Curriculum Map: Mathematics

YEAR 7	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Concepts and assessment	Number systems Directed number Data representation **Assessment**	Algebraic notation Factors & multiples Geometric properties **Assessment**	Area and perimeter Angles Ratio and proportion **Assessment**	Fractions, decimals, percentages Probability **Assessment**	Calculator skills Types of data Averages Sequences **Assessment**	Co-ordinates Circles **Assessment**
Key Knowledge	**Number Systems** • Place value • Calculations • BIDMAS • Rounding **Directed Number** • Calculations with negatives **Data Representation** • Tally charts • Pictograms • Bar charts • Line graphs	**Algebraic Notation** • Collecting like terms • Simplifying expressions • Function machines • Substitution • Solving simple equations **Factors & Multiples** • Identifying factors and multiples • HCF, LCM • Prime numbers • Square and cube numbers **Geometric Properties** • Converting units • Reading scales • Measuring • Parallel and perpendicular lines	**Area and Perimeter** • Perimeter of shapes • Perimeter of composite shapes • Area of rectangles, parallelograms, triangles, trapezia **Angles** • Types of angles • Estimating and measuring angles • Calculating angles on a straight line and around a point • Calculating unknown angles in triangles and quadrilaterals **Ratio and Proportion** • Simplifying ratio • Converting between ratio and fraction	**Fractions, Decimals, Percentages** • Fractions of amounts • Equivalent fractions • Comparing and ordering fractions • Simplifying fractions • Adding and subtracting same denominator fractions • Converting between equivalent FDP • Ordering with FDP • Calculating percentages of an amount **Probability** • Calculating theoretical probability	**Calculator Skills** • Calculating fractions • Calculating with indices and roots **Types of Data** • Interpret frequency tables (grouped and ungrouped) • Questionnaires **Averages** • Calculating averages and range **Co-ordinates** • Plotting co-ordinates in the four axes • Calculating midpoints • Plotting graphs of y= and x=	**Sequences** • Finding terms in a sequence • Calculating the rule of a sequence • Plotting straight-line graphs from a sequence **Circles** • Identifying parts of a circle • Circumferenc • Area

Curriculum Map: Mathematics

		Properties of triangles and quadrilaterals	• Sharing within a ratio • Calculating unknowns in a ratio • Calculating directly proportional relationships	• Calculating events not happening • Calculating experimental probability • Calculating expected outcomes		
Vocabulary Instruction	**Number Systems** Approximation, decimal, digit, integer, inequality, place value **Directed Number** Addition, sum, total, subtract, difference, multiply, product, divide, remainder, estimate, approximate, power of 10, significant, directed number **Data Representation** data, frequency, mode, range, statistic, tally, discrete, continuous	**Algebraic Notation** Expression, equation, formula, identity, coefficient, variable, term, constant, linear, solve, expand, factorise, substitute, form **Factors & Multiples** Factor, multiple, prime number, square number, estimate, HCF, LCM **Geometric Properties** Perpendicular, parallel, isosceles, equilateral, scalene, quadrilateral, polygon.	**Area and Perimeter** Perimeter, compound, estimate, sum **Angles** Acute, obtuse, reflex, right angle, protractors, vertically opposite, quadrilateral **Ratio and Proportion** Ratio, proportion, equivalent	**Fractions, Decimals, Percentages** Equivalent, simplify, numerator, denominator, proper, improper, mixed number, lowest common multiple **Probability** Theoretical, relative frequency, sample space, expected outcome, bias, trial	**Calculator Skills** Evaluate, function, format, indices, power **Types of Data** Continuous, discrete, qualitative, quantitative, primary, secondary, frequency, hypothesis, bias **Averages** mean, median, mode, range, average, sum, frequency **Coordinates** Axis, quadrant, midpoint	**Sequences** Term, sequence, position, difference, linear, geometric, Fibonacci, non-linear **Circles** Diameter, radius, chord, tangent, sector, segment, circumference

Curriculum Map: Mathematics

YEAR 8	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Concepts and assessment	Estimation Index laws Algebraic expressions and equations **Assessment**	Sequences and graphs Proportion	Pythagoras Fractions Data **Assessment**	Percentages Probability	Angles 3D Shape Compound measure **Assessment**	Transformations Constructions
Key Knowledge	**Estimation** • Rounding to significant figures • Estimating calculations **Index Laws** • Evaluating indices • Simplifying expressions with index laws • Evaluating powers of 10 • Writing numbers in standard form • Converting standard form to ordinary numbers **Algebraic Expressions and Equations** • Expanding single brackets • Factorising expressions	**Sequences and Graphs** • Finding the nth term • Generating sequences • Plotting straight line graphs • Identifying gradient and intercept • Plotting inequalities **Proportion** • To share within a ratio • To calculate unknowns in a ratio • To calculate with directly and indirectly proportional relationships To calculate using scale factors	**Pythagoras** • Calculating the hypotenuse • Calculating a shorter side **Fractions** • Calculating a fraction of an amount • Converting between mixed numbers and improper fractions • Calculating four operations with fractions **Data** • Drawing pie charts • Interpreting pie charts • Calculate a sample size • Plotting scatter graph	**Percentages** • Converting between equivalent FDP • Calculating a percentage of an amount • Calculating a percentage increase or decrease • Calculating the original amount **Probability** • Calculating theoretical probability • Calculating relative frequency • Two-way tables • Sample space diagrams • Venn diagrams	**Angles** • Calculating vertically opposite angles • Calculating angles in parallelograms, trapezia and kites • Calculating angles in parallel lines • Calculating interior angles in any polygon • Calculating exterior angles of any polygon **3D Shapes** • Identifying nets of 3D shapes • Identifying properties of 3D shapes • Calculating volume of cubes,	**Transformations** • Translation • Rotation • Reflection • Enlargement **Constructions** • Constructing angles • Constructing triangles • Constructing a bisector of a line or angle • Representing the region given by a locus of points

Curriculum Map: Mathematics

	• Solving linear equations • Representing inequalities • Solving inequalities • Changing the subject of an equation				cuboids and prisms **Compound Measure** • Calculating with speed, distance and time • Drawing distance-time graphs • Interpreting distance-time graphs • Calculating with density, mass and volume	
Vocabulary Instruction	**Estimation** Rounding, integer, significant figure, decimal, accuracy, estimation **Index Laws** Base, power, indices, power of 10, standard form, coefficient **Algebraic expressions and equations** Coefficient, term, variable, constant, power, expand, factorise, expression,	**Sequences and graphs** Nth term, term, position, coordinate, gradient, y intercept, linear, inequality, region **Proportion** Ratio, proportion, equivalent, scale factor	**Pythagoras** Hypotenuse, perpendicular height **Fractions** Numerator, denominator, proper, improper, mixed number, lowest common multiple, equivalent, simplify, unit fraction **Data** Frequency, quantity, discrete, continuous, qualitative,	**Percentages** Percent, fraction, equivalent **Probability** Theoretical, experimental, relative frque4ncyu, sample space, expected outcome, bias, trial	**Angles** Vertically opposite, sum, interior, exterior, regular, irregular, polygon, quadrilateral, alternate, corresponding, co-interior **3D Shape** Vertices, edge, face, net **Compound measure** Compound, density, unit	**Transformations** Translate, rotate, reflect, enlarge, scale factor, transformation **Constructions** Bisector, perpendicular, loci

	equation, inequality, linear		quantitative, correlation, causation, interpolation, extrapolation, sample			

YEAR 9 *Foundation*

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Concepts and assessment	Number Algebraic expressions	Equations Multiples and Factors Fractions, decimals and percentages Probability **Autumn Assessment**	Angles Statistical diagrams	Ratio and Proportion Units **Spring Assessment**	Shape: Area, Perimeter and Symmetry Graphs	Statistical diagrams **End of Year Assessment**
Key Knowledge	***Number*** • Four operations with integers • Adding and subtracting decimals • Multiply decimals • Four operations with negative numbers • Rounding and estimation • Order of operations	***Equations*** • To solve one step equations • To solve two step equations • To solve two or more step equations ***Multiples and Factors*** • Multiples and factors • Squares, square roots and cubes	***Angles*** • Measure and draw angles • Angles on a straight line • Angles around a point • Angles in any triangle • Angles in a quadrilateral • Angles in special quadrilaterals • Interior angles in regular polygons	***Ratio and Proportion*** • Simplify ratio • Share within a ratio • Find unknowns in a ratio • Direct proportion • Scale drawings • Nets of 3D shapes • Plans • Elevations ***Units***	***Shape*** • Rotational symmetry • Perimeter • Area of rectangles, parallelograms, triangles, trapezia • Parts of a circle • Area and circumference of a circle ***Graphs***	***Statistical diagrams 2*** • Interpreting pie charts • Constructing pie charts • Understanding correlation • Scatter graphs • Lines of best fit

Curriculum Map: Mathematics

	Algebraic Expressions • Write expressions in algebra • Collect like terms • Simplify expressions with multiplication and division • Expand single brackets • Factorise single brackets • Substitution	• Prime numbers • Powers ***Fractions, Decimals and Percentages*** • Simplifying fractions • Order and compare fractions • Four operations with fractions • Fraction of a quantity • One fraction as a quantity of another • Convert between fractions, decimals and percentages Calculate percentage of an amount (with a calculator) ***Probability*** • Describing probabilities • Probability scales • Calculating probabilities • Probability of an event not happening	• Exterior angles in regular polygons • Corresponding, alternate and co-interior angles in parallel lines • Three-figure bearings ***Statistical diagrams 1*** • Frequency tables and pictograms • Bar charts: single, dual and composite • Stem-and-leaf diagrams	• Choose appropriate units • Convert units of length, mass and volume	• Conversion graphs • Distance-time graphs • Drawing linear graphs • Calculating gradients	

Curriculum Map: Mathematics

Vocabulary Instruction	***Number*** Addition, subtraction, multiplication, division, place value, rounding, multiplying, dividing, directed numbers, positive, negative, rounding, significant figures, estimating, approximation. ***Algebra Expressions*** Variable, coefficient, expressions, simplify, indices, expand, factorise, substitute	***Equations*** Variable, coefficient, inverse, equation, linear ***Multiples and Factors*** multiples, factors, square, square root, cube, prime numbers, powers. ***Fractions, decimals and percentages*** Numerator, denominator, equivalent, simplify, mixed number, improper, proper, percentage ***Probability*** Theoretical, experimental, relative frequency, likely, unlikely, certain, impossible	***Angles*** Protractor, triangle, quadrilateral, polygon, exterior, interior, regular, bearing, corresponding, alternate, co-interior, parallel ***Statistical diagrams*** Frequency, bar chart, pictogram, stem and leaf	***Ratio and Proportion*** Ratio, part, direct proportion, scale factor, plan, elevation ***Units*** Metric, centimetre, metre, millimetre, kilometre, gram, kilogram, litre, millilitre	***Shape*** Rotational symmetry, perimeter, area, parallelogram, isosceles, scalene, equilateral, trapezium, diameter, radius, chord, tangent, sector, segment, circumference ***Graphs*** Conversion graphs, quadrants, gradient, y intercept, speed	***Statistical diagrams 2*** Frequency, proportion, pie chart, correlation, interpolation, extrapolation, scatter

Curriculum Map: Mathematics

YEAR 9

Higher	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Concepts and assessment	Number Powers, surds and roots Expressions and equations	Fractions, decimals and percentages Probability **Autumn Assessment**	Angles Ratio and proportion	Pythagoras Right angled trigonometry Shape: Area, volume and surface area **Spring Assessment**	Sequences Graphs: Linear and Quadratic Inequalities	Statistical diagrams **End of Year Assessment**
Key Knowledge	**<u>Number</u>** • Order of operations • Multiplying and dividing decimals • Rounding and estimation • Multiples, factors and primes • Product of primes • Highest common factor (HCF) and lowest common multiple (LCM) **<u>Powers, surds and roots</u>** • Index laws • Negative indices • Fractional indices • Converting number sin standard form	**<u>Fractions, decimals and percentages</u>** • Four operations with fractions • Convert between mixed number and improper fractions • Fraction of amount • Convert recurring decimals to fractions • Percentage of an amount • Percentage increase and decrease • Compound interest • Repeated percentage change	**<u>Angles</u>** • Angles in special quadrilaterals • Corresponding, alternate and co-interior angles in parallel lines • Interior and exterior angles in regular polygons • Describe and draw loci • Solve problems using loci **<u>Ratios and proportion</u>** • Writing ratio in the form 1:n • Simplify ratio • Share in a ratio • Direct proportion • Combining ratios	**<u>Pythagoras</u>** *Using Pythagoras*: • Calculate hypotenuse • Calculate shorter sides • Solve 2-D problems • Area of isosceles triangles • Solve 3-D problems **<u>Trigonometry</u>** *Using right-angled trigonometry (sine, cosine, tangent):* • Calculate unknown angle in right angled triangle • Calculate unknown side of	**<u>Sequences</u>** • Generate sequences from nth term • Find nth term • Determine if a term is in a sequence **<u>Graphs</u>** • Plot linear graphs using table of values • Gradient of a line • Find equation of a line using gradient-intercept • Plot quadratic graphs • Solve quadratic equations from graphs	**<u>Statistics</u>** • Averages from a list of data • Averages from a frequency table • Estimated mean and median from grouped frequency table • Frequency polygons • Stem and leaf diagrams • Scatter graphs • Line of best fit

Curriculum Map: Mathematics

	• Calculations in standard form • Simplifying surds **Expressions and equations** • Expand single brackets • Expand double brackets • Factorise linear brackets • Factorise quadratic expressions • Rearrange formulae • Substitute into expressions • Solve 2 step equations • Solve equations with fractions • Solve equations with brackets • Solve equations with unknowns on both sides	• Reverse percentages **Probability** • Calculate probabilities • Independent events • Experimental probability • Expected outcomes • Two way tables • Sample space diagrams	• Change ratios • Best buys • Distance time graphs • Calculating speed, distance and time • Calculating density, mass and volume	right-angled triangle • Calculate angle of depression or elevation • Calculate bearings **Shape** • Circumference and area of a circle • Arc length and area of a sector • Area of a trapezium • Volume of a prism • Volume of a cylinder • Surface area of a prism • Surface area of a cylinder	• Identify intercepts and turning point of a quadratic graph **Inequalities** • Solve inequalities and represent on a number line • Plot linear inequalities graphically • Represent regions using inequalities	
Vocabulary Instruction	***Number*** Multiples, factors, prime numbers, product, LCM, HCF, significant figures, estimate, approximate, square roots	***Fractions, decimals and percentages*** Numerator, denominator, improper, mixed number, equivalent, recurring,	***Angles*** Interior, exterior, polygon, regular, quadrilateral, corresponding, alternate, co-interior, loci	***Pythagoras*** Hypotenuse, space diagonal ***Trigonometry*** Sine, cosine, tangent, adjacent, opposite,	***Sequences*** Nth term, linear, geometric, term, common difference, zero term, non-linear ***Graphs***	***Statistics*** Average, mean, median, mode, range, discrete, continuous, grouped, ungrouped, frequency, total,

	Powers, surds and roots Indices, powers, standard form, power of 10, surd, irrational, root ***Expressions and equations*** Variable, coefficient, expressions, equation, expand, simplify, factorise, formulae, quadratic, linear, substitute, solve, inverse	terminating, percentage, increase, decrease, multiplier, compound interest, profit, loss, ***Probability*** Theoretical, relative frequency, estimated outcome, independent mutually exclusive, exhaustive, dependent	***Ratio and Proportion*** Ratio, part, direct proportion, indirect proportion, speed, distance, time, density, mass, volume, compound measure	hypotenuse, elevation, depressions, bearing ***Shape*** Radius, diameter, area, circumference, semi-circle, sector, arc length, trapezium, cuboid, prism, cross section, cylinder	Linear, coordinate, y intercept, gradient, quadratic, turning point, maximum, minimum, roots ***Inequalities*** Inequality, region	frequency polygon, stem and leaf, correlation, interpolation, extrapolation

YEAR 10 *Foundation*

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Concepts and assessment	Use of calculator Number properties Percentages Algebra	Averages Area and perimeter Ratio and proportion **Autumn Assessment**	Equations and inequalities Probability Sequences	Circles Surface area **Spring Assessment**	Transformations Constructions bisectors and loci **Mocks**	Quadratic graphs Pythagoras
Key Knowledge	**<u>Use of calculator</u>** • Use of important keys, including brackets, fractions, mixed numbers, Pi	**<u>Averages</u>** • Mean, median, mode and range from a list of data	**<u>Equations and inequalities</u>** • Solve two or more step equations • Solve equations with fractions	**<u>Circles</u>** • Parts of a circle • Circumference • Area of circles • Fractions of circles	**<u>Transformations</u>** • Translation • Reflection • Rotation	**<u>Quadratic graphs</u>** • Plotting quadratic graphs • Solving equations from

Curriculum Map: Mathematics

	Number properties • Multiply and divide by powers of 10 • Product of prime factors • HCF and LCM • Index laws **Percentages** • Equivalent fractions, decimals and percentages • Percentage of an amount • Percentage increase and decrease • Express on quantity as a percentage of another • Percentage change • Reverse percentages • Repeated percentage change • Compound interest **Algebra**	• Mean, median and mode from a frequency table • Mean from a grouped frequency table • Frequency polygons **Area and Perimeter** • Perimeter of compound shapes • Area of rectangles, parallelograms, triangles and trapezia • Area of compound shapes **Ratio and proportion** • Simplify ratios • Share in a ratio • Write ratios and fractions • Solve unknowns in a ratio • Direct proportion • Best buys • Speed, distance, time	• Solve equations with brackets • Solve equations with unknowns on both sides • Solve linear inequalities • Represent inequalities on number line **Probability** • Calculate probabilities • Calculate relative frequency • Expected outcomes • Two-way tables • Sample space diagrams **Sequences** • Generate and describe sequences • Recognise and use patterns • Generate sequences from nth term • Find nth term • Special sequences	• Compound shapes **Surface area and Volume** • Volume of cuboid • Surface area of cuboid • Volume of prism • Surface of prism • Volume of cylinder	• Enlargement by positive scale factor **Bisectors and loci** • Construct line bisectors • Construct angle bisector • Construct perpendicular bisector • Construct loci around a point, line or two points	quadratic graphs **Pythagoras** *Using Pythagoras*: • Calculate hypotenuse • Calculate shorter sides • Solve 2-D problems • Area of isosceles triangles

Curriculum Map: Mathematics

	• Write algebraic expressions and formulae • Simplify by multiplying terms • Simplify by collecting 'like terms' • Substitution • Expand brackets • Expand brackets and simplify • Factorising					
Vocabulary Instruction	***Number properties*** Multiples, factors, prime numbers, product, LCM, HCF, significant figures, estimate, approximate, square roots ***Percentages*** Numerator, denominator, improper, mixed number, equivalent, percentage, increase, decrease, multiplier, compound interest, profit, loss ***Algebra*** Variable, coefficient, expressions, equation, formula, term, expand, simplify, factorise, substitute	***Averages*** Mode, median, mean, range, frequency, discrete, continuous, frequency polygon ***Area and Perimeter*** Perimeter, area, irregular, rectangle, isosceles, equilateral, scalene, parallelogram, trapezium, compound ***Ratio and Proportion*** Simplify, ratio, amounts, direct proportion, best buys, speed, distance, time	***Equations and Inequalities*** Linear, equation, inverse, term, solve, variable, coefficient, inequality ***Probability*** Theoretical, experimental, relative frequency, likely, unlikely, certain, impossible, mutually exclusive, exhaustive, independent ***Sequences*** Nth term, linear, geometric, Fibonacci, term, common difference, zero term, non-linear	***Circles*** Radius, diameter, circumference, area, chord, tangent, sector, segment, pi ***Surface area and Volume*** Volume, 3-D, cube, surface area, cuboid, prism, cylinder, cross section	***Transformations*** Translate, vector, reflect, mirror line, rotate, clockwise, anticlockwise, enlarge, scale factor, centre of enlargement ***Bisectors and Loci*** Construct, line bisector, angle bisector, perpendicular, loci,	***Quadratic Graphs*** Quadratic, coordinate, y intercept, roots, turning point, maximum, minimum, ***Pythagoras*** Hypotenuse, space diagonal

Curriculum Map: Mathematics

YEAR 10

Higher	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Concepts and assessment	Use of calculator Volume and surface area Right angled trigonometry Indices and standard form	Circle theorems Quadratic equations **Autumn Assessment**	Surds Similarity Non-right-angled trigonometry	Graphs and equations Data distributions **Spring assessment**	Probability Algebraic methods **Mocks**	Proportion Limits of accuracy Vectors Transformations of graphs
Key Knowledge	**<u>Use of calculator</u>** • Use of important keys, including brackets, fractions and mixed numbers **<u>Volume and surface area</u>** • Volume of a pyramid • Volume of a cone • Surface area of a cone • Volume of a sphere • Surface area of a sphere **<u>Trigonometry</u>** *Using right-angled trigonometry (sine, cosine, tangent):*	**<u>Circle theorems</u>** • Angles at circumference • Angle at centre twice angle at circumference • Angles in a semicircle • Cyclic quadrilaterals • Tangents and chords Alternate segment theorem **<u>Quadratic equations</u>** • Expand double brackets • Factorise quadratic expressions	**<u>Surds</u>** • Convert recurring decimals to fractions • Simplify surds • Expand brackets with surds • Rationalize a denominator **<u>Similarity</u>** • Calculate scale factors • Find lengths in similar triangles • Find lengths using similarity in triangles with parallel lines • Similarity with area and volume	**<u>Graphs and equations</u>** • Interpret real-life graphs • Plot linear graphs • Solve simultaneous equations graphically • Equations of parallel and perpendicular lines • Plot quadratic graphs • Solve with quadratic graphs • Plot cubic graphs • Reciprocal graphs • Exponential graphs • Recognize and solve with	**<u>Probability</u>** • Independent probability • Dependent probability • Tree diagrams **<u>Algebraic methods</u>** • Rearrange formulae • Solve linear simultaneous equations • Solve linear and non-linear simultaneous equations • Simplify algebraic fractions • Add and subtract algebraic fractions	**<u>Proportion</u>** • Direct proportion equations • Inverse proportion equations • Proportion with squares, cubes and roots **<u>Limits of accuracy</u>** • Bounds and error intervals • Calculates with bounds **<u>Vectors</u>** • Column vectors • Parallel and scalar vectors • Solve complex vector problems

Curriculum Map: Mathematics

	• Calculate unknown angle in right angled triangle • Calculate unknown side of right-angled triangle • Calculate angle of depression or elevation • Calculate bearings **<u>Powers, standard form and surds</u>** • Index laws • Negative indices • Fractional indices • Converting number sin standard form • Calculations in standard form	• Solve quadratic equations by factorising • Solve quadratic equations using quadratic formula • Completing the square • Solve quadratic equations by completing the square • Solve problems involving quadratic equations	**<u>Trigonometry 2</u>** • Use right angled trigonometry in 3D • Finding lengths and angles using sine rule • Finding lengths and angles using cosine rule • Area of any triangle • Know exact trigonometric values	trigonometric graphs **<u>Data distributions</u>** • Cumulative frequency diagrams • Finding medians and IQR • Box plots • Histograms	• Algebraic proof	• Proof using vectors **<u>Transformations of graphs</u>** • Translate graphs • Stretch graphs • Reflect graphs
Vocabulary Instruction	***Volume and Surface Area*** Volume, pyramid, cone, surface area, sphere, radius, diameter, slant height, perpendicular height, cross section ***Trigonometry***	***Circle Theorems*** circumference, centre, semicircle, cyclic quadrilaterals, tangents, chords, alternate segment theorem. ***Quadratic Equations***	***Surds*** Rational, irrational, surd, rationalise, denominator, expand ***Similarity*** Similar shapes, scale factor ***Trigonometry***	***Graphs and Equations*** Linear, quadratic, cubic, reciprocal, exponential, square root, trigonometric, intercept, gradient, root, turning point, parallel, perpendicular ***Data distributions***	***Probability*** Relative frequency, independent, dependent, conditional, frequency, outcome, event, mutually exclusive, exhaustive ***Algebraic methods***	***Proportion*** Direct, inverse, indirect, constant of proportionality, constant, square, cube, root ***Limits of Accuracy*** Bounds, error interval, upper bound, lower bound, inequality,

	Sine, cosine, tangent, adjacent, opposite, hypotenuse, elevation, depressions, bearing ***Powers, surds and roots*** Indices, powers, standard form, power of 10, surd, irrational, root	Expand, factorise, linear, coefficient, product, sum, quadratic, expression, solve, equation, quadratic formula, complete the square, turning point, root	Sine rule, cosine rule, area, exact, surds, adjacent, opposite,	Cumulative frequency, median, quartiles, interquartile range, box plots, histograms, median, frequency density, frequency	Simplify, simultaneous equations, non-linear, linear, proof	maximum, minimum ***Vectors*** Column vector, scalar, parallel, midpoint, ratio ***Transformation of graphs*** Function, translate, strength, enlarge, reflect, intercepts, graphs, turning points

YEAR 11 *Foundation*

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Concepts and assessment	Venn diagrams Probability Trigonometry Linear graphs Circles	Standard Form Compound Measure **Mocks**	Simultaneous Equations Enlargement and similarity Graphs **Practice papers**	Revision topics **Practice papers** **In class papers assessment**	Revision topics **Practice papers** **GCSE examinations**	**GCSE examinations**
Key Knowledge	**<u>Venn diagrams</u>** • Understand set notation • Venn diagrams • Probability from Venn diagrams **<u>Probability</u>**	**<u>Standard form</u>** • Convert numbers in standard form • Calculations in standard form **<u>Compound measures</u>**	**<u>Simultaneous equations</u>** • Solve linear simultaneous equations • Derive simultaneous	Revision of individual topics for each class decided by each class teacher from the Mock examinations.	Revision of individual topics for each class decided by each class teacher from the Mock examinations.	

	• Calculating independent probabilities • Tree diagrams **<u>Trigonometry</u>** *Using right-angled trigonometry (sine, cosine, tangent):* • Calculate unknown angle in right angled triangle • Calculate unknown side of right-angled triangle • Calculate angle of depression or elevation **<u>Linear graphs</u>** • Drawing graphs in the form y = mx + c • Use y = mx + c to identify parallel lines • Find the equation of a line through two points or through one point with a given gradient • Solve linear simultaneous	• Speed • Density • Pressure Convert between compound measures	equations from real-life situations. **<u>Enlargement and similar shapes</u>** • Calculate scale factors • Find length in similar shapes • Enlargements with a positive and fractional scale factor • Use the congruence criteria for triangles (SSS, SAS, ASA, RHS). **<u>Graphs</u>** • Recognise graphs and equations for quadratic, cubic and reciprocal functions. • Plot quadratic graphs • Plot cubic graph	Practice past papers	Practice past papers	

Curriculum Map: Mathematics

	equations graphically **<u>Circles</u>** • Area of circles • Circumference of circles • Arc lengths Areas of sectors					
Vocabulary Instruction	***Venn Diagrams*** Union, intersection, compliment, Venn ***Probability*** Relative frequency, independent, dependent, conditional, frequency, outcome, event, mutually exclusive, exhaustive ***Trigonometry*** Sine, cosine, tangent, adjacent, opposite, hypotenuse, elevation, depressions, bearing ***Linear Graphs*** Linear, y intercept, gradient, coordinate	***Standard Form*** Standard form, ordinary, power of 10, evaluate ***Compound Measure*** Speed, distance, time, density, mass, volume, pressure, force, area, compound measure	***Simultaneous Equations*** Solve, simultaneous, coefficients, balance, multiply ***Enlargement and Similar shapes*** Similar shapes, scale factor, enlarge, centre of enlargement, congruency ***Graphs*** Linear, quadratic, cubic, exponential, reciprocal, y intercept, gradient, turning point, roots			

	Circles Radius, diameter, circumference, area, chord, tangent, sector, segment, pi, arc length					

YEAR 11 HIGHER

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Concepts and assessment	Venn diagrams Quadratic inequalities Trigonometry Equations and circles Sequences Graphs and rates of change	Compound measures Functions and iterations **Mock examinations**	Revision topics **Practice papers**	Revision topics **Practice papers** **In class papers assessment**	Revision topics **Practice papers** **GCSE examinations**	**GCSE examinations**
Key Knowledge	**<u>Venn diagrams</u>** • Understand set notation • Venn diagrams • Probability from Venn diagrams **<u>Quadratic inequalities</u>** • Recap solving quadratic equations by factorising • Solving quadratic inequalities	**<u>Compound measures</u>** • Speed • Density • Pressure **<u>Functions and iteration</u>** • Functions • Iteration Revision of individual topics for each class	Revision of individual topics for each class decided by each class teacher from the Mock examinations. Practice past papers	Revision of individual topics for each class decided by each class teacher from the Mock examinations. Practice past papers	Revision of individual topics for each class decided by each class teacher from the Mock examinations. Practice past papers	

	• Regions to give inequality solutions **<u>Trigonometry</u>** • Find lengths and angles using right-angled trigonometry • Trigonometric graphs • Know the exact values of sin, tan, cos at 0, 30, 45, 60 and 90 • Find lengths and angles using sine and cosine rule **<u>Equations and circles</u>** • Plot graphs in the form y = mx + c • Equations of parallel and perpendicular lines. • Equation of a line through two points • Recognise and use the equation of a circle centred at the origin.	decided by each class teacher from the Mock examinations. Practice past papers				

	• Find the equation of a tangent to a circle **<u>Sequences</u>** • Recognise and use sequences of triangular, square and cube numbers, Fibonacci, quadratic and geometric • nth term of a quadratic sequence • Recognise and use geometric sequences where the common ratio may be a surd **<u>Graphs and rates of change</u>** • Instantaneous and average rates of change • Interpret areas under graphs and gradients of graphs in real-life contexts • Locate turning points of quadratic functions by					

	completing the square.					
Vocabulary Instruction	***Venn Diagrams*** Union, intersection, compliment, Venn ***Quadratic inequalities*** Quadratic, roots, solutions, inequalities, solving, factorising, regions, ***Trigonometry*** Sine, cosine, tangent, adjacent, opposite, hypotenuse, ***Equations and Circles*** Radius, diameter, tangent, parallel, perpendicular, gradient, y-intercept, origin, radius ***Sequences*** Nth term, common difference, zero term, second difference, triangular, square, cube, Fibonacci,	***Compound Measure*** Speed, distance, time, density, mass, volume, pressure, force, surface area **Functions and iteration** Functions, composite functions, inverse, iteration, iterative formula, recurrence relations				

	quadratic, geometric, ***Graphs and rate of change*** Ratio, instantaneous, average, interpret, gradient, turning point,.					