Curriculum overview for Year 8 (Higher Term 1)

Term	Autumn 1					Autumn 2				
Topic	**Venn Diagrams**	**Number System Powers**	**Standard Form & Rounding**	**3D Shapes**	**TERRible Transformations & Scale Drawing**	**Probability**	**Algebraic Proficiency**	**Data Presentation**	**Pythagoras' Theorem**	**Fraction, Decimal, Percentage (FDP)**
Knowledge	Read, draw, use Venn diagram & set notation. Solve problems. Probability. KO 16,33	Rules for x / ÷ powers of the same base. Proof of rules. Order of operations (BODMAS/ BIDMAS). Product of Primes KO 27,20	Round, truncate, to decimal places. Standard form. Near miss method. Significant figures. Estimate by rounding. Estimation to check magnitude in calculations. KO 13, 31	Drawing 3D shapes on square grids. Isometric grids. KO 19	Reflect using diagonal mirror lines. Rotate using COR. Translate using column vectors. Enlarge using fractional enlargements. Scale drawings, 1:n or n:1 scales. KO 25, 15, 21	Basic probability. Mutually exclusive and exhaustive events. Use of Frequency Trees for probability problems. KO 11	Collect terms. Form and solve equations. Factorise into a bracket. Substitute in scientific formulae. Change the subject. KO 1, 30, 36	Types of data. Methods of collecting data. Grouping data. Stem & Leaf diagram. Percentage bar chart. Scatter graph. KO 6,39	Calculating with square numbers. Pythagoras' Theorem in 2D. KO 14, 49	Equivalence. Conversion methods. Dot notation for recurring decimals. KO 32, 18
Skills	Use/ understand symbolism; "read" diagrams.	Rules for powers and rounding. Arithmetic and use of calculator. Order of operations. Multiples of 10 using powers.		Drawing, use of equipment (ruler, tracing paper), distinguish between different transformations. ¼, ½, ¾ turn. Turn clockwise/anti-clockwise. Ratios 1:n and n:1. Conversion factors (lengths)		Use tables & listing to record & organise information; apply fractions; read diagrams & tables. Probability conventions.	Algebraic conventions. BODMAS/ BIDMAS rules	Select, draw & read charts for a purpose. % calculations. Inequality symbolism. Plot co-ordinates.	Memorise, & adhere to, models and algorithms. Use calculator for squares & roots.	Mental arithmetic, pencil & paper methods. Calculator use.
	<<<<<<<<<<< Mental arithmetic, pencil and paper methods and calculator use; sense of number, sense of scale, sense of shape, reasoning, using and applying >>>>>>>>>>									
Key Marked Piece (Summative Assessments in bold)	Assessment 1 Venn diagrams, powers, standard form, rounding Assessment 2 Representing 3D shapes transformations, aspects of prior work.					Assessment 3 Frequency trees with probability, algebraic proficiency, aspects of prior work. Assessment 4 Data presentation, Pythagoras theorem, FDP, aspects of prior work.				
Vocabulary	Venn diagrams & Data Presentation Symbols: ∩ U ξ A', Ø, ϵ P(A) Elements, set, notation, union, intersection, Universal set, complement, empty set, member, data, stem & leaf, key, scatter graph, correlation, trend, slope, positive, negative, relationship, line of best fit, interpret, outlier, interpolation, extrapolation, (un)reliable, bivariate data. Number System, FDP Power, index, indices, square, cube, root, round, truncate, significant figures (Sig Figs), primes, product, multiple, near miss, ordinary, magnitude, equivalent, dot notation, recurring, bus-stop method, conversion, percent, percentage. 3D Shapes, 2D, 3D, orientation, vertical, horizontal, diagonal, isometric, cube, cuboid, prism, pyramid Transformations, Scale Drawing & Pythagoras Object, image, rotate, angle, reflect, translate, enlarge, centre of rotation/enlargement, clockwise/anti-clockwise, column vector, congruent, similar, direction, mirror line, angle of rotation, co-ordinate axes, scale factor, fractional, integer, scale, ratio, right-angled, hypotenuse. Probability Experiment, equally likely event, mutually exclusive, exhaustive, frequency, probability, given that…., possibility space. Algebra Like terms, brackets, factorise, highest common factor (HCF), solve, subject, substitute.									

Curriculum overview for Year 8 (Higher Term 2)

Term	Spring 1				Spring 2			
Topic	**Ratio and Proportion**	**Speed, Distance, Time (S-D-T)**	**Angles**	**Sequences**	**Fraction calculations**	**Percentages**	**Solving Equations**	**Area, Perimeter & Volume**
Knowledge	Ratio symbol Share in a ratio Reverse ratio Ratios in problem solving.(PS) KO 12	Basic concept of speed (= distance moved per unit of time) Simple compound units. KO 37	Basic angle rules. Simple geometric proofs. Interior/ exterior angles. Angles in polygons. KO 2,7, 34,35	Generate sequences. Term-to-term rules. Linear sequences and nth term. Solve sequence problems. KO 14, 28	4-rules with proper & improper fractions and mixed numbers. KO 8,17	Use of multipliers. Increase, decrease by %. Simple interest. Profit, loss. % change. KO 38, 29	Balancing method • 2-step & 3-step equations. • Letter both sides. Form and solve equations. Check by substitution. KO 1, 30	Rectangle Triangle Trapezium Parallelogram Compound area. Volume (cubes, cuboids, prisms) Surface area (cubes, cuboids, prisms) KO 26, 7, 3
Skills	Arithmetic Read and interpret problems. PS	Units of time. Units of distance. Units of speed. Substitution.	Memorise basic rules. Use reasoning. Solve angle problems. Memorise methods for "angles in polygons"	Arithmetic. Pattern spotting. Apply algorithms to problem solving. Substitution. Solving equations.	Arithmetic, factors, multiples, cancelling. Memorise rules.	% to decimal conversion. Calculations with % with and without calculator.	Algebraic conventions. Inverse operations. Improper to top-heavy fractions.	Definitions of area, perimeter, volume. Simple formulae. Substitution PS
	<<<<<<<<<<< Mental arithmetic, pencil and paper methods and calculator use; sense of number, sense of scale, sense of shape, reasoning, using and applying >>>>>>>>>>							
Key Marked Piece (Summative Assessments in bold)	<u>Assessment 5</u> FDP, Proportion and ratio. Prior Y8 topics. **<u>Assessment 6 – SUMMATIVE</u>** **All Year 8 Topics to date.**				<u>Assessment 7</u> Equations, prior Y8 topics <u>Assessment 8</u> Area, perimeter, volume, basic co-ordinate graphs, prior y8 topics.			
Vocabulary	<u>Ratio</u> Ratio, proportion, simplify, equivalent, parts, express, quantity, amount; <u>Algebra and Sequences</u> Pattern, term-to-term rule, consecutive, generate, position-to-term rule (nth term), linear, quadratic, Fibonacci, equation, expression, term, balance, solve, inverse operation, improper, substitute, mixed number, integer. <u>Angles, Area, Perimeter, Volume</u> Angle, turn, interior, exterior, polygon, triangle, quadrilateral, isosceles, equilateral, straight, perimeter, length, area, space, volume, face, edge, vertex, vertices, height, width, compound, cube, cuboid, prism. <u>Speed</u> Distance, time, second, minute, hour, centimetre, metre, kilometre, mile. <u>Fractions and Percentages</u> Fraction, numerator, denominator, divisor line, mixed number, proper, improper, cancel, simplify, reciprocal, multiplier, increase, decrease, profit, loss, interest, tax.							

Curriculum overview for Year 8 (Higher Term 3)

Term	Summer 1			Summer 2		
Topic	**Graphs of Straight Lines**	**Distance, speed and time**	**Circles – Area and Circumference**	**Multiplying algebra**	**Data Measures**	**Probability**
Knowledge	Calculate co-ordinates with algebra rules. Plot straight lines. Interpret real-life graphs. Conversion graphs. KO 25, 40	Read, draw, interpret S-D-T graphs. Calculate with speed from graph. KO 37, 56	Parts of circle. Using π (pi). Formulae for area and circumference. Semi-circles and quarter circles. PS eg compound shapes KO 24, 63	Multiply double or triple brackets. Grid method with algebra. Apply to shape PS KO 1, 22	Stem & Leaf. Grouping Data. Types of data. Mode, median, median, range. Averages and variation. KO 5	Possibility spaces. Experiments. Dime charts. Analysis of data using probability vocabulary. KO 11
Skills	Algebraic conventions. Substitution. Graphing. Types of data. Inverse operations.	Use of calculator. Time units and conversion. Graphing. Units for speed, distance and time.	Memorise vocabulary and formulae. Substitute in formulae. Problem solving (PS). BODMAS/BIDMAS rules	Grid method with numbers. Algebraic conventions. 4-rules with algebraic terms. Form expressions and equations. Area and perimeter.	Use mathematical diagrams. Order numbers. Interpret simple measures of average and variation. Probability line. Literacy with probability	
	<<<<<<<<<<< Mental arithmetic, pencil and paper methods and calculator use; sense of number, sense of scale, sense of shape, reasoning, using and applying >>>>>>>>>>					
Key Marked Piece (Summative Assessments in bold)	<u>Assessment 9</u> Algebraic graphs, prior y8 topics. <u>Assessment 10</u> Distance speed & time, circles only			**Assessment 11** **SUMMATIVE – 2 PAPERS** **All prior y8 topics.**		
Vocabulary	<u>Algebra and Graphs</u> Substitute, axis, axes, linear, co-ordinate, straight, quadrant, gradient, intercept, curve, expand, brackets, simplify, collect like terms, quadratic, grid method, form expression/equation. <u>Speed</u> Distance, time, horizontal, compound measurement, slope, gradient, estimate, approximate, rise, step, speed, accelerate, steady speed <u>Circles</u> Radius, diameter, perimeter, area, circumference, arc, chord, tangent, sector, segment, diagonal, semi-circle, quarter-circle, composite, pi (π). <u>Data and Probability</u> Mode, median, mean, range, data, discrete, continuous, sum, average, variation, possibility, probability, experiment, event, outcome.					