Curriculum Overview				
Year Group	**Term**	**Unit of Work**	**Assessment Content**	**Vocabulary mapping**
7	**1**	**Why this? Why now?** The focus for this term is understanding place value and rounding. This builds upon the number and place value strand of the KS2 curriculum where they have developed an understanding of decimal place value in year 6. There is some flexibility within the term to support any shared classes and ensure support and challenge within sets. This is a fundamental module, teachers must ensure the content is mastered by all before progressing to form the foundations of a schema of number and calculations. Whole numbers and decimals Students will: • Understand and use place value for decimals, measures and integers of any size • Be able to estimate calculations by rounding • Understand order of operations Algebra Students will: • Be able to use the basic rules of algebra	Topic tests In class formative assessment using Mini Whiteboards	Estimate (verb): to use an approximate calculation or rounding of numbers to find a value close to the accurate answer. -Note: can also mean to read a value from a graph C Integer: a whole number. Decimal: Not a whole number but a number with additional value after a decimal point to show parts of 1 whole unit. E.g., 3.65 or 0.234. Variable (noun): a letter representing an unknown value. Term: A number, variable or combination of both multiplied together. Expression: A collection of terms, e.g. 5g +67 +8t without an equal sign. Equation: two expressions with the same value separated by an equal sign.

	2	**Why this? Why now?** The focus for term continues with foundational numerical skills but specifically focusing on addition and subtraction. It builds upon place value in term 1 with use of the column method. Fluency with operations and numerical skills is essential for progression in KS3, building upon KS1 and KS2 understanding of number bonds. There is some flexibility within the term to support any shared classes and ensure support and challenge within sets. Time should be taken with lower sets to ensure mastery of these skills, so that they are completed with ease to free up cognitive load in KS4. Addition and subtraction must be taught immediately before perimeter as a prerequisite and to avoid confusion with area. Higher sets may progress onto algebraic addition and subtraction (collecting like terms). Number Students will: • Be able to use addition and subtraction, including formal written methods, applied to integers and decimals • Be able to use the concepts and vocabulary of prime numbers, factors (or divisors), multiples, common factors, common multiples, highest common factor, lowest common multiple	TOPIC tests In class formative assessment using mini-whiteboards	Prime: a number which has exactly two factors: the number one and itself. Factor: a number that divides into another number exactly. E.g., 4 is a factor of 28 Multiple: a number that can be found in a given number's times table. E.g., 12 is a multiple of 3. Perimeter: the total distance around the outside of a shape. Sum: the result of an addition. Compound (when referring to shape): a shape made from joining two or more shapes. Simplify (verb): to reduce an expression, fraction or ratio to its lowest terms. Expand (verb): to multiply out brackets.

		Perimeter Students will: • Be able to calculate and solve problems involving perimeters of rectangles and compound shapes (not circles) Algebra Students will: • Be able to simplify and manipulate algebraic expressions to maintain equivalence by multiplying a single term over a bracket or by taking out common factors		
	3	**Why this? Why now?** The focus for term 3 is another essential numerical skill, multiplication and division. This prepares students to apply these skills to the calculation of the area and mean. Fluency with operations and numerical skills is essential for progression in KS3, building upon KS1 and KS2 where times tables are rehearsed and methods of multiplications and division are introduced. There is some flexibility within the term to ensure support and challenge within sets. Time should be taken with lower sets to ensure mastery of these skills, so that they are completed with ease to free up cognitive load in KS4. Multiplication and division are taught immediately before area to support students' development of	TOPIC tests In class formative assessment	Division: the process of breaking a number up into equal parts and finding out how many equal parts can be made. Operation: an action applied to one or more values to give an output. Most common operations are addition, subtraction, multiplication and division. Formula: a mathematical rule or relationship that uses letters to represent amounts which can be changed. Mean: a type of average found by adding all data values and

		schema and linking of the correct skill to its relevant application. Number Students will: • Be able to use Multiplication and Division, including formal written methods, applied to integers, decimals Area Students will: • Be able to derive and apply formulae to calculate and solve problems involving area of triangles, rectangles and parallelograms Mean Students will: • Be able to describe, interpret and compare observed distributions of a single variable through the use of the mean		dividing by the number of values. Average: a single value used to best represent a set of data, can be the mean, median or mode. Area: The space inside a two dimensional shape.

	4	**Why this? Why now?** The focus for term 4 is for students to understand the basics of fractions conceptually, which supports their ability to add and subtract them. This builds upon content taught in KS2 with fractions typically introduced in a concrete manner in year 3 and revisited in increasing complexity each following year. There is some flexibility within the term to support any shared classes and ensure support and challenge within sets. This term prepares students for fraction manipulation in year 8 term 1. Fractions Students will: • Be able to express one quantity as a fraction of another, where the fraction is less than 1 and greater than 1 • Be able to use addition and subtraction, including formal written methods, applied to proper and improper fractions, and mixed numbers • Be able to compare and order fractions by creating common denominators Be able to interpret fractions and percentages as operators	TOPIC tests In class formative assessment	Fraction: a way to represent part of a whole expressed as a quotient. Numerator: the part of a fraction that is above the line and signifies the number of parts out of a total. Denominator: the number below the line in a fraction; a divisor. Improper fraction: a fraction whose numerator is greater than or equal to its denominator. For example, 9/4 and 4/3 are improper fractions. Numerically, they are always equal to or greater than 1. Mixed number: a combination of an integer (whole number) and fraction (part of a whole number). Percentage: a number followed by '%' symbol to represent a fraction of 100.

	5	**Why this? Why now?** The focus for term 5 moves on from number into the shape, space and measure strand. The basics of coordinates, polygons and angles are taught with little prior knowledge expected to be remembered from KS2 due to the year 6 focus on arithmetic for SATS preparation. To support shared classes, the separate topics within this term may be ordered differently. This term prepares students for term 2 in year 8 where angle facts are recalled and practiced, and term 6 where polygon facts are applied to calculations of volume and 3D shapes. Co-ordinates Students will: • Be able to identify and plot co-ordinates in four quadrants Polygons Students will: • Be able to derive, describe and illustrate properties of triangles, quadrilaterals and other plane figures (for example, equal lengths and angles) using appropriate language and technologies Angles Students will: • Be able to apply the properties of angles at a point, angles at a point on a straight line, vertically opposite angles	TOPIC tests In class formative assessment	Co-ordinate: used to describe the position of a point on a grid using an x value (horizontal location) followed by a y value (vertical location). Polygon: a closed 2d shape with only straight sides. Triangle: a polygon with three sides. Scalene: the name for a triangle which does not have any equal sides or angles. Isosceles: the name for a triangle with only two equal side lengths and two equal angles. Equilateral: the name for a triangle with three equal sides and three equal angles (of 60 degrees each). Quadrilateral: a polygon with exactly four sides. Parallel: used to describe two lines which are equidistant and will never meet (like train tracks)

				Perpendicular: used to describe two lines that cross at right angles (90 degrees). Rhombus: a quadrilateral whose four sides all have the same length, opposite sides are parallel, and opposite angles are equal. Trapezium: a quadrilateral with one pair of parallel sides.
	6	**Why this? Why now?** The focus for term 6 is time, continuing within the measurement strand of the national curriculum. Time is sequenced last in year 7 because it does not provide prerequisites for any of the other modules. This topic will support students to understand and calculate speed, distance and time in year 10. Time Students will: • Be able to tell the time in 12 and 24 hour clock • Be able to interpret timetables	TOPIC tests In class formative assessment	Annual/annum: in one year.

8	**1**	**Why this? Why now?** The focus for term1 in year 8 is number, specifically types of number and rounding. This builds upon the first term in year 7 and revisits rounding. To support shared classes, the separate topics within this term may be ordered differently. This term prepares students for the introduction of algebra in term two where knowledge of factors and multiples is required. Number Students will: • Be able to use integer powers and associated real roots (square, cube and higher), recognise powers of 2, 3, 4, 5 and distinguish between exact representations of roots and their decimal approximations • Be able to use the concepts and vocabulary of prime numbers, factors (or divisors), multiples, common factors, common multiples, HCF, LCM, prime factorisation, including using product notation and the unique factorisation property • Be able to round numbers and measures to an appropriate degree of accuracy [for example, to a number of decimal places or significant figures] • Understand Negative Number Manipulation Fractions Students will: • Be able to multiply and divide fractions and mixed numbers	TOPIC tests In class formative assessment	Product: The answer when two or more values are multiplied together Factorise: to write a number as the product of its factors. Negative (number): a value less than zero. Approximate: an approximate value is a value that is close to the actual value of a number.
	2	**Why this? Why now?** This term introduces algebraic vocabulary and algebra as a concept before applying it to angles. Algebra is only briefly introduced at KS2 in year 6 and so teachers should not expect prior knowledge. To support shared classes, the separate topics within this term may be ordered	TOPIC tests In class formative assessment	Equation: a statement that the values of two mathematical expressions are equal, using an = sign.

		differently. This term prepares students for further manipulation and applications of algebra as stretch content in the subsequent year 8 topics and then in year 9 term 2. 3D visualisation Students will: • Be able to model situations or procedures by translating them into algebraic expressions or formulae and by using graphs • Be able to use algebraic methods to solve linear equations in one variable (including all forms that require rearrangement) Angles Students will: • Understand and use the relationship between parallel lines and alternate and corresponding angles • Understand and use interior and exterior angles of polygons		Formula: rules that are written connecting two or more variables, can be used to work out other values. Solve: to find the value of an unknown variable. Parallel: Corresponding angles): Alternate (angles) :
	3	**Why this? Why now?** This term combines application of numerical and measurement skills (that have been taught in year 8 term 1 and year 7) to perimeter, proportion and FDP calculations. To support shared classes, the separate topics within this term may be ordered differently. This term prepares students for ratio and area. Circumference	TOPIC tests In class formative assessment	Circumference: Diameter: Radius: Proportion:

		Students will: • Be able to calculate and solve problems involving perimeters of 2-D shapes (including circles) and composite shapes Proportion Students will: • Be able to use best buys, recipes and currency • Be able to use standard units of mass, length, time, money and other measures (including standard compound measures) using decimal quantities where appropriate Fractions, Decimals and Percentages Students will: • Be able to solve problems involving percentage change, including: percentage increase, decrease and original value problems and simple interest in financial mathematics • Be able to work with calculators and percentages		
	4	**Why this? Why now?** This term focuses on ratio, following on from proportion. This then links into area of a (part) circle where multiplicative relationships are present. Ratio Students will: • Be able to divide a given quantity into two parts in a given part:part or part: whole ratio; express the division of a quantity into two parts as a ratio	TOPIC tests In class formative assessment	Ratio: Pi: an irrational constant denoting how many times the diameter of a circle fits around the circumference. (3.14 to 2dp). Area: the space within a 2d shape.

		• Understand that a multiplicative relationship between two quantities can be expressed as a ratio or a fraction Area Students will: • Be able to derive and apply formulae to calculate and solve problems involving area of (part)circles		
	5	**Why this? Why now?** This term moves into the statistics strand of the curriculum, with data representation and analysis taught alongside each other to support schema development. This comes at the end of the year 8 curriculum as it requires fluency with number skills for their application and does not need to be taught before any previous modules. The two modules within this term supplement each other so can be taught simultaneously for shared classes. Data and graphs Students will: • Be able to construct and interpret appropriate tables, charts, and diagrams, including frequency tables, bar charts, pie charts and vertical line (or bar) charts for ungrouped and grouped numerical data Averages Students will: • Be able to describe, interpret and compare observed distributions of a single variable through appropriate measures of central tendency (mean, mode, median) and spread (range, consideration of outliers)	TOPIC tests In class formative assessment	Interpret: Outlier:

	6	**Why this? Why now?** Term 6 builds upon knowledge of area and polygons developed in year 7 and 8, with application to 3D shapes and volume. Algebra and numerical skills are applied here to formulae and problem solving. Due to the increased cognitive demand, 3D visualisation and volume are taught at the end of the year 8 curriculum; this prepares students for further applied content in year 9. 3D visualisation Students will: • Be able to use the properties of faces, surfaces, edges and vertices of cubes, cuboids, prisms, cylinders, pyramids, cones and spheres to solve problems in 3-D Volume Students will: • Be able to derive and apply formulae to calculate and solve problems involving volume of cuboids (including cubes) and other prisms (including cylinders)	TOPIC tests In class formative assessment	Vertices: Faces: Edges: Pyramid: Prism: a 3d shape with the same cross section all along its length.
9	1	The focus for this term is number building upon the foundations made in KS3. There is some flexibility within the term to support any shared classes but whole numbers has to precede fractions as prerequisite knowledge. Whole numbers and Decimals Students will: • Understand and manipulate decimals • Be able to estimate and round numbers to an appropriate degree of accuracy including use in calculations, limits of accuracy and related calculations • Be able to identify the HCF and LCM of large numbers	TOPIC tests In class formative assessment	Reciprocal: Equivalent:

		Fractions Students will: • Be able to manipulate fractions including using the four rules and equivalence		
	2	The focus for this term is index notation building upon algebra in KS3. There is some flexibility within the term to support any shared classes but laws of indices has to precede standard form as prerequisite knowledge. Algebra Students will: • Understand and use algebraic notation • Understand, know and use laws of indices • Be able to expand & Factorise Standard form Students will: • Be able to convert large and small numbers into standard form and vice versa • Be able to add and subtract numbers in standard form • Be able to multiply and divide numbers in standard form • Be able to use of a calculator in standard form calculations	TOPIC tests In class formative assessment	Identity: Indices: Constant: Coefficient: Variable:
	3	The foci for this term are proportion and probability building upon algebra and more simple proportion from KS3. There is some flexibility within the term to support any shared classes but algebra has to precede more complex proportion as prerequisite knowledge. Although probability forms a large part of the GCSE specification, there	TOPIC tests In class formative assessment	Substitute: Proportion: Mutually exclusive: Theoretical probabilty:

		are no future topics that use probability as a foundation so it is started during year 9. Algebra Students will: • Be able to simplify expressions and use substitution to solve problems Proportion Students will: • Be able to solve problems involving direct and inverse proportion, including graphical and algebraic representations Probability Students will: • Be able to apply systematic listing strategies • Be able to describe probability using the probability scale, tables and frequency trees • Be able to calculate expected outcomes • Be able to use mutually exclusive events sum to one • Be able to calculate experimental and theoretical probability • Be able to use sets and combinations of sets using Venn diagrams		
	4	The focus for this term is sequences building upon proportion from the previous term. There is some flexibility within the term to support any shared classes but algebraic manipulation has to precede Pythagoras' theorem as prerequisite knowledge. Algebra Students will:	TOPIC tests In class formative assessment	Sequence: Pythagoras' theorem: Arithmetic: Term: Linear:

		• Be able to solve linear Equations • Be able to express, use and solve linear Inequalities Sequences Students will: • Be able to generate terms of a sequence from either a term-to-term or a position-to-term rule • Be able to write the term-to-term definition of a sequence in words • Be able to find the nth term of a linear sequence e.g. 3, 5, 7, 9… • Be able to recognise and use sequences of triangular, square and cube numbers • Be able to use the nth term of an arithmetic sequence to decide if a given number is a term in the sequence, or find the first term over a certain number • Be able to use the nth term of an arithmetic sequence to find the first term greater/less than a certain number Pythagoras Students will: • Be able to understand and use Pythagoras theorem		
	5	The focus for this term is geometry building upon angle facts from KS3. There is some flexibility within the term to support any shared classes but basic vectors has to precede translation as prerequisite knowledge. Angle facts	TOPIC tests In class formative assessment	Sum: Interior: Exterior: Translation:

		Students will: • Be able to calculate interior and exterior angles, angle sums Basic Vectors Students will: • Be able to describe translations as 2D vectors • Be able to translate a given shape by a vector • Be able to use addition and subtraction of vectors, multiplication of vectors by a scalar, and diagrammatic and column representations of vectors • Be able to represent information graphically given column vectors • Be able to identify two column vectors which are parallel Transformations Students will: • Understand and use reflection and rotation symmetry • Understand and use transformations - rotation, reflection, translation, enlargement • Be able to identify the equation of a line of symmetry • Be able to identify the scale factor of an enlargement of a shape as the ratio of the lengths of two corresponding sides, simple integer scale factors, or simple fractions		Reflection: Rotation: Enlargement: Vector: Clockwise:
	6	The focus for this term is geometry building upon the previous term and 3D shapes from KS3. There is some flexibility within the term to	TOPIC tests	Chord: Circumference:

		support any shared classes but circles has to precede the surface area of a cylinder as prerequisite knowledge. Circles Students will: • Know circle definitions - centre, radius, chord, diameter, circumference, tangent, arc, sector and segment • Be able to use Circumference of a circle = $2\pi r = \pi d$ and area of a circle = πr^2 • Be able to calculate arc lengths, angles and areas of sectors of circles Surface Area Students will: • Be able to estimate surface areas by rounding measurements to 1 significant figure • Be able to sketch nets of cuboids and prisms Plans & Elevations Students will: • Be able to identify properties of the faces, surfaces, edges and vertices of cubes, cuboids, prisms, cylinders, pyramids, cones and spheres • Be able to draw sketches of 3D solids • Be able to interpret Plans and elevations of 3D shapes • Be able to construct plans and elevations of 3D shapes	In class formative assessment	Tangent: Arc: Sector: Segment: Surface area: Plan view:
10	**1**	The focus for this term is algebra building upon solving equations and inequalities in term 4 of year 9. There is some flexibility within the term to support any shared classes but linear graphs has to precede simultaneous equations as prerequisite knowledge. Volume builds on term 6 of year 8 to cover more complex solids. Algebra Students will:	TOPIC tests In class formative assessment	

		• Be able to rearrange Formulae • Understand and use linear Graphs including y = mx + c • Understand linear simultaneous equations Volume 2		
	2	The focus for this term is algebra building upon linear graphs in term 1. There is some flexibility within the term to support any shared classes but quadratic graphs has to precede more complex graphs as prerequisite knowledge. Algebra Students will: • Be able to draw and Interpret quadratic graphs, turning points and roots • Understand more complex Graphs • Understand and use compound Measures • Be able to expand, factorise & manipulate Algebraic Fractions (Higher only)	TOPIC tests In class formative assessment	
	3	There is some flexibility within the term to support any shared classes but averages has to precede comparison of data sets as prerequisite knowledge. Probability builds upon year 9 term 3 and further proportion is only required for the higher GCSE. It builds more complex questions on year 9 term 3 Probability Students will: • Be able to apply systematic listing strategies • Be able to describe probability using the probability scale, tables and frequency trees • Be able to calculate expected outcomes • Be able to use mutually exclusive events sum to one • Be able to calculate experimental and theoretical probability • Be able to use sets and combinations of sets using Venn diagrams	TOPIC tests In class formative assessment	

		Statistics Students will: • Be able to draw and Interpret Frequency tables, bar charts, composite bar charts, pie charts, pictograms, vertical line charts, stem and leaf (including back-to-back) • Understand Mean, mode, median, modal class • Understand Range and outliers • Be able to compare the mean, median, mode and range (as appropriate) of two distributions using bar charts, dual bar charts, pictograms and back-to-back stem and leaf • Be able to recognise the advantages and disadvantages between measures of average • Be able to scatter graphs - recognise correlation • Be able to recognise types of data: primary secondary, quantitative and qualitative • Understand sample and population • Understand Listing combinations • Understand Sampling - infer properties of populations or distributions from a sample, while knowing the limitations of sampling • Be able to interpret and construct tables and line graphs for time series data • Understand Scatter graphs - draw estimated lines of best fit; make predictions; interpolate and extrapolate apparent trends while knowing the dangers of so doing • Understand cumulative frequency • Understand Box plots (Higher only) Further Proportion (Higher only) Students will: • Be able to interpret equations and graphs that describe direct and inverse proportion		

		• Be able to identify direct proportion from a table of values, by comparing ratios of values, for x squared and x cubed relationships • Be able to write statements of proportionality for quantities proportional to the square, cube or other power of another quantity • Be able to use y = kx to solve direct proportion problems, including questions where students find k, and then use k to find another value • Be able to solve problems involving inverse proportionality		
	4	The focus for this term is ratio and proportion incorporating similarity and compound interest building upon proportion in year 9 term 3. There is some flexibility within the term to support any shared classes but ratio has to precede similarity as prerequisite knowledge. Ratio (further) Students will: • Be able to simplify ratios • Be able to divide a quantity into a given ratio • Be able to write ratios as fractions • Be able to compare lengths, areas and volumes using ratio notation and scale factors • Be able to solve ratio problems involving the change of a ratio within a question • Be able to relate ratios to fractions and to linear functions • Be able to solve complex multi-step problems involving fractions and probability (Higher only) Growth & Decay Students will: • Be able to set up, solve and interpret the answers in growth and decay problems, including compound interest • Be able to identify the interest rate in compound interest questions	TOPIC tests In class formative assessment	

		• Be able to set up, solve and interpret the answers in growth and decay problems Similar Shapes (Higher only) • Understand and use SSS, SAS, ASA and RHS conditions to prove the congruence of triangles using formal arguments, and to verify standard ruler and pair of compasses constructions; • Be able to solve angle problems by first proving congruence; • Understand similarity of triangles and of other plane shapes, and use this to make geometric inferences; • Be able to prove that two shapes are similar by showing that all corresponding angles are equal in size and/or lengths of sides are in the same ratio/one is an enlargement of the other, giving the scale factor; • Be able to use formal geometric proof for the similarity of two given triangles; • Understand the effect of enlargement on angles, perimeter, area and volume of shapes and solids; • Be able to identify the scale factor of an enlargement of a similar shape as the ratio of the lengths of two corresponding sides, using integer or fraction scale factors; • Be able to write the lengths, areas and volumes of two shapes as ratios in their simplest form; • Be able to find missing lengths, areas and volumes in similar 3D solids; • Know the relationships between linear, area and volume scale factors of mathematically similar shapes and solids; • Be able to use the relationship between enlargement and areas and volumes of simple shapes and solids; • Be able to solve problems involving frustums of cones where you have to find missing lengths first using similar triangles.		
	5	The focus for this term is shape and space for foundation building upon year 9 term 4. There is some flexibility within the term to support any shared classes but surds has to precede trigonometry as prerequisite knowledge for rationalisng exact values.	TOPIC tests In class formative assessment	

		Pythagoras Review (foundation only) Students will: Be able to understand and use Pythagoras theorem Further Proportion (Higher only) Students will: • Be able to set up and use equations to solve word and other problems involving direct proportion or inverse proportion Bearings and scale drawings (foundation only) Students will: • Know and use compass directions • Be able to use three-figure bearings to specify direction • Be able to mark on a diagram the position of point B given its bearing from point A • Be able to give a bearing between the points on a map or scaled plan • Be able to given the bearing of a point A from point B, work out the bearing of B from A • Be able to use accurate drawing to solve bearings problems • Be able to solve locus problems including bearings Surds (Higher only) Students will: • Be able to simplify and manipulate algebraic expressions involving surds • Be able to simplify surd expressions involving squares (e.g. √12 = √(4 × 3) = √4 × √3 = 2√3) • Understand surd notation, e.g. calculator gives answer to sq. rt 8 as 4 rt 2		

		• Be able to expand and simplify single and double brackets involving surd manipulation • Be able to rationalise denominators Right Angled Trigonometry (Higher only) • Understand, use and recall the trigonometric ratios sine, cosine and tan, and apply them to find angles and lengths in general triangles in 2D figures; • Be able to use the trigonometric ratios to solve 2D problems; • Be able to Find angles of elevation and depression; • Know the exact values of sin θ and cos θ for θ = 0°, 30°, 45°, 60° and 90°; know the exact value of tan θ for θ = 0°, 30°, 45° and 60°.		
	6	End of Year revision programme (foundation) There is some flexibility within the term to support any shared classes. Bearings and scale drawings follows trigonometry as at higher Trigonometry is a prerequisite for more complex questions. Bearings and scale drawings (higher only) Students will: • Know and use compass directions • Be able to use three-figure bearings to specify direction • Be able to mark on a diagram the position of point B given its bearing from point A • Be able to give a bearing between the points on a map or scaled plan • Be able to given the bearing of a point A from point B, work out the bearing of B from A • Be able to use accurate drawing to solve bearings problems • Be able to solve locus problems including bearings	TOPIC tests In class formative assessment	

		Bounds (Higher only) Students will: • Be able to calculate the upper and lowers bounds of numbers given to varying degrees of accuracy • Be able to calculate the upper and lower bounds of an expression involving the four operations • Be able to find the upper and lower bounds in real-life situations using measurements given to appropriate degrees of accuracy • Be able to find the upper and lower bounds of calculations involving perimeters, areas and volumes of 2D and 3D shapes • Be able to calculate the upper and lower bounds of calculations, particularly when working with measurements Transformations (Higher only) Students will: • Understand and use reflection and rotation symmetry • Understand and use transformations - rotation, reflection, translation, enlargement • Be able to identify the equation of a line of symmetry • Be able to identify the scale factor of an enlargement of a shape as the ratio of the lengths of two corresponding sides, simple integer scale factors, or simple fractions • Be able to describe the changes and invariance achieved by combinations of rotations, reflections and translations		

	1	Foundation	GCSE paper 1 non-calculator

11		The focus for this term for foundation is shape and space building upon year 9 terms 4 & 5. There is some flexibility within the term to support any shared classes but algebra review has to precede more right angled trigonometry to facilitate rearranging formulae as prerequisite knowledge. Algebra review Right Angled Trigonometry • Understand, use and recall the trigonometric ratios sine, cosine and tan, and apply them to find angles and lengths in general triangles in 2D figures; • Be able to use the trigonometric ratios to solve 2D problems; • Be able to find angles of elevation and depression; • Know the exact values of sin θ and cos θ for θ = 0°, 30°, 45°, 60° and 90°; know the exact value of tan θ for θ = 0°, 30°, 45° and 60°. Similar Shapes Students will: • Be able to understand that similar shapes are enlargements of each other and angles are preserved – define similar in this unit • Be able to identify shapes which are similar; including all circles or all regular polygons with equal number of sides • Be able to apply the concepts similarity, including the relationships between lengths in similar figures • Understand similarity of triangles and of other plane shapes, use this to make geometric inferences, and solve angle problems using similarity • Understand the effect of enlargement on perimeter of shapes • Be able to solve problems to find missing lengths in similar shapes	

		The focus for this term for higher is algebra building upon year 10 term 1. There is some flexibility within the term to support any shared classes. Higher Solving Quadratics & Further Simultaneous Equations Students will: • Be able to solve quadratic equations algebraically by factorising (no rearrangement required) • Be able to find approximate solutions to quadratic equations using a graph • Be able to solve quadratic equations (that also require rearrangement) by factorising, completing the square and by using the quadratic formula • Be able to solve linear/quadratic simultaneous equations • Be able to solve quadratic equations arising from algebraic fraction equations • Be able to identify from a graph if a quadratic equation has any real roots • Be able to solve linear/circles simultaneous equations Quadratic sequences • Continue a quadratic sequence and use the nth term to generate terms; • Continue a quadratic sequence and use the nth term to generate terms; • Find the nth term of quadratic sequences; Recurring decimals Students will: Be able to convert recurring decimals to fractions	
	2	The focus for this term is shape and space building upon similar shapes in term 1. There is some flexibility within the term to support any shared classes. Foundation Congruence	Full GCSE past paper set

		Students will: • Be able to identify congruent shapes by eye • Understand that distances and angles are preserved under reflections, so that any figure is congruent under this transformation • Know and use congruence criteria for triangles (SSS, SAS, ASA, RHS) • Be able to solve angle problems involving congruence Constructions & Loci Students will: • Be able to draw circles and arcs to a given radius or given the diameter • Be able to measure and draw lines, to the nearest mm • Be able to measure and draw angles, to the nearest degree The focus for this term is algebra building upon lquadratics in term 1. There is some flexibility within the term to support any shared classes but quadratic graphs has to precede more complex graphs as prerequisite knowledge. Higher Functions Students will: • Be able to find f(x) + g(x) and f(x) – g(x), 2f(x), f(3x) etc. algebraically • Be able to find the inverse of a linear function • Know that f –1(x) refers to the inverse function • Understand composite functions - for two functions f(x) and g(x), find gf(x) Quadratic Inequalities Students will: • Be able to sketch a graph of a quadratic function, by factorising or by using the formula, identifying roots, y-intercept and turning point by completing the square • Be able to solve quadratic inequalities in one variable, by factorising and sketching the graph to find critical values	

		• Be able to represent the solution set for inequalities using set notation, i.e. curly brackets and 'is an element of' notation e.g. the solution set of $x^2 - 3x - 10 < 0$ as {x: x < -3} {x: x > 5} Further Trigonometry & Trigonometric Graphs Students will: • Understand and use sine rule and cosine rule • Be able to calculate area of a triangle using trigonometry. Also use to find sides or angles of any triangle • Be able to sketch and interpret graphs of the trigonometric functions y = sin x, y = cos x and y= tan x • Be able to apply sine and cosine rule to questions involving bearings • Be able to apply trigonometry in 3D configurations	
	3	Foundation End of GCSE revision programme The focus for this term is algebra building upon term 2. There is some flexibility within the term to support any shared classes Higher Iteration Students will: • Be able to find approximate solutions to equations numerically using iteration • Be able to use iteration with simple converging sequences Circle Theorems Students will: Be able to apply and prove the standard circle theorems concerning angles, radii, tangents and chords, and use them to prove related results Algebraic Proof Students will:	Fortnightly GCSE past papers, pre-seen and unseen

		• Understand the language of proof: odd, even, product, sum, integer, consecutive, square, difference etc. • Be able to solve 'Show that' and proof questions using consecutive integers (n, n + 1), squares a2, b2, even numbers 2n, odd numbers 2n +1 Statistics (Further) Students will: • Be able to draw and interpret Histograms	
	4	Foundation End of GCSE revision programme The focus for this term is shape and space building upon year 10 term 1. There is some flexibility within the term to support any shared classes Higher Congruence Students will: • Be able to identify congruent shapes by eye • Understand that distances and angles are preserved under reflections, so that any figure is congruent under this transformation • Understand and use congruence criteria for triangles (SSS, SAS, ASA, RHS) • Be able to solve angle problems involving congruence Vectors Students will: • Understand addition and subtraction of vectors, multiplication of vectors by a scalar, and diagrammatic and column representations of vectors • Be able to represent information graphically given column vectors	Fortnightly GCSE past papers, pre-seen and unseen Full GCSE past paper set

		• Be able to identify two column vectors which are parallel • Be able to solve geometric problems in 2D where vectors are divided in a given ratio • Be able to produce geometrical proofs to prove points are collinear and vectors/lines are parallel Gradients (Further), and area under a graph Students will: • Be able to recognise and use the equation of a circle with centre at the origin • Be able to find the equation of a tangent to a circle at a given point • Be able to estimate area under a quadratic or other graph by dividing it into trapezia. Interpret the results in cases such distance–time graphs, velocity–time graphs and graphs in financial contexts • Be able to interpret the gradient of linear or non-linear graphs, and estimate the gradient of a quadratic or non-linear graph at a given point by sketching the tangent and finding its gradient • Be able to interpret the gradient of non-linear graph in curved distance–time and velocity–time graphs Graphical transformations Students will: • Be able to translate and reflect functions Constructions & Loci Students will: • Be able to draw circles and arcs to a given radius or given the diameter • Be able to measure and draw lines, to the nearest mm • Be able to measure and draw angles, to the nearest degree • Be able to use the standard ruler and compass constructions (perpendicular bisector of a line segment, constructing a perpendicular to a given line from/at a given point, bisecting a given angle) • Be able to construct angles of 90°, 45°	

		• Be able to use constructions to construct given figures and solve loci problems; know that the perpendicular distance from a point to a line is the shortest distance to the line	
	5	Foundation and Higher End of GCSE revision programme	
	6		