



Number	Geometry	Ratio & proportion	Algebra	Statistics
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Unit Number	Topic name	Term	Skills developed*	Link to NC subject content	Prior learning	Next link in curriculum
1	STRAIGHT LINE GRAPHS	Autumn	Develop algebraic and graphical fluency, including understanding linear and simple quadratic functions	- Reduce a given linear equation to the form $y=mx+c$ - Calculate and interpret gradients and intercepts of graphs - Use linear and quadratic graphs to find values of y for given values of x	Y8 Autumn – Working in the Cartesian Plane	KS4/GCSE
2	FORMING AND SOLVING EQUATIONS	Autumn	Move freely between different numerical, algebraic, graphical and diagrammatic representations [for example, equivalent fractions, fractions and decimals, and equations and graphs]	- Use algebraic methods to solve linear equations in one variable (including all forms that require rearrangement) - Rearrange formulae to change the subject - Model situations or procedures by translating them into algebraic expressions, or formulae and graphs	Y8 Spring – Brackets, Equations and Inequalities	KS4/GCSE
3	TESTING CONJECTURES	Autumn	Make and test conjectures about patterns and relationships; look for proofs or counterexamples.	- Begin to reason deductively in geometry, number and algebra. - Use the concepts and vocabulary of prime numbers, factors (or divisors), multiples, common factors, common multiples, highest common factor, lowest common multiple, prime factorisation. - Simplify and manipulate algebraic expressions to maintain equivalence by expanding products of two or more binomials.	Y8 Spring – Brackets, Equations and Inequalities	KS4/GCSE



4	THREE DIMENSIONAL SHAPES	Autumn	Derive and apply formulae to calculate and solve problems involving: perimeter and area of triangles, parallelograms, trapezia, volume of cuboids (including cubes) and other prisms (including cylinders)	- Find the surface area of cubes, cuboids, triangular prisms and cylinders - Find the volume of cubes, cuboids, prisms and cylinders	Y8 Summer – Area of Trapezia and Circles	KS4/GCSE
5	CONSTRUCTIONS AND CONGRUENCY	Autumn	Begin to reason deductively in geometry, number and algebra, including using geometrical constructions	- Construct and interpret scale drawings - Construct angle and line bisectors, as well as locus - Identify and explore congruent figures	- Y8 Autumn – Ratio and Scale - Y8 Summer – Line Symmetry and Reflection	KS4/GCSE
6	NUMBER	Spring	Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems	Solve problems with integers, decimals, fractions and standard form	Y8 Spring – Number Sense	KS4/GCSE
7	USING PERCENTAGES	Spring	Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial mathematics	Solve problems involving percentage change, including: percentage increase, decrease and original value problems and simple interest in financial mathematics	Y9 Spring – Fractions and Percentages	KS4/GCSE
8	MATHS AND MONEY	Spring	Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial mathematics	- Calculate with simple and compound interest - Solve problems with Value Added Tax - Solve problems with exchange rates	- Y9 Spring – Using Percentages - Y8 Autumn – Ratio and Scale	KS4/GCSE



9	DEDUCTION	Spring	● Begin to reason deductively in geometry, number and algebra, including using geometrical constructions	● Apply the properties of angles at a point, angles at a point on a straight line, vertically opposite angles ● Interpret mathematical relationships both algebraically and geometrically	● Y8 Summer – Angles in Parallel Lines and Polygons	● KS4/GCSE
10	ROTATION AND TRANSLATION	Spring	● Begin to reason deductively in geometry, number and algebra, including using geometrical construction	● Identify properties of, and describe the results of, translations, rotations and reflections applied to given figures ● Find the results of a series of transformations	● Y7 Summer – Geometric Reasoning	● KS4/GCSE
111 11	PYTHAGORAS THEOREM	Spring	● Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems	● Apply angle facts, triangle congruence, similarity and properties of quadrilaterals to derive results about angles and sides, including Pythagoras' Theorem, and use known results to obtain simple proofs	● Y7 Summer – Geometric Reasoning	● KS4/GCSE
1212 12	ENLARGEMENT AND SIMILARITY	Summer	● Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems.	● Construct similar shapes by enlargement, with and without coordinate grid ● Apply angle facts, triangle congruence, similarity and properties of quadrilaterals to derive results about angles and sides, including Pythagoras' Theorem, and use known results to obtain simple proofs	● Y9 Spring – Rotation and Translation ● Y7 Summer – Geometric Reasoning	● KS4/GCSE
1313 13	SOLVING RATIO AND PROPORTION PROBLEMS	Summer	● Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems.	● Understand that a multiplicative relationship between two quantities can be expressed as a ratio or a fraction ● Solve problems involving direct and inverse proportion, including graphical and algebraic representations	● Y8 Autumn – Ratio and Scale	● KS4/GCSE



				● 14 Use compound units such as speed, unit pricing and density to solve problems		
14	RATES	Summer`	● Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems	● Use compound units such as speed, unit pricing and density to solve problems ● change freely between related standard units [for example time, length, area, volume/capacity, mass]	● Y8 Spring – Number Sense	● KS4/GCSE
15	PROBABILITY	Summer	● Explore what can and cannot be inferred in statistical and probabilistic settings, and begin to express their arguments formally	● Enumerate sets and unions/intersections of sets systematically, using tables, grids and Venn diagrams ● Generate theoretical sample spaces for single and combined events with equally likely, mutually exclusive outcomes and use these to calculate theoretical probabilities	● Y8 Autumn – Sets and Probability ● Y8 Autumn – Tables and Probability	● KS4/GCSE
16	ALGEBRAIC REPRESENTATION	Summer	● Identify variables and express relations between variables algebraically and graphically	● Recognise, sketch and produce graphs of linear and quadratic functions of one variable with appropriate scaling, using equations in x and y and the Cartesian plane ● Find approximate solutions to contextual problems from given graphs of a variety of functions, including piecewise linear, exponential and reciprocal graphs	● Y9 Autumn – Forming and Solving Equations	● KS4/GCSE

* Throughout the entire curriculum, content and skills are revisited and reused continuously. The colour code refers to the main strand each topic falls under.