

LONG TERM CURRICULUM PLANNING OVERVIEW:

Mathematics					
	YEAR 7	YEAR 8	YEAR 9	YEAR 10	YEAR 11
Autumn A Topic	Number Algebra Number sense Four operations Negative numbers Order of operations Expressions	Percentage Money Indices Equations Percentage of amounts Percentage change Calculating with money Index laws Solving equations	Fractions and decimals Probability Standard form Inequalities Quadratic equations Fraction decimal and percentage review. Percentage change. Theoretical and experimental probability. Calculations with standard form. Factorising and solving quadratic. Re-arranging formulae.	Number Algebraic manipulation Linear Graphs Operation with number. Simplify and manipulate algebraic expression. Linear graphs.	Probability Statistical diagrams and measures of averages and spread. Recap probability. Construct and interpret statistical diagrams. Scatter diagrams.
Autumn A Knowledge	Using number lines. Integer and decimal place value. Ordering negative numbers. Rounding integers and decimals. Adding and subtracting integers and decimals. Multiplying and dividing by powers of 10. Multiplying and dividing integers and decimals. Using the four operations on negative numbers. Use the order of operations Use algebraic notation and terminology. Simplifying expressions.	Finding percentages of an amount with and without a calculator. Calculating a percentage change with and without a calculator. Value for money. Index rules with positive and negative indices. Simplifying expressions with indices. Simplifying algebraic fractions by cancelling common factors. Solving equations with two or more steps. Solving equations with unknown on both sides.	Convert between fractions, percentages and decimals and order them. Finding fractions and percentages of an amount with and without a calculator. Simple interest calculations. Calculating percentage change with and without a calculator. Finding original values in percentage calculations. Finding the percentage an amount has been changed by. Calculating expected results from repeated experiments. Calculating experimental probabilities.	Working with number. Using the four operations. BIDMAS. Fractions, decimals & percentage. Understanding expressions, formula and identities. Understand and interpret algebraic notation. Proof. Rearrange and substitute into formula including surds. Functions. Inverse and composite functions.	Calculate expected outcomes of equally likely events. Use appropriate language and the 0 - 1 probability scale. Enumerate sets and combinations of sets systematically, using tables, grids, Venn diagrams and tree diagrams. Infer properties of distributions by sampling. Interpret and construct tables, charts and diagrams. Diagrams for grouped discrete and continuous data.

		Constructing and solving equations. Solving equations with the unknown in the denominator.	Frequency trees. Using the four operations with standard form with and without a calculator. Solve inequalities with unknown on both sides. Solve double inequalities Construct and solve inequalities. Factorising quadratics of the form $x^2 + bx + c$ Factorising the difference of two squares. Solve quadratics of the form $x^2 + bx + c = 0$ Change the subject of a formula		Interpret, analyse and compare distributions using averages and measures of spread. Draw and interpret box plots. Use and interpret scatter diagrams and recognise correlation. Draw lines of best fit and use to make predictions, and to interpolate and extrapolate.
Autumn A Skills	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.
Autumn A Assessment opportunity	End of Unit assessments. Assessment for learning during the lesson. Half termly book checks.	End of Unit assessments. Assessment for learning during the lesson. Half termly book checks.	End of Unit assessments. Assessment for learning during the lesson. Half termly book checks.	End of Unit assessments. Assessment for learning during the lesson. Half termly book checks.	End of Unit assessments. Assessment for learning during the lesson. Half termly book checks.
Autumn B Topic	Algebra Measure Substitution Equations Time Measures	Sequences Ratio Term to term rules Position to term rules Ratio Scale diagrams	Constructions Circles Constructing bisectors and perpendicular lines Circles and cylinders	Number Linear graphs Solving equations and inequalities Ratio and proportion 1 Ratio and proportion 2 Indices and surds. Gradients and Straight lines Solving equations including quadratics. Multiplicative reasoning, working with ratio. Direct and inverse proportion.	Scale drawings and bearings Plans & Elevations Transformations including similarity & congruence Plans and elevations. Scale drawings and bearings. Transformations. Congruency. Similarity.

Autumn B Knowledge	<p>Substitution into a formula. Solving equations with one step and then more than one step. Converting units of time. Using clocks. Calculating with time. Using timetables and calendars. Estimating and measuring length, mass and capacity. Using appropriate Units</p>	<p>Term-to-Term rules for numerical sequences and sequences of patterns. Substituting into position-to-term rules Position-to-term rules for arithmetic sequences and sequences of patterns. Writing and simplifying ratios. Writing ratios in the form 1: n. Converting between ratios, fractions, and percentages Using equivalent ratios to find unknown amounts Sharing amounts in a given ratio. Draw and interpret scale diagrams</p>	<p>Constructing bisectors of angles. Construct perpendicular bisectors and lines. Find the arc length of sectors. Finding the area of sectors. Finding the volume and surface area of cylinders.</p>	<p>Powers, roots, surds and standard form. Approximate solutions using a graph. Solve simultaneous equations with two variables. Approximate solutions to equations using iteration. Plot straight-line graphs. Use the form $y = mx + c$ to identify parallel lines. Find the equation of the line through two given points, or one point with a given gradient. Form and solve an equation or two simultaneous equations. Use ratio notation, including reduction to simplest form. Express the division of a quantity into two parts as a ratio; apply to real contexts and problems. Understand and use proportion as equality of ratios. Relate ratios to fractions and to linear functions. Direct and inverse proportion. Gradient of a straight-line graph, graphs of direct and inverse proportion, iterative processes.</p>	<p>Use and apply scale drawings, maps and bearing Identify properties of 3D shapes. Construct and interpret plans and elevations. Describe movements as a vector. Translate, Rotate, Enlarge and Reflect shapes. Describe transformations. Identify, describe and construct congruent and similar shapes. Compare lengths, Areas and volume in similar shapes.</p>
Autumn B Skills	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.
Autumn B Assessment opportunity	<p>Termly AU assessment. End of Unit assessments. Assessment for learning during the lesson. Half termly book checks.</p>	<p>Termly AU assessment. End of Unit assessments. Assessment for learning during the lesson. Half termly book checks.</p>	<p>Termly AU assessment. End of Unit assessments. Assessment for learning during the lesson. Half termly book checks.</p>	<p>End of Unit assessments. Assessment for learning during the lesson. Half termly book checks. Calculator and Non-calculator Assessment on topics taught so far.</p>	<p>Trial assessment – Full exam series. End of Unit assessments. Assessment for learning during the lesson. Half termly book checks.</p>

Spring A Topic	Line & Shape properties Perimeter Area Co-ordinates and shape Factors multiples and primes Line and shape properties Symmetry Perimeter Area	Rounding Co-ordinates Area Circles Standard form Significant figures Co-ordinates and midpoints Area and units Area and circumference Converting between Standard form and ordinary numbers.	Rounding 3D shapes Pythagoras' theorem Ratio and proportion Error interval Representations of 3D shapes Pythagoras' theorem in 2D shapes Ratio Proportion word problems	Perimeter, area and volume Trigonometry Sequences Area and volume of 2 & 3 D shapes. Pythagoras and trigonometric ratio Working with sequences	Pythagoras' theorem Trigonometry Vectors Use Pythagoras' theorem Use trigonometric ratios in right angle triangles to calculate lengths and angles. Identify and use the exact trigonometric values. Apply the cosine rule and sine rule Vector notation
Spring A Knowledge	Line and shape properties. Symmetry. Finding the perimeter of 2D shapes. Finding areas using grids. Calculate the area of rectangles, triangles and compound shapes. Reading and plotting co-ordinates. Solving shape problems involving co-ordinates. Finding, factors, multiples and use the tests for divisibility. Calculating the HCF (Highest Common Factor) and LCM (Lowest Common Multiple).	Rounding integers and decimals using significant figures. Estimating calculations. Calculating midpoints. Solving shape properties involving co-ordinates. Find the area of parallelograms and trapeziums. Convert units of area. Identifying parts of a circle Finding the circumference and area of circles. Use standard form with positive and negative indices.	Finding error intervals. Truncating decimals. Finding error intervals for truncated numbers. Plans and elevations Pythagoras' theorem in 2D. Writing and simplifying ratios. Sharing amounts in a given ratio Solving direct and inverse proportion word problems. Currency conversion.	Area of triangles, parallelograms and trapezia. Volumes of cuboids and other prisms. Circle area and circumference, perimeters and areas of composite shapes. Surface area and volume of solids and composite solids. Arc lengths, angles and areas of sectors of circles. Pythagoras' theorem, trigonometric ratios, find angles and lengths in right-angled triangles. Exact values of common trig ratios. Generate terms of a linear sequence. Sequences of triangular, square, cube numbers, arithmetic progressions. Fibonacci-type, quadratic sequences and geometrical progressions.	Use and apply Pythagoras' theorem. Use and apply the trigonometric ratios for $\sin x$, $\cos x$ and $\tan x$. Know the trigonometric exact values for an angle of 0, 30, 45, 60 and 90 degrees. Use and find angles and lengths in general triangles in 2D and 3D shapes. Use and apply the cosine rule, the sin rule and $\text{Area} = \frac{1}{2} ab \sin C$. Understand and use vector notation. Calculations on column vectors. Use vectors to construct geometric proofs.
Spring A Skills	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.

Spring A Assessment opportunity	End of Unit assessments. Assessment for learning during the lesson. Half termly book checks.	End of Unit assessments. Assessment for learning during the lesson. Half termly book checks.	End of Unit assessments. Assessment for learning during the lesson. Half termly book checks.	End of Unit assessments. Assessment for learning during the lesson. Half termly book checks.	End of Unit assessments. Assessment for learning during the lesson. Half termly book checks.
Spring B Topic	Fractions Brackets Writing and comparing fractions. Adding and subtracting fractions. Factorise and expanding brackets.	Venn diagrams 3D shapes Surface area and volume Venn diagrams Factors, multiples and primes. Nets. Surface area. Volume.	Linear graphs Compound measures Motion-time graphs Equations of linear graphs. Speed and rates. Distance- time graphs.	Graphs Solve equations and inequalities Angle properties and constructions Gradients and lines. Non-linear graphs. Using graphs. Solve equations and inequalities. Constructions and congruency.	Pre- Calculus Gradients and rates of change Calculate and estimate the gradient of graphs and areas under the curve Interpret the gradient at a point on the curve and a straight line
Spring B Knowledge	Finding fractions of shapes. Constructing fractions. Simplify fractions. Ordering fractions. Converting between mixed numbers and improper fractions. Adding and subtracting fractions. Adding and subtracting mixed numbers. Expanding a single bracket and simplifying. Factorising into one bracket.	Construct and interpret Venn diagrams. Calculate a probability from a Venn diagram. Find the HCF and LCM using prime factor decomposition. Properties of 3D shapes Nets of 3D shapes. Calculate the surface area of a net. Find the surface area of cubes, cuboids, and prisms. Converting units of volume	Finding equations of straight line graphs. Interpreting equations of straight line graphs. Calculating with speed. Calculating with rates. Plotting and interpreting distance-time graphs. Calculating speed from distance time graphs. Plotting distance-time graphs using speeds.	Plot and interpret graphs of non-standard functions, solutions to problems involving distance, speed and acceleration. Graphs of cubic and reciprocal functions. Graphs of exponential functions and trigonometrical functions. Interpret, sketch and solve quadratic graphs. Solve linear and quadratic inequalities. Use conventional terms and notations for lines and angles. Construct given figures and loci. Angles at a point, on a straight line, opposite, alternate and corresponding. Angle sums in any polygon.	Calculate/estimate the gradient of graphs and areas under the curve. Interpret the gradient at a point on the curve and the gradient of a straight line. Draw and identify graphs of direct and inverse proportion.
Spring B Skills	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.
Spring B Assessment opportunity	Termly AU assessments End of Unit assessments. Assessment for learning during the lesson.	Termly AU assessments End of Unit assessments. Assessment for learning during the lesson.	Termly AU assessments End of Unit assessments. Assessment for learning during the lesson.	End of Unit assessments. Assessment for learning during the lesson. Half termly book checks.	Trial assessment – Full exam series. End of Unit assessments.

	Half termly book checks.	Half termly book checks.	Half termly book checks.		Assessment for learning during the lesson. Half termly book checks.
Summer A Topic	Angles Handling data & Statistical diagrams Proportion Angle calculations. Averages and range. Interpreting, and drawing tables and charts. Collecting and presenting data. Proportion problems.	Linear graphs Transformations Angles Statistical diagrams Inequalities Plotting graphs and finding equations. Transforming shapes. Finding unknown angles. Drawing and interpreting statistical diagrams. Linear inequalities.	Quadratic graphs Angles and bearings Transformations Similarity and congruence Handling data & statistical diagrams Plotting and interpreting quadratic graphs. Angles. Bearings. Transforming shapes. Similarity. Congruence. Collecting and presenting data. Understand similarity and congruency. Finding unknown sides in similar shapes. Congruent triangles. Construct triangles. Collecting and presenting data.	Measures Probability Convert between units of measure. Recap probability.	Au2 assessment review Circle theorems Au2 assessment review Circle theorems Graphs of circles Closing the gap curriculum
Summer A Knowledge	Measuring, Estimating, drawing and naming angles. Angles on a line, around a point, vertically opposite and in a triangle. Calculating the range, mean, mode and median. Interpret frequency tables and two-way tables. Draw and interpret tally charts, pictograms and bar charts. Collecting and recording data using tables. Presenting data making conclusions	Plotting horizontal and vertical lines. Plotting straight line graphs. Finding equations of straight line graphs. Complete and describe translations and reflections. Angles in quadrilaterals. Combining angle facts. Angles in parallel lines. Using the properties of quadrilaterals to find angles. Angles in polygons.	Plotting graphs of quadratic functions. Interpreting graphs of quadratic functions. Solving quadratic equations graphically. Combining angle facts. Angles in parallel lines. Using the properties of quadrilaterals to find angles. Angles in polygons. Measuring and drawing bearings. Calculating bearings. Rotation.	Use standard units of measure and related concepts; length, area, volume, capacity, mass, time and money. Change freely between related standard units. Use compound units such as speed, rates of pay, unit pricing, density and pressure. Use standard units of mass, length, time, money and other measures. Calculate expected outcomes of equally likely events.	Apply and prove the standard circle theorems concerning angles, radii, tangents and chords, and use them to prove related results. The equation of a circle with centre at the origin. The equation of a tangent to a circle at a given point. We will then move to a class specific Scheme of Learning based on the areas of weakness identified in the QLA

	Finding averages from frequency tables. Choosing appropriate averages and solving problems. Solving proportion problems.	Draw and interpret Pie charts, line graphs and stem- and – leaf diagrams. Finding averages from diagrams. Reading and drawing inequalities on number lines. Solving single inequalities.	Enlargement using positive scale factors. Mixed transformations. Types of data. Comparing populations using diagrams. Choosing suitable averages and solving problems.	Use appropriate language and the 0 - 1 probability scale. Enumerate sets and combinations of sets systematically, using tables, grids, Venn diagrams and tree diagrams.	
Summer A Skills	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.
Summer A Assessment opportunity	End of Unit assessments. Assessment for learning during the lesson. Half termly book checks.	End of Unit assessments. Assessment for learning during the lesson. Half termly book checks.	End of Unit assessments. Assessment for learning during the lesson. Half termly book checks.	End of topic assessments. Assessment for learning during the lesson. Half termly book checks.	End of topic mini assessments – Progress measured against Au2. Assessment for learning during the lesson. Half termly book checks.
Summer B Topic	Fractions, Decimals and Percentages Probability Multiplying & dividing fractions Fractions of an amount Fractions, decimals and percentages Theoretical Probability	Brackets Algebraic fractions Recurring decimals Double brackets Fractions review Algebraic fractions Fractions and recurring decimals	Handling data & statistical diagrams Vectors Scatter graphs Grouped data Column vectors	Statistical diagrams and measures of averages and spread. Transformations Construct and interpret statistical diagrams. Scatter diagrams.	Au2 assessment review Adapted curriculum from Au2
Summer B Knowledge	Reciprocals. Multiplying and dividing fractions. Multiplying and dividing mixed numbers. Fractions of an amount with and without a calculator. Converting between fractions, decimals and percentages Ordering fractions, decimals and percentages.	Expanding double brackets Calculating with fractions. Simplifying algebraic fractions by factorising. Adding and subtracting algebraic fractions. Use the recurring decimal notation. Converting fractions to recurring decimals.	Plot and interpret scatter graphs. Using lines of best fit. Interpreting frequency tables with grouped data. Finding averages from grouped data. Drawing and interpreting frequency polygons. Understanding column vectors.	Infer properties of distributions by sampling. Interpret and construct tables, charts and diagrams. Diagrams for grouped discrete and continuous data. Interpret, analyse and compare distributions using averages and measures of spread. Draw and interpret box plots.	Class specific Scheme of Learning based on the areas of weakness identified in the QLA

	<p>Writing numbers as percentages of other numbers.</p> <p>Using probability phrases.</p> <p>Writing probabilities as fractions, decimals and percentages.</p> <p>Probability of mutually exclusive events.</p> <p>Sample space diagrams.</p>		<p>Adding, subtracting, and multiplying column vectors.</p> <p>Identifying parallel vectors.</p>	<p>Use and interpret scatter diagrams and recognise correlation.</p> <p>Draw lines of best fit and use to make predictions, and to interpolate and extrapolate.</p> <p>Describe movements as a vector.</p> <p>Translate, Rotate, Enlarge and Reflect shapes.</p> <p>Describe transformations.</p>	
Summer B Skills	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.
Summer B Assessment opportunity	<p>Termly AU assessments</p> <p>End of Unit assessments.</p> <p>Assessment for learning during the lesson.</p> <p>Half termly book checks.</p>	<p>Termly AU assessments</p> <p>End of Unit assessments.</p> <p>Assessment for learning during the lesson.</p> <p>Half termly book checks.</p>	<p>Termly AU assessments</p> <p>End of Unit assessments.</p> <p>Assessment for learning during the lesson.</p> <p>Half termly book checks.</p>	<p>End of Unit assessments.</p> <p>Assessment for learning during the lesson.</p> <p>Half termly book checks.</p> <p>Full series of examinations i.e., paper 1, 2 and 3.</p>	<p>End of topic mini assessments – Progress measured against Au2.</p> <p>Assessment for learning during the lesson.</p> <p>Half termly book checks.</p> <p>GCSE Examination</p>