT intermediate maths challenge questions Open Middle / Don Steward / Nrich tasks Working backwards GCSE Statistics content Level 2 Further Maths content 	Formative <ul style="list-style-type: none"> Retrieval activities Mini whiteboards Self/Peer Assessment Think Pair Share Problem solving tasks Dr Frost homework tasks Exit tickets Low stakes mid-unit assessments
Surface Area and Volume	11	Recap: area, properties of circles Sectors: area and arc length Problem solving with circles Surface area Volume: Prism, pyramid, cone, sphere, frustum Problem solving with volume and surface area	Teams/CMAT/Year 11 / Higher / Area and Volume	Literacy Tangent, estimate, gradient, intercept, sector, segment, chord, arc, circumference, radius, diameter, prism, pyramid, cone, sphere, frustum, scale factor, subtend, alternate segment	Scaffold <ul style="list-style-type: none"> Core skills retrieval Targeted fluency homework Coloured print resources Place value grids / Times table grids Pictorial representations used routinely Example-problem pairs Visualiser modelling Calculator skills practice 	
Circle Theorems	5	Identifying, using and proving seven circle theorems	Teams/CMAT/Year 11 / Higher / Circle Theorems			Summative No formal data drop End of topic assessments as appropriate Trial Exams 2 in half term 4

Y11 Maths Half Term 3 - Foundation

Topic	No of lessons	Key knowledge and skills	Resources	Progression and links	SEND/ More able	Assessment & recording; factual recall checks
Graphs of Functions	5	Drawing quadratic functions Features of quadratic functions Sketching quadratic functions Drawing cubic and reciprocal functions	Teams/CMAT/ Year 11/ Foundation / Graphs of Functions	Looking Backwards Straight line graphs, expand brackets, quadratics and their equations, perimeter, area, parts of a circle, area and circumference of a circle, volume of a cuboid/prism, surface area of a cuboid	Challenge <ul style="list-style-type: none"> Extension tasks embedded in class slides Exploring algebraic representations and problems UKMT intermediate maths challenge questions Open Middle / Don Steward / Nrich tasks Working backwards GCSE Statistics content 	Formative <ul style="list-style-type: none"> Retrieval activities Mini whiteboards Self/Peer Assessment Think Pair Share Problem solving tasks Dr Frost homework tasks Exit tickets Low stakes mid-unit assessments
Surface Area and Volume	11	Perimeter Area Properties of circles Circumference and Area of a Circle Sectors Surface Area Volume Problem Solving	Teams/CMAT/Y ear 11 / Foundation / Perimeter Area and Volume	Literacy Quadratic, sketch, cubic, reciprocal, perimeter, area, circumference, sector, segment, chord, arc, radius, diameter, surface, volume	Scaffold <ul style="list-style-type: none"> Core skills retrieval Targeted fluency homework Coloured print resources Place value grids / Times table grids Pictorial representations used routinely Example-problem pairs Visualiser modelling Calculator skills practice Revision books/guides used in class and at home 	Summative No formal data drop End of topic assessments as appropriate Trial Exams 2 in Half Term 4