Curriculum Map 2025 onwards

Year view Subject: Mathematics				
Year 7	**Knowledge/Content**	**Skills**	**Assessments/Checkpoints**	**Comments**
Autumn Term 1	Numbers and the number system. Calculating. Checking, approximating and estimating.	Working with primes, factors multiples, powers, roots. Problem Solving with HCF/LCM. Formal written methods and BIDMAS. Rounding and estimating.	Classroom assessment based on new topics covered.	
Autumn Term 2	Counting and comparing Visualising and constructing. Investigating properties of shapes.	Using directed numbers and notation for ordering. Comparing fractions. Measuring angles, constructing triangles. Investigating 2D shapes, 3D solids and their nets, and drawing 3D.	Classroom assessment focussing on recent topics and including a selection from all previous topics.	
Spring Term 1	Algebraic proficiency: tinkering. Exploring fractions, decimals, percentages. Proportional reasoning.	Algebraic notation, simplifying, expanding, and substituting values. Calculations involving fractions; problem solving with fractions, decimals and percentages. Problem solving with ratio.	Classroom assessment focussing on recent topics and including a selection from all previous topics.	
Spring Term 2	Pattern sniffing. Measuring space. Investigating angles. Calculating with fractions, decimals and percentages.	Investigating linear sequences, term-to-term rules, and generating sequences. Drawing graphs. Measuring with metric units and prefixes. Timetables. Using angle facts. Arithmetic with mixed numbers and fractions and percentage change.	Classroom assessment focussing on recent topics and including a selection from all previous topics.	
Summer Term 1	Solving equations and inequalities. Calculating Space.	Solving multi-step linear equations and inequalities. Perimeters and areas of 2D shapes. Volumes and surface areas of 3D shapes.	Classroom assessment focussing on recent topics and including a selection from all previous topics.	UKMT Junior Maths Challenge (all students).
Summer Term 2	Mathematical movement. Presentation of data. Measuring data.	Working with coordinates in all four quadrants and transformations: translations, reflections, & rotations. Construct/interpret tables charts and graphs.	End of year assessment.	

		Finding mean/median/mode from data and frequency tables, comparing data sets.		

Year view Subject: Mathematics				
Year 8	**Knowledge/Content**	**Skills**	**Assessments/Checkpoints**	**Comments**
Autumn Term 1	Numbers and the number system. Calculating.	Types of numbers. Worded problems involving HCF & LCM. Standard form. Rounding to significant figures. Estimating. Proficiency with arithmetic and BIDMAS	Classroom assessment focussing on recent topics and including a selection from all previous topics.	
Autumn Term 2	Visualising and constructing Understanding risk I Presenting Data. Measuring Data.	Isometric drawings, transformations including enlargements. Scale drawings and bearings Understanding experimental probability. Presenting discrete and continuous univariate data, and scatter graphs for bivariate data. Analysis and compare data sets, and estimate mean from a grouped frequency table.	Classroom assessment focussing on recent topics and including a selection from all previous topics.	
Spring Term 1	Algebraic proficiency: tinkering Understanding Risk II. Exploring fractions, decimals and percentages. Investigating angles.	Algebra including indices, factorising and substitution. Constructing sample spaces for combined events. Probability with sets and Venn diagrams. Revision of fractions and conversions to decimals and percentages. Reviewing angle facts and geometrical reasoning. Interior and exterior angles of regular polygons. Solving problems involving bearings	Classroom assessment focussing on recent topics and including a selection from all previous topics.	

Spring Term 2	Proportional reasoning. Solving equations and inequalities. Calculating fractions, decimals, and percentages.	Applying ratio/fractions/proportion to real problems in context. Forming and solving linear equations Percentage increase, reverse percentages	Classroom assessment focussing on recent topics and including a selection from all previous topics.	
Summer Term 1	Pattern sniffing.	Finding nth term rules for linear sequences. UKMT preparation	End of year assessment	UKMT Junior Maths Challenge (all students).
Summer Term 2	Calculating space. Algebraic proficiency: visualising	Circles. Compound shapes. Similar shapes and ratio. 3D: prisms and cylinders. Plotting straight line graphs, finding gradients and equations of straight line graphs. Interpreting travel graphs.	Classroom assessment focussing on recent topics and including a selection from all previous topics	
Year view Subject: Mathematics				
Year 9	**Knowledge/Content**	**Skills**	**Assessments/Checkpoints**	**Comments**
Autumn Term 1	Calculating Visualising and constructing	Indices, calculating with standard form, percentages review and compound interest, error intervals, review of fractions, recurring decimals to fractions. Constructions, loci and 2D representation of 3D shapes.	Classroom assessment focussing on recent topics and including a selection from all previous topics.	
Autumn Term 2	Algebraic Proficiency Proportional reasoning	Solving linear equations, factorising and solving quadratics, algebraic fractions, rearranging algebraic equations and substitution. Review of ratio, direct and inverse proportion	Classroom assessment focussing on recent topics and including a selection from all previous topics.	
Spring Term 1	Proportional reasoning Pattern Sniffing	Congruency and similarity, compound measures. Fibonacci sequence, nth term review, using nth term to generate a sequence, using term to term rules.	Classroom assessment focussing on recent topics and including a selection from all previous topics.	

Spring Term 2	Solving equations and inequalities Calculating space	Solving linear inequalities and representing on a number line. Arcs and sectors, volume and surface area of prisms, Pythagoras, trigonometry	Classroom assessment focussing on recent topics and including a selection from all previous topics.	
Summer Term 1	Conjecturing Algebra: visualising	Geometric proof Review and development of straight lines, plotting quadratics, cubics and reciprocal graphs, drawing and interpreting distance time graphs.	Classroom assessment focussing on recent topics and including a selection from all previous topics.	
Summer Term 2	Solving equations and inequalities Understanding risk Presentation of data	Solving linear simultaneous equations Calculating probabilities of combined events, drawing tree diagrams, frequency polygons, stem and leaf diagrams and scatter graphs.	Classroom assessment focussing on recent topics and including a selection from all previous topics.	

Year view Subject: Mathematics				
Year 10	**Knowledge/Content**	**Skills**	**Assessments/Checkpoints**	**Comments**
Autumn Term 1	Number Algebra Geometry	Number terminology, calculating HCF and LCM, review of standard form, trial and improvement, error intervals. Solving inequalities and representing on a number line, indices rules, expanding and factorising quadratics. Pythagoras, trigonometry.	Classroom assessment focussing on recent topics and including a selection from all previous topics.	Most sets sit the same Higher GCSE Maths. Sets 1 and 2 may cover content in extra depth.
Autumn Term 2	Geometry Algebra	Angles review, circle theorems, calculating area and volume of shapes. Solving quadratics graphically and by factorising, straight line graphs review.	Classroom assessment focussing on recent topics and including a selection from all previous topics.	

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Spring Term 1	Geometry Statistics Algebra	Trigonometry in 3D shapes, sine and cosine rule, area of a triangle. Cumulative frequency curves including finding the median and interquartile range, estimates for the mean from grouped data tables, drawing box plots. Plotting quadratics, factorising quadratics development, quadratic formula.	Classroom assessment focussing on recent topics and including a selection from all previous topics.	UKMT Intermediate Maths Challenge (Sets 1 & 2).
Spring Term 2	Number Geometry	Working and calculating with surds, recurring decimals to fractions development Drawing and describing transformations, invariant points	Classroom assessment focussing on recent topics and including a selection from all previous topics.	
Summer Term 1	Statistics Probability	Drawing and interpreting histograms, sampling and questionnaires. Review of calculating probabilities, using Venn diagrams, tree diagrams and conditional probabilities.	Y10 exams.	
Summer Term 2	Algebra	Inequalities and regions, solving linear and quadratic simultaneous equations, distance time graphs, calculating the area under a curve and gradients.	Classroom assessment focussing on recent topics and including a selection from all previous topics.	

Year view Subject: Mathematics				
Year 11	**Knowledge/Content**	**Skills**	**Assessments/Checkpoints**	**Comments**
Autumn Term 1	Geometry Ratio Algebra Number	Review of arcs and sectors and sine and cosine rule, segments and chords, vectors. Ratio review, direct and indirect proportion development, rates of change. Area under curves development with velocity time graphs. Percentage review.	Classroom assessment focussing on recent topics and including a selection from all previous topics.	
Autumn Term 2	Algebra	Plotting trigonometric and exponential curves and review of plotting quadratic, cubic and reciprocal curves, calculating the equation of a quadratic curve, completing the square, rearranging formulae review, transformation of graphs, equations of circles.	Formal mock exam.	
Spring Term 1	Geometry Algebra	Drawing constructions and loci. Solving quadratic inequalities, functions including inverse and composite, calculating tangents to circles, combined transformations review, gradients of curves using tangents.	Classroom assessment focussing on recent topics and including a selection from all previous topics.	
Spring Term 2	Probability Algebra Geometry	Venn diagram development. Review of sequences, sequence terminology, iteration, calculating the nth term of a quadratic sequence, algebraic fractions development, algebraic proof and reasoning. Calculating and using exact trigonometric ratios, geometric proof development, similarity and congruence review including links to area/volume.	Classroom assessment focussing on recent topics and including a selection from all previous topics.	

Summer Term 1	Revision	Revision and exam preparation.	Classroom assessment focussing on recent topics and including a selection from all previous topics. External Exams.	
Summer Term 2	External Exams	External Exams	External Exams.	Most students sit the same Higher GCSE Maths.

Year view Subject: Mathematics				
Year 12	**Knowledge/Content**	**Skills**	**Assessments/ Checkpoints**	**Comments**
Autumn Term 1	Pure	**Algebraic Expressions**: Index Laws, expanding brackets and factorizing; Negative and fractional indices; Surds. **Quadratics:** Completing the square, functions, solving and sketching quadratics, quadratics is disguise, the discriminant and Modelling with quadratics **Equations and Inequalities**: Linear and quadratic simultaneous, Simultaneous Equations on Graphs equations, Linear inequalities, Quadratic inequalities, Inequalities on graphs and regions. **Vectors**: Magnitude and direction of vectors, Position vectors, solving geometric problems involving vectors. Modelling with vectors. **Trig Ratios:** Sine and cosine rule and areas of triangles Graphs of sine, cosine and tangent and transforming trigonometric graphs **Graphs and transformations: C**ubic, Quartic and reciprocal graphs, points of intersection, transformation of graphs and transforming functions **Straight line graphs:** Parallel and Perpendicular Line, length and area and modelling with straight lines	Base line test and Classroom assessments focussing on recent topics.	UKMT Senior Maths Challenge (all students).
Autumn Term 2	Pure	**Trigonometric identities and equations:** Trigonometric identities, trig equations, trig problems. **Circles:** Midpoints and perpendicular bisectors, Equation of a circle, Intersections of straight lines and circles, Tangent and chord properties and circles and triangles. **The binomial expansion:** Solving Binomial Problems **Differentiation:** Differentiation from first principles. Differentiating using standard results, Finding the gradient at a specified point, Gradients, tangents and normals, Increasing and decreasing functions, second derivatives and stationary points, Sketching gradient functions and Modelling with differentiation	Classroom assessments focussing on recent topics and including a selection from all previous topics.	

		Algebraic Methods: Divide a polynomial by a linear expression. Use the factor theorem to factorise a cubic. Use proof by exhaustion and disproof by counter-example.		
Spring Term 1	Pure Applied	**Integration:** Indefinite Integrals, finding functions, definite integrals, areas under curves, areas between lines and curves, **Exponentials and logarithms:** Exponential functions. apply the laws of logs, solve equations involving exponentials, use logs to estimate the values of constants in non-linear models and modeling with logs. **Modelling in Mechanics:** Modelling assumptions and quantities and units and working with vectors **Constant acceleration:** Displacement time graphs, Velocity-time graphs, Constant acceleration, Derive all constant acceleration formulae and Vertical motion under gravity. **Probability:** Calculating probabilities and Venn Diagrams. Mutually exclusive and independent events and use and interpret tree diagrams **Statistical Distribution:** discrete random variables, binomial distribution, cumulative probabilities using the binomial distribution.	Classroom assessments focussing on recent topics and including a selection from all previous topics.	
Spring Term 2	Applied	**Forces and Motion:** Force diagrams & forces as vectors. Forces and acceleration. Simple F=ma (1D). Motion in 2D. F=ma (2D). Solve connected particle problems. Solve connected particle problems with pulleys. Horizontal Pulleys and breaking string **Data Collection:** population, census, sample, sampling units, sampling frame. Non-random sampling and types of data. Perform sampling on the large data set. **Hypothesis testing:** Understand the language of hypothesis tests. one-tailed hypothesis tests. two-tailed hypothesis tests. Explain and find critical regions.	Classroom assessments focussing on recent topics and including a selection from all previous topics.	

Summer Term 1	Applied	**Variable acceleration:** non-constant acceleration or velocity as a function of time. Using integration and differentiation to find the function for acceleration, velocity and displacement. Use calculus to derive the formulae for motion. **Measure of location and spread:** Measures of central tendency. measure the spread of data using the range, interquartile range and interpercentile range. find and interpret the variance and standard deviation. Codding. **Representation of data:** Outliers and histograms. **Correlation:** Correlation and linear regression. Linear models.	Year 12 exams.	
Summer Term 2	Pure Y13	**Algebraic methods:** Convert an expression with linear factors in the denominator into partial fractions. Convert an expression with repeated linear factors in the denominator into partial fractions. Convert an improper fraction into partial fraction form. Use proof by contradiction. **Radiance:** Find an arc length and areas of sectors using radians. Solve trigonometric equations in radians. Use approximate trigonometric values when theta is small **Sequences and Series:** Arithmetic Sequences and series. Geometric Sequences and series. Sum to infinity. Sigma notation. Recurrence relations. Model real life situations with sequences and series	Classroom assessments focussing on recent topics and including a selection from all previous topics. Mock exams	

Year view Subject: Mathematics				
Year 13	**Knowledge/Content**	**Skills**	**Assessments/Checkpoints**	**Comments**
Autumn Term 1	Pure	**Functions and Graphs:** modulus function, mappings and functions, composite function, find the inverse of a function graphically and algebraically. Combination of two (or more) transformations, Transform the modulus function. 7Solving modulus problems.	Classroom assessments focussing on recent topics and including a selection from all previous topics.	

	Applied	**Trig Functions and Modelling:** Reciprocal trigonometric functions and their graph. Solving with reciprocal trig functions. Inverse trigonometric functions. Addition formulae. Double angle formulae. Proving and solving using the addition/double angle formula. Modelling with trig. **Differentiation 1:** Differentiate trigonometric functions, exponentials and logs. Chain rule, product rule and quotient rule. **Forces and Friction:** Resolving forces, inclined planes. Coefficient of friction: Horizontal planes and Coefficient of friction: inclined planes. **Application of Forces:** system is in equilibrium, Modelling with static particles. Friction and static particles. Dynamics and inclined planes. Connected particles on inclined planes with both rough and smooth surfaces.		
Autumn Term 2	Pure Applied	**Parametric Equations:** parametric equations into Cartesian, sketch parametric curves, geometry problems involving parametric curves, Modelling with parametric equations. **Moments:** Resultant moments, uniform rods in equilibrium, non-uniform rods in equilibrium, rods on the point of tilting. **Vectors:** Vectors in 3D. Solving geometric problems with vectors. **Differentiation 2:** Differentiate trigonometric functions, parametric equations. Implicit differentiation. Using second derivatives. **Conditional Probability:** Using Venn's for Probability. Conditional probability. Probability formulae and tree diagrams. **Binomial Expansion:** Using the formula to find a specific approximation. Binomial expansion with partial fractions.	Mock exams.	

Spring Term 1	Pure Applied	**Integration:** Integrating standard functions, Use the reverse chain rule, Integrating using the Trigonometric Identities. Integration by substitution and by parts. Integrating partial fractions. Finding areas. Parametric integration. Trapezium rule and integration as the limit of a sum. **Regression, correlation and hypothesis testing:** Exponential models, measuring correlation, Hypothesis testing for zero correlation. **Normal Distribution:** Finding probabilities for normal distributions, inverse normal distribution, Finding mu and sigma. Approximating a binomial distribution. Hypothesis testing with the normal distribution	Mock exams Classroom assessments focussing on recent topics and including a selection from all previous topics.	
Spring Term 2	Pure Applied	**Numerical Methods:** Iteration, The Newton-Raphson method, Applications to Modelling. **Differential Equations:** Rates of change. Solving differential equations. Modelling with differential equations. **Projectiles:** Horizontal projection. Horizontal and vertical components. Projection at any angle. Projection motion formula **Further Kinematics:** Vectors in kinematics. Vector methods with projectiles. Variable acceleration in 1D. Differentiating and integrating vectors	Classroom assessment focussing on recent topics and including a selection from all previous topics.	
Summer Term 1	Pure Applied	Consolidation. Consolidation.	Classroom assessment focussing on recent topics and including a selection from all previous topics. External exams.	
Summer Term 2			External exams.	

Year view Subject: Mathematics and Further Mathematics				
Year 12	**Knowledge/ Content**	**Skills**	**Assessments/ Checkpoints**	**Comments**
Autumn Term 1	Pure Applied	Quadratics: factorising, expanding, sketching, solving, indices and surds, simultaneous equations, solving inequalities, equations of circles and tangents. Sketching graphs, graph transformations, factor theorem, algebraic proof, differentiation from first principles, differentiation and using to find gradients, tangents and normals. Modelling in mechanics, units, distance and velocity time graphs, SUVAT formulae, forces and acceleration on an object, connected particles, pulleys. Vectors, measures of central tendency and spread, sampling methods.	Classroom assessments focussing on recent topics.	Maths content taught first.
Autumn Term 2	Pure Applied	Binomial expansion, second derivatives and their uses, trigonometry review, solving trigonometric equations, sketching trigonometric graphs, trig identities. Integration introduction and definite integrals, trapezium rule, logarithms and exponentials. Data representation: histograms, boxplots, cumulative frequency, data comparison and outliers, probability: Venn diagrams, tree diagrams, mutually exclusive and independent events. Correlation in data sets, hypothesis testing.	Classroom assessments focussing on recent topics and including a selection from all previous topics.	UKMT Senior Maths Challenge.
Spring Term 1	Pure Applied	Arithmetic sequences and series, modelling using logarithms. Geometric sequences and series, radians, arcs and sectors, functions: notation, composite, inverse, range & domain. Variable acceleration and consolidation of year 1 work. Conditional probability, set notation, regression lines, measuring correlation and correlation hypothesis testing.	As above.	
Spring Term 2	Pure Applied	Algebraic fractions, partial fractions, development of binomial expansion, development of trigonometry: new functions, inverses, identities, trigonometric formulae. Development of differentiation: trigonometry, exponentials and logarithms, differentiation rules. Parametric equations including sketching curves and differentiating. Moments and equilibrium, friction, forces on an inclined plane, projectiles. Applications of forces: static particles, further inclined planes and connected particles, vectors in kinematics, calculus with vectors.	Classroom assessments focussing on recent topics and including a selection from all previous topics.	

Summer Term 1	Pure Applied	Implicit differentiation, development of integration: trigonometric functions, exponentials. Development of integration: different rules and methods. Proof by contradiction, rates of change Normal distribution: using to find probabilities, approximating binomial distributions, hypothesis testing. Vectors in 3 dimensions, numerical methods.	Y12 exams.	
Summer Term 2	F Core Pure F Mechanics 1	Complex numbers. Argand diagrams. Series. Roots of polynomials. Momentum and impulse. Work, energy and power.	Classroom assessments focus on new topics.	Start of further maths.

Year view Subject: Mathematics and Further Mathematics				
Year 13	**Knowledge/Content**	**Skills**	**Assessments/Checkpoints**	**Comments**
Autumn Term 1	F Core Pure F Mechanics 1	Volumes of revolution. Matrices. Linear transformations. Proof by induction. Vectors. Elastic strings and springs. Elastic collisions in one dimension.	Classroom assessments focussing on recent topics and including a selection from all previous topics.	Maths consolidation ongoing throughout new further maths content, with some extra assessments in common with Y13 Maths students.
Autumn Term 2	F Core Pure F Mechanics 1 F Statistics 1	Complex numbers. Series. Methods in calculus. Volumes of revolution. Elastic collisions in two dimensions. Discrete random variables.	Mock exams.	MAT: Maths admissions tests. UKMT Senior Maths Challenge.
Spring Term 1	F Core Pure F Statistics 1	Polar Coordinates. Hyperbolic functions. Poisson distributions. Geometric and negative binomial distributions. Hypothesis testing. Central limit theorem.	Classroom assessments focussing on recent topics and including a selection from all previous topics.	
Spring Term 2	F Core Pure F Statistics 1	Methods in differential equations. Modelling with differential equations. Chi-squared tests. Probability generating functions. Quality of tests.	Classroom assessments focussing on recent topics and including a selection from all previous topics.	
Summer Term 1	All	Consolidation, revision and exam preparation.	Classroom assessments to prepare for exams. External exams.	Maths and Further Maths A levels both examined at the end of Y13.

Summer Term 2			External exams.	