

## LONG TERM CURRICULUM PLANNING OVERVIEW:

Mathematics					
	YEAR 7	YEAR 8	YEAR 9	YEAR 10	YEAR 11
<b>Autumn A Topic</b>	<b>Number</b> <b>Algebra</b> Number sense Four operations Negative numbers Order of operations Expressions	<b>Percentage</b> <b>Money</b> <b>Indices</b> <b>Equations</b> Percentage of amounts Percentage change Calculating with money Index laws Solving equations	<b>Fractions and decimals</b> <b>Probability</b> <b>Standard form</b> <b>Inequalities</b> <b>Quadratic equations</b> Fraction decimal and percentage review. Percentage change. Theoretical and experimental probability. Calculations with standard form. Factorising and solving quadratic. Re-arranging formulae.	<b>Number</b> <b>Algebraic manipulation</b> Operation with number. Simplify and manipulate algebraic expression.	<b>Probability</b> <b>Statistical diagrams and measures of averages and spread.</b> Recap probability. Construct and interpret statistical diagrams. Scatter diagrams.
<b>Autumn A Knowledge</b>	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. 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.
<b>Autumn A Skills</b>	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.
<b>Autumn A Assessment opportunity</b>	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.
<b>Autumn B Topic</b>	<b>Algebra Measure</b> Substitution Equations Time Measures	<b>Sequences Ratio</b> Term to term rules Position to term rules Ratio Scale diagrams	<b>Constructions Circles</b> Constructing bisectors and perpendicular lines Circles and cylinders	<b>Number 2 Linear graphs</b> Fractions, decimals & percentage. Indices and surds. Linear graphs Gradients and Straight lines	<b>Scale drawings and bearings Plans &amp; Elevations Transformations including similarity &amp; congruence</b> Plans and elevations. Scale drawings and bearings. Transformations. Congruency. Similarity.
<b>Autumn B Knowledge</b>	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.	Term-to-Term rules for numerical sequences and sequences of patterns. Substituting into position-to-term rules	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.	Fractions, decimals & percentage. Powers, roots, surds and standard form. Plot straight-line graphs. Use the form $y = mx + c$ to identify parallel lines.	Use and apply scale drawings, maps and bearing Identify properties of 3D shapes. Construct and interpret plans and elevations. Describe movements as a vector.

	Estimating and measuring length, mass and capacity. Using appropriate Units	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		Find the equation of the line through two given points, or one point with a given gradient.	Translate, Rotate, Enlarge and Reflect shapes. Describe transformations. Identify, describe and construct congruent and similar shapes. Compare lengths, Areas and volume in similar shapes.
<b>Autumn B Skills</b>	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.
<b>Autumn B Assessment opportunity</b>	Termly AU assessment. End of Unit assessments. Assessment for learning during the lesson. Half termly book checks.	Termly AU assessment. End of Unit assessments. Assessment for learning during the lesson. Half termly book checks.	Termly AU assessment. 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. Calculator and Non-calculator Assessment on topics taught so far.	Trial assessment – Full exam series. End of Unit assessments. Assessment for learning during the lesson. Half termly book checks.
<b>Spring A Topic</b>	<b>Line &amp; Shape properties</b> <b>Perimeter</b> <b>Area</b> <b>Co-ordinates and shape</b> <b>Factors multiples and primes</b> Line and shape properties Symmetry Perimeter Area	<b>Rounding</b> <b>Co-ordinates</b> <b>Area</b> <b>Circles</b> <b>Standard form</b> Significant figures Co-ordinates and midpoints Area and units Area and circumference Converting between Standard form and ordinary numbers.	<b>Rounding</b> <b>3D shapes</b> <b>Pythagoras' theorem</b> <b>Ratio and proportion</b> Error interval Representations of 3D shapes Pythagoras' theorem in 2D shapes Ratio Proportion word problems	<b>Solving equations and inequalities</b> <b>Solving equations</b> Simultaneous equations Forming equations Expand and factorise binomials	<b>Pythagoras' theorem</b> <b>Trigonometry</b> <b>Vectors</b> 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
<b>Spring A Knowledge</b>	Line and shape properties. Symmetry.	Rounding integers and decimals using significant figures. Estimating calculations.	Finding error intervals. Truncating decimals.	Solving equations including quadratics.	Use and apply Pythagoras' theorem.

	<p>Finding the perimeter of 2D shapes.</p> <p>Finding areas using grids.</p> <p>Calculate the area of rectangles, triangles and compound shapes.</p> <p>Reading and plotting co-ordinates.</p> <p>Solving shape problems involving co-ordinates.</p> <p>Finding, factors, multiples and use the tests for divisibility.</p> <p>Calculating the HCF (Highest Common Factor) and LCM (Lowest Common Multiple).</p>	<p>Calculating midpoints.</p> <p>Solving shape properties involving co-ordinates.</p> <p>Find the area of parallelograms and trapeziums.</p> <p>Convert units of area.</p> <p>Identifying parts of a circle</p> <p>Finding the circumference and area of circles.</p> <p>Use standard form with positive and negative indices.</p>	<p>Finding error intervals for truncated numbers.</p> <p>Plans and elevations</p> <p>Pythagoras' theorem in 2D.</p> <p>Writing and simplifying ratios.</p> <p>Sharing amounts in a given ratio</p> <p>Solving direct and inverse proportion word problems.</p> <p>Currency conversion.</p>	<p>Approximate solutions using a graph.</p> <p>Solve simultaneous equations with two variables.</p> <p>Form and solve an equation or two simultaneous equations.</p>	<p>Use and apply the trigonometric ratios for <math>\sin x</math>, <math>\cos x</math> and <math>\tan x</math>.</p> <p>Percentage</p> <p>Know the trigonometric exact values for an angle of 0, 30, 45, 60 and 90 degrees.</p> <p>Use and find angles and lengths in general triangles in 2D and 3D shapes.</p> <p>Use and apply the cosine rule, the sin rule and <math>\text{Area} = \frac{1}{2} ab \sin C</math>.</p> <p>Understand and use vector notation.</p> <p>Calculations on column vectors.</p> <p>Use vectors to construct geometric proofs.</p>
<b>Spring A Skills</b>	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.
<b>Spring A Assessment opportunity</b>	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.
<b>Spring B Topic</b>	<p><b>Fractions</b></p> <p><b>Brackets</b></p> <p>Writing and comparing fractions.</p> <p>Adding and subtracting fractions.</p> <p>Factorise and expanding brackets.</p>	<p><b>Venn diagrams</b></p> <p><b>3D shapes</b></p> <p><b>Surface area and volume</b></p> <p>Venn diagrams</p> <p>Factors, multiples and primes.</p> <p>Nets.</p> <p>Surface area.</p> <p>Volume.</p>	<p><b>Linear graphs</b></p> <p><b>Compound measures</b></p> <p><b>Motion-time graphs</b></p> <p>Equations of linear graphs.</p> <p>Speed and rates.</p> <p>Distance- time graphs.</p>	<p><b>Algebraic manipulation</b></p> <p><b>Iteration</b></p> <p><b>Percentages</b></p> <p>Approximate solutions to equations using iteration.</p> <p>Percentage change. Compound interest. Growth and decay</p>	<p><b>Pre- Calculus</b></p> <p><b>Gradients and rates of change</b></p> <p>Calculate and estimate the gradient of graphs and areas under the curve</p> <p>Interpret the gradient at a point on the curve and a straight line</p>
<b>Spring B Knowledge</b>	<p>Finding fractions of shapes.</p> <p>Constructing fractions.</p> <p>Simplify fractions.</p> <p>Ordering fractions.</p> <p>Converting between mixed numbers and improper fractions.</p> <p>Adding and subtracting fractions.</p>	<p>Construct and interpret Venn diagrams.</p> <p>Calculate a probability from a Venn diagram.</p> <p>Find the HCF and LCM using prime factor decomposition.</p> <p>Properties of 3D shapes</p>	<p>Finding equations of straight line graphs.</p> <p>Interpreting equations of straight line graphs.</p> <p>Calculating with speed.</p> <p>Calculating with rates.</p>	<p>Surface area and volume of solids and composite solids.</p> <p>Right angled trigonometry.</p> <p>Introducing sine, cosine and tangent. Finding unknown side and angle.</p> <p>Exact trigonometric ratios.</p>	<p>Calculate/estimate the gradient of graphs and areas under the curve.</p> <p>Interpret the gradient at a point on the curve and the gradient of a straight line.</p>

	Adding and subtracting mixed numbers. Expanding a single bracket and simplifying. Factorising into one bracket.	Nets of 3D shapes. Calculate the surface area of a net. Find the surface area of cubes, cuboids, and prisms. Converting units of volume	Plotting and interpreting distance-time graphs. Calculating speed from distance time graphs. Plotting distance-time graphs using speeds.	Angles of elevation and depression.	Draw and identify graphs of direct and inverse proportion.
<b>Spring B Skills</b>	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.
<b>Spring B Assessment opportunity</b>	Termly AU assessments End of Unit assessments. Assessment for learning during the lesson. Half termly book checks.	Termly AU assessments End of Unit assessments. Assessment for learning during the lesson. Half termly book checks.	Termly AU assessments 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.	Trial assessment – Full exam series. End of Unit assessments. Assessment for learning during the lesson. Half termly book checks.
<b>Summer A Topic</b>	<b>Angles</b> <b>Handling data &amp; Statistical diagrams</b> <b>Proportion</b> Angle calculations. Averages and range. Interpreting, and drawing tables and charts. Collecting and presenting data. Proportion problems.	<b>Linear graphs</b> <b>Transformations</b> <b>Angles</b> <b>Statistical diagrams</b> <b>Inequalities</b> Plotting graphs and finding equations. Transforming shapes. Finding unknown angles. Drawing and interpreting statistical diagrams. Linear inequalities.	<b>Quadratic graphs</b> <b>Angles and bearings</b> <b>Transformations</b> <b>Similarity and congruence</b> <b>Handling data &amp; statistical diagrams</b> 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.	<b>Surface area and volume</b> <b>Right angled trigonometry</b> Surface area and volume of solids and composite solids. Right angled trigonometry. Introducing sine, cosine and tangent. Exact trigonometric ratios. Angles of elevation and depression.	<b>Au2 assessment review</b> <b>Circle theorems</b> <b>Au2 assessment review</b> Circle theorems Graphs of circles Closing the gap curriculum
<b>Summer A Knowledge</b>	Measuring, Estimating, drawing and naming angles.	Plotting horizontal and vertical lines. Plotting straight line graphs.	Plotting graphs of quadratic functions.	Trigonometric ratios, find angles and lengths in right-angled triangles.	Apply and prove the standard circle theorems concerning angles, radii, tangents and chords,

	<p>Angles on a line, around a point, vertically opposite and in a triangle.</p> <p>Calculating the range, mean, mode and median.</p> <p>Interpret frequency tables and two-way tables.</p> <p>Draw and interpret tally charts, pictograms and bar charts.</p> <p>Collecting and recording data using tables.</p> <p>Presenting data making conclusions</p> <p>Finding averages from frequency tables.</p> <p>Choosing appropriate averages and solving problems.</p> <p>Solving proportion problems.</p>	<p>Finding equations of straight line graphs.</p> <p>Complete and describe translations and reflections.</p> <p>Angles in quadrilaterals.</p> <p>Combining angle facts.</p> <p>Angles in parallel lines.</p> <p>Using the properties of quadrilaterals to find angles.</p> <p>Angles in polygons.</p> <p>Draw and interpret Pie charts, line graphs and stem- and – leaf diagrams.</p> <p>Finding averages from diagrams.</p> <p>Reading and drawing inequalities on number lines.</p> <p>Solving single inequalities.</p>	<p>Interpreting graphs of quadratic functions.</p> <p>Solving quadratic equations graphically.</p> <p>Combining angle facts.</p> <p>Angles in parallel lines.</p> <p>Using the properties of quadrilaterals to find angles.</p> <p>Angles in polygons.</p> <p>Measuring and drawing bearings.</p> <p>Calculating bearings.</p> <p>Rotation.</p> <p>Enlargement using positive scale factors.</p> <p>Mixed transformations.</p> <p>Types of data.</p> <p>Comparing populations using diagrams.</p> <p>Choosing suitable averages and solving problems.</p>	<p>Exact values of common trigonometric ratios.</p> <p>Applying trigonometry to finding angles of depression and elevation</p>	<p>and use them to prove related results.</p> <p>The equation of a circle with centre at the origin.</p> <p>The equation of a tangent to a circle at a given point.</p> <p>We will then move to a class specific Scheme of Learning based on the areas of weakness identified in the QLA</p>
<b>Summer A Skills</b>	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.
<b>Summer A Assessment opportunity</b>	<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>End of Unit assessments.</p> <p>Assessment for learning during the lesson.</p> <p>Half termly book checks.</p>	<p>End of topic assessments.</p> <p>Assessment for learning during the lesson.</p> <p>Half termly book checks.</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>
<b>Summer B Topic</b>	<p><b>Fractions, Decimals and Percentages</b></p> <p><b>Probability</b></p> <p>Multiplying &amp; dividing fractions</p> <p>Fractions of an amount</p> <p>Fractions, decimals and percentages</p> <p>Theoretical Probability</p>	<p><b>Brackets</b></p> <p><b>Algebraic fractions</b></p> <p><b>Recurring decimals</b></p> <p>Double brackets</p> <p>Fractions review</p> <p>Algebraic fractions</p> <p>Fractions and recurring decimals</p>	<p><b>Handling data &amp; statistical diagrams</b></p> <p><b>Vectors</b></p> <p>Scatter graphs</p> <p>Grouped data</p> <p>Column vectors</p>	<p><b>Angle properties and constructions</b></p> <p><b>Real life graphs</b></p> <p><b>Venn Diagrams</b></p> <p><b>Tree diagrams</b></p> <p><b>Compound measure</b></p> <p>Angle calculations and notation</p> <p>Constructions and congruency.</p> <p>Probability</p> <p>Compound units</p>	<p><b>Au2 assessment review</b></p> <p>Adapted curriculum from Au2</p>

<b>Summer B Knowledge</b>	<p>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.          Writing numbers as percentages of other numbers.          Using probability phrases.          Writing probabilities as fractions, decimals and percentages.          Probability of mutually exclusive events.          Sample space diagrams.</p>	<p>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.</p>	<p>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.          Adding, subtracting, and multiplying column vectors.          Identifying parallel vectors.</p>	<p>Use conventional terms and notations for lines and angles.          Construct given figures and loci.          Plotting real life graphs.          Venn diagrams including set notation.          Tree diagrams for independent and dependant events.          Use compound units such as speed, rates of pay, unit pricing, density and pressure.</p>	<p>Class specific Scheme of Learning based on the areas of weakness identified in the QLA</p>
<b>Summer B Skills</b>	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.	Fluency, Problem Solving, Reasoning.
<b>Summer B Assessment opportunity</b>	<p>Termly AU assessments          End of Unit assessments.          Assessment for learning during the lesson.          Half termly book checks.</p>	<p>Termly AU assessments          End of Unit assessments.          Assessment for learning during the lesson.          Half termly book checks.</p>	<p>Termly AU assessments          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.          Full series of examinations i.e., paper 1, 2 and 3.</p>	<p>End of topic mini assessments – Progress measured against Au2.          Assessment for learning during the lesson.          Half termly book checks.          GCSE Examination</p>