

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.	Percentage change Volume and Surface area Simultaneous equations Formulae Compound interest Growth and decay Surface area Volume Simultaneous equations Re-arranging the subject of a formula	<i>The Year 11 SoW is split into a Higher and Foundation pathway.</i> Foundation Indices Brackets Handling data and statistical diagrams. Primes, factors and multiples. Fractions Expressions Equations Index laws and simplifying expressions Expand and factorise. Grouped data including averages. Draw and interpret graphs and charts Prime factor decomposition. HCF and LCM Ordering fractions and the four operations with fractions. Simplifying expressions. Laws of indices. Solving equations. Solving simultaneous equations. Higher Indices

					Recurring decimals. Brackets Surds Algebraic fractions Equations Recurring decimals Expand and factorise brackets Using surds Simplify algebraic fractions. Four operations with algebraic fractions. Quadratic equations Quadratic simultaneous equations Indices with fractional and negative powers.
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. Constructing and solving equations. Solving equations with the unknown in the denominator.	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. Frequency trees. Using the four operations with standard form with and without a calculator. Solve inequalities with unknown on both sides. Solve double inequalities	Compound interest calculations Growth and decay Finding the surface area of pyramids, cones, spheres, frustums and compound shapes Finding the volume of pyramids, cones, spheres and frustums. Finding the volume of composite shapes Solving simultaneous equations using elimination, substitution and graphically. Constructing and solving simultaneous equations Re-arranging the subject of a formula with 2 or more steps Re-arranging the subject of a formula where the subject appears twice	<u>Foundation</u> Using the laws of indices with positive and negative indices. Simplifying expressions using index laws. Expand double brackets Factorise quadratics of the form $x^2 + bx + c$. Factorise using the difference of two squares. Solve equations of the form $x^2 + bx + c = 0$. Interpreting frequency tables with grouped data including averages. Draw and interpret line graphs, scatter graphs and Pie charts. Use Prime factor decomposition and use this to calculate the HCF and LCM. Order fractions and mixed numbers. Add, subtract, multiply and divide mixed numbers.

			Construct and solve inequalities. Factorising quadratics of the form $x^2 + bx + c$ Factorising the difference of two squares. Solve quadratics of the form $x^2 + bx + c = 0$		Simplify expressions using the laws of indices. Simplify algebraic fractions. Solve equations with two or more steps including with brackets and variables on both sides. Form and solve equations Factorise and solve quadratics. Higher Estimating roots and powers. Indices with fractional and negative powers. Converting between fractions and recurring decimals Expand triple brackets Completing the square Factorise quadratics $ax^2 + bx + c$. Solve quadratics where $ax^2 + bx + c = 0$ The four operations with Surds. Simplifying and expanding brackets with surds. Rationalise the denominator. Simplify algebraic fractions The four operations with algebraic fractions. Solve quadratic equations using factorisation, completing the square and the quadratic formula. Solve simultaneous equations with quadratics including graphically.
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	Half termly Unit assessments.	Half termly Unit assessments.	Half termly Unit assessments.	Half termly Unit assessments.	Half termly Unit assessments.

Assessment opportunity	Assessment for learning during the lesson. Half termly book checks. Fluency check	Assessment for learning during the lesson. Half termly book checks. Fluency check	Assessment for learning during the lesson. Half termly book checks. Fluency check	Assessment for learning during the lesson. Half termly book checks. Fluency check	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	Formula Constructions Circles Re-arranging formulae. Constructing bisectors and perpendicular lines Circles and cylinders	Right angled trigonometry Constructions Equations of linear graphs Real life graphs Right angled trigonometry. Constructions and Loci. Plot and interpret real life graphs.	Foundation Simultaneous equations Angles Right angled triangles Solve simultaneous equations Angle facts. Angles on Parallel lines Angles in polygons. Pythagoras' theorem Trigonometry. Higher Pythagoras' theorem and trigonometry. Circle geometry Trigonometric graphs and ratios Non-right-angled trigonometry 3D Pythagoras and trigonometry. Circle theorems.
Autumn B Knowledge	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	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.	Change the subject of a formula 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.	Rearranging a formulae Trigonometric ratios, find angles and lengths in right-angled triangles. Exact values of common trigonometric ratios. Applying trigonometry to finding angles of depression and elevation. Constructing bisectors of angles. Constructing perpendicular bisectors and lines. Finding the equation of a straight line from its gradient and a point. Finding the equation of a straight line from two points on a line.	Foundation Solve simultaneous equations using elimination, substitution and graphically. Form and solve simultaneous equations. Combine angle facts Angles on parallel lines Angles in polygons Pythagoras' theorem in 2D shapes Calculating lengths and angles using Trigonometry. Exact values of trigonometric ratios. Calculate bearings.

		Draw and interpret scale diagrams		Equations of parallel and perpendicular lines. Plot and interpret real life graphs Find equations of linear real-life graphs. Sketch water flows.	Calculate bearings with trigonometry. Higher Using the exact values of trigonometric ratios Graphs of trigonometric functions The sine, cosine and area rule. Using Pythagoras' theorem and trigonometry in 3D. Apply and prove the standard circle theorems concerning angles, radii, tangents and chords, and use them to prove related results.
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	Half termly Unit assessments. Assessment for learning during the lesson. Half termly book checks. Termly assessment	Half termly Unit assessments. Assessment for learning during the lesson. Half termly book checks. Termly assessment	Half termly Unit assessments. Assessment for learning during the lesson. Half termly book checks. Termly assessment	Half termly Unit assessments. Assessment for learning during the lesson. Half termly book checks. Termly assessment	Half termly Unit assessments. Assessment for learning during the lesson. Half termly book checks. Full exam series which includes Paper 1, Paper2 and Paper 3.
Spring A Topic	Line & Shape properties Brackets Perimeter Area Co-ordinates and shape Line and shape properties Symmetry Factorise and expanding brackets 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	Set notation Tree Diagrams Compound measures Ratio Venn diagrams and worded set notation. Independent and dependent events. Density and pressure. Working with ratios and algebra	Foundation Surface area Volume Probability Inequalities Calculate the surface area Calculate the Volume Theoretical and experimental Probability. Solve inequalities Higher Statistical diagrams Probability

					Inequalities Functions Histograms Conditional probability Linear and quadratic inequalities. Substituting into a function. Finding composite and inverse functions
Spring A Knowledge	Line and shape properties. Symmetry. Expanding a single bracket and simplifying. Factorising into one bracket. 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.	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.	Draw and interpret Venn diagrams. Use set notation that will be in a worded format. Tree diagrams for independent and dependent events. Calculating with pressure and density. Combining ratios Calculating with ratios and algebra Changing ratios.	Foundation Calculate the surface area of cuboids, prisms, pyramids and spheres. Calculate the volume of cuboids, prisms, pyramids and spheres. Probability of mutually exclusive events Sample space diagrams Expected results from repeated experiments. Probability from Venn diagrams. Tree diagrams Experimental probability. Write inequalities and represent them on a number line. Solve inequalities including double inequalities. Form and solve inequalities. Higher Draw and interpret histograms Calculate averages from Histograms. Conditional probability from tables, Venn diagrams and tree diagrams.

					Use the conditional probability formula. Use the product rule for counting. Graphs of linear inequalities. Solve quadratic inequalities. Substituting into functions including composite functions. Finding composite and inverse functions.
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	Half termly Unit assessments. Assessment for learning during the lesson. Half termly book checks. Fluency check	Half termly Unit assessments. Assessment for learning during the lesson. Half termly book checks. Fluency check	Half termly Unit assessments. Assessment for learning during the lesson. Half termly book checks. Fluency check	Half termly Unit assessments. Assessment for learning during the lesson. Half termly book checks. Fluency check	Half termly Unit assessments. Assessment for learning during the lesson. Half termly book checks.
Spring B Topic	Factors multiples and primes Fractions Factors and Multiples Prime numbers HCF and LCM Writing and comparing fractions. Adding and subtracting fractions.	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.	<i>The Year 10 SoW now splits into a Higher and Foundation pathway.</i> Foundation Graphs Sequences Velocity time graphs Cubic, reciprocal and exponential graphs. Arithmetic and geometric sequences – Foundation Higher Graphs Sequences Sampling Proportion Velocity time graphs Cubic, reciprocal and exponential graphs. Quadratic, Geometric and special sequences.	Foundation Vectors Percentages Linear inequalities. Vector problems Percentage change Calculating with compound measures. Working with Ratio and proportion. Standard form Higher Transformations Iterative formula Algebraic proof Similarity Transforming graphs Iterative formula Writing algebraic proofs. Area and volume of similar shapes.

				Sampling. Direct and inverse proportion	
Spring B Knowledge	Finding, factors, multiples and use the tests for divisibility. Calculating the HCF (Highest Common Factor) and LCM (Lowest Common Multiple). 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.	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.	Foundation Plotting velocity-time graphs Calculating acceleration from velocity time graphs. Graphs of cubic, reciprocal and exponential functions. Position to term rules. Higher Plotting velocity-time graphs Calculating acceleration from velocity time graphs. Graphs of cubic, reciprocal and exponential functions. Position to term rules for quadratic and geometric sequences. Special sequences Sampling and bias. Capture-Recapture. Construct direct and inverse proportion equations. Graphs of direct and inverse proportion.	Foundation Solve inequalities with unknowns on both sides Solving double inequalities Construct and solve inequalities. Add, subtract and multiply column vectors. Identifying parallel vectors. Solve geometric problems using vectors. Percentage change with a calculator. Finding original amounts in percentage calculations. Finding the percentage an amount has changed by. Compound interest. Growth and decay. Calculating with speed, rates, density and pressure. Combining ratios. Calculating with ratio and algebra. Changing ratios. Add, subtract, multiply and divide using standard form. Standard form with a calculator. Higher Translate, reflect and transform graphs. Identify a solution to an equation by using iterative methods. Writing algebraic proofs. Finding the perimeter, area, surface area and volume of similar shapes.

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	Half termly Unit assessments. Assessment for learning during the lesson. Half termly book checks. Termly assessment	Half termly Unit assessments. Assessment for learning during the lesson. Half termly book checks. Termly assessment	Half termly Unit assessments. Assessment for learning during the lesson. Half termly book checks. Termly assessment	Half termly Unit assessments. Assessment for learning during the lesson. Half termly book checks. Termly assessment	Half termly Unit assessments. Assessment for learning during the lesson. Half termly book checks. Full exam series which includes Paper 1, Paper2 and Paper 3.
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.	Foundation Sampling Proportion Transformations Sampling Direct and inverse proportion Combining transformations Higher Transformations Rounding Indices Enlargement Combining transformations Bounds Indices with fractional and negative powers	Foundation Compound measures Ratio and proportion Standard form Sequences Linear graphs Speed, Density and pressure. Sharing in a ratio Converting between standard form. Four operations with Standard form. Position to term rules for arithmetic, geometric and special sequences. Plot straight line graphs. Finding the equation of a straight line Using and applying $y=mx+c$ Higher Geometric proofs. Non-Linear graphs. Vector proofs Writing geometric proofs. Calculating areas under a graph and gradients of tangents. Equations of circles and tangents.
Summer A Knowledge	Measuring, Estimating, drawing and naming angles.	Plotting horizontal and vertical lines.	Plotting graphs of quadratic functions.	Foundation Sampling and bias.	Foundation

	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 Finding averages from frequency tables. Choosing appropriate averages and solving problems. Solving proportion problems.	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. 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.	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. Enlargement using positive scale factors. Mixed transformations. Types of data. Comparing populations using diagrams. Choosing suitable averages and solving problems.	Interpreting direct and inverse proportion equations. Graphs of direct and inverse proportion Combine transformations such as enlargement with a positive scale factor, rotation, reflection and translation. Higher Combine transformations such as enlargement with a positive and negative scale factor, rotation, reflection and translation. Find bounds for calculations. Estimating roots and powers. Indices with fractional and negative powers.	Complete calculations involving, speed, density and time. Sharing in a ratio. Calculating a missing part given a ratio. Combined ratios Convert between ordinary numbers and standard form and vice versa. Multiply, divide, add and subtract numbers in standard form. Solve standard form problems in context. Calculate missing terms in arithmetic sequences, geometric sequences and special sequences. Calculate the nth term of a sequence. Plot straight line graphs. Interpret straight line graphs. Find the equation of a straight line given a graph, a co-ordinate and the gradient, or 2 co-ordinates. Equations of parallel lines. Higher Solve geometric problems and proofs with vectors. Solve geometric proofs with, angle facts, similarity and congruence. Prove the circle theorems. Estimating gradients of non-linear graphs using tangents. Calculate distances from velocity time graphs Estimating areas under non-linear graphs Equations of circles and tangents.
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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	Half termly Unit assessments. Assessment for learning during the lesson. Half termly book checks. Fluency check	Half termly Unit assessments. Assessment for learning during the lesson. Half termly book checks. Fluency check	Half termly Unit assessments. Assessment for learning during the lesson. Half termly book checks. Fluency check	Half termly Unit assessments. Assessment for learning during the lesson. Half termly book checks. Fluency check	Closing the gap assessment. Assessment for learning during the lesson. GCSE examination.
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	Foundation Rounding Indices Brackets Handling data and statistical diagrams Sampling Error intervals Index laws and simplifying expressions Expand and factorise. Grouped data including averages. Draw and interpret line graphs. Higher Recurring decimals. Brackets Handling data and statistical diagrams Recurring decimals Expand and factorise brackets Cumulative frequency graphs. Box plots Compare populations using box plots and cumulative frequency	Au2 assessment review Adapted curriculum from Au2
Summer B Knowledge	Reciprocals. Multiplying and dividing fractions. Multiplying and dividing mixed numbers.	Expanding double brackets Calculating with fractions. Simplifying algebraic fractions by factorising.	Plot and interpret scatter graphs. Using lines of best fit. Interpreting frequency tables with grouped data.	Foundation Finding error intervals Using the laws of indices with positive and negative indices.	For both Higher and foundation, the Scheme of Learning will be based on class specific areas of weakness identified in the QLA.

	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.	Adding and subtracting algebraic fractions. Use the recurring decimal notation. Converting fractions to recurring decimals.	Finding averages from grouped data. Drawing and interpreting frequency polygons. Understanding column vectors. Adding, subtracting, and multiplying column vectors. Identifying parallel vectors.	Simplifying expressions using index laws. Expand double brackets Factorise quadratics of the form $x^2 + bx + c$. Factorise using the difference of two squares. Solve equations of the form $x^2 + bx + c = 0$. Interpreting frequency tables with grouped data including averages. Draw and interpret line graphs. Higher Converting between fractions and recurring decimals Expand triple brackets Completing the square Factorise quadratics $ax^2 + bx + c$. Solve quadratics where $ax^2 + bx + c = 0$ Draw and interpret cumulative frequency graphs. Draw and interpret Box plots Compare populations using box plots and cumulative frequency	
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	Half termly Unit assessments. Assessment for learning during the lesson. Half termly book checks. Termly assessment	Half termly Unit assessments. Assessment for learning during the lesson. Half termly book checks. Termly assessment	Half termly Unit assessments. Assessment for learning during the lesson. Half termly book checks. Termly assessment	Half termly Unit assessments. Assessment for learning during the lesson. Half termly book checks. Mock examination which includes Paper 1, Paper 2 and Paper 3.	Closing the gap assessment. Assessment for learning during the lesson. GCSE examination.