Content Area	Strand	Year 7	Year 8	Year 9	Year 10	Year 11
Number	Place Value	Understand and use place value Compare and order numbers including directed numbers	Revisit comparing and ordering	Types of number		
	Operations	Use four operations with positive integers and decimals Multiply and divide by positive powers of 10 Order of operations Multiply by 0.1 and 0.01 Use four operations with directed numbers Use known facts to derive others	Revise order of operations			
	Rounding and estimation	Round to powers of 10 and 1sf	Round to a given number of dp or sf, use estimation Use error interval notation		Rounding and limits of accuracy	
	Standard Form	Write 1sf numbers in standard form	Write numbers of any size in standard form	Revisit standard form	Revise standard form	
	Factors and Multiples	Use factors and multiples HCF and LCM Prime factorisations		Revisit HCF LCM Revisit prime factorisation	Revise factors, multiples and primes	
	FDP	Add and subtract fractions including mixed numbers Convert between fractions and decimals and percentages Find fractions of amounts Find percentages of amounts	Multiply and divide fractions including mixed numbers Comparing FDP Express one number as a fraction of another Percentage increase and decrease, using multipliers Express one quantity as a percentage of another Reverse percentage change	Revisit fraction arithmetic Repeated percentage change Revisit reverse percentage change	Revisit converting between FDP Working with ratios and fractions Simple and compound interest Finding original values	Proving equivalence of different forms of number Review multiplicative change "Show that" questions with percentages
	Recurring Decimals			Rational vs Real Numbers	Converting recurring decimals	Proving equivalence of different forms of number
	Counting					Product rule for counting
	Time		Converting between units of time			
	Money		Calculate with money	Revisit financial mathematics	Reviewed in interest calculations	
	Units		Convert metric units of length and area			
	Using a calculator	Use a calculator	Explore calculator and non-calculator methods		Work with exact answers	
	Surds		Use negative and fractional indices		Calculate with surds	Variation with powers and roots
Algebra	Functions	Function machines Represent functions graphically				Functions including composite and inverse
	Substitution	Substitute into expressions including directed number				Substitute into SUVAT
	Notation	Algebraic notation Understand the difference between equality and equivalence	Identify and use formulae, expressions, identities and equations	Revise algebraic representation		
	Fractions	Simple algebraic fractions				Algebraic fractions
	Manipulation	Explore related algebraic expressions Collecting like terms including directed numbers	Expanding and factorise single brackets Expand a pair of binomials Simplify expressions including brackets	Revisit expanding a pair of binomials	Factorising quadratics with a=1	Completing the square
	Indices		Rules of indices		Work with powers and roots	
	Formulae			Change the subject of a formulae		Revisit changing the subject of a formula including where the subject appears more than once
	Proof					Algebraic proof
	Equations and Inequalities	Form and solve one and two step equations	Form and solve equations with brackets or unknowns on both sides Solve inequalities	Form and solve equations and inequalities with unknowns on both sides Representing inequalities	Form and solve linear and non-linear simultaneous equations Representing inequalities on number lines	
	Quadratics				Solve quadratics equations and inequalities by factorising	Revisit solving quadratic equations Solve quadratics using the formulae and completing the square
	Graphs		Conversion and direct proportion graphs Using coordinates and plotting horizontal and vertical graphs and y=mx+c Exploring gradient Exploring non-linear graphs	Simplify, use, rearrange and interpret y=mx+c Parallel lines Interpret graphs in various forms including piecewise linear Solve simultaneous equations graphically	Revisit solving simultaneous equations graphically	Real life graphs including speed distance and time Equation of a circle and tangents to circles Perpendicular lines Roots, quadratic, cubic, reciprocal and trig graphs Transforming graphs
	Sequences	Recognise linear and non-linear sequences Generate sequences from an algebraic rule	Revisit generating sequences with more complex rules Find nth terms	Testing conjectures about sequences Revise nth term rule	Sequences with surds Find quadratic nth term	
Ratio, Proportion and Rates of Change	Units	Converting metric units	Currency conversions	Converting compound units	Revise currency conversions	
	Money			Unit pricing problems	Revise best buys	
	Scale Drawing		Understand and use scale factors Scale diagrams and maps	Revisit scale drawings		
	Similar Shapes		Similar shapes Convert area and volume measures		Revisit similar shapes Area and volume similarity	
	Direct and Inverse Proportion		Conversion/direct proportion graphs	Solve direct proportion problems and revisit graphs Inverse proportion and graphs		Direct and inverse proportion numerically and graphically
	Similar Shapes				Enlargement	
	Compound Measures			Speed, distance and time and density		Pressure and density
	Ratio		Understand and use ratio notation Divide in a ratio Work out parts and wholes pi as a ratio Use the form 1:n		Ratios and fractions Ratios in the context of area and volumes	
	Ratio in Shape		Link gradient and ratio			Gradients and curves and area under curves
	Percentage Change			Repeated percentage change	Repeated percentage change including compound interest Growth and decay problems	
	Iteration				Iterative processes	
Geometry and Measures	Perimeter	Solve perimeter problems	Circumference of a circle		Arc length	Review perimeter, area and volume formulae as a context for rearrangement
	Area	Areas of rectangles, parallelograms and triangles Area of trapezium	Area of a circle Area of compound shapes Revisit area of a trapezium	Surface area of cuboids, cylinders and prisms	Area of a sector Surface area and volume of cylinders, cones and spheres	
	Volume			Volume of cuboids, cylinders and prisms Explore volume of cones, spheres and compound shapes		Volume of a pyramid
	Notation	Geometric notation and parallel and perpendicular lines Name and construct polygons	Revise notation		Parts of a circle Revisit names and properties in teh context of enlargement	Using correct language in 'show that'/proof questions
	Constructions	Draw lines, angles and simple shapes	Standard ruler and compass constructions	Revisit ruler and compass constructions with loci		Plans and elevations and revisit loci
	Symmetry		Recognise line symmetry	Recognise rotational symmetry		
	Transformations	Perform reflections and work with scale factors		Perform rotations and translations and a series of transformations	Similarity and enlargement including negative scale factors	
	Properties	Properties of triangles and quadrilaterals	Explore diagonals of quadrilaterals and their angles	Properties of 3D shapes and testing conjectures about shapes		Revisit shape properties in the context of reasoning
	Angles	Angles at a point and on a straight line Vertically opposite angles Simple angle proofs Angles in triangles and quadrilaterals Angles in parallel lines	Find and prove simple geometric facts Interior and exterior angles of polygons Revisit angles in parallel lines	Chains of reasoning to find angles	Revisit proof with angle rules	
	Bearings				Interpret and use bearings and revisit Pythagoras and trig in this context	
	Pythagoras			Understand and use Pythagoras' theorem Use Pythagoras' theorem in 3D shapes Explore ratios in right-angled triangles and show that a triangle is right-angled	Revise Pythagoras' theorem	Revisit Pythagoras and trigonometry
	Trigonometry				Use trigonometry to find missing sides and angles in right-angled triangles Use sine, cosine and area rules Exact trig values	Revisit trigonometry in the context of functions Exploring trigonometric graphs and transformations of these
	Similarity and Congruence			Explore congruence	Prove shapes are similar or congruent	Revisit congruent triangle proofs
	Circle Theorems				Prove and use the first four circle theorems	Prove and use the remaining circle theorems
	Vectors				Understand and use vectors Geometric proof with vectors	
Probability	Language	Use the language of probability Use the probability scale			Mutually exclusive and independent events	
	Probability	Calculate simple probabilities Know the sum of probabilities is 1		Compare experimental and theoretical probability Use frequency trees to find probabilities Simple tree diagrams	Effect of sample size on estimated probabilities Use tree diagrams	
	Sample Spaces	Sample spaces	Construct sample spaces for more than one event Use sample spaces to find probabilities			Review using sample spaces and probability rules
	Sets and Venn Diagrams	Understand and use set notation, including Venn diagrams Complement of a set	Use tables and Venn diagrams to find probabilities		Conditional probabilities	
	Counting		Use the product rule for finding the total number of outcomes			
Statistics	Representing Data	Solve problems with line charts and bar charts Construct and interpret pie charts	Multiple bar charts Construct and interpret frequency tables, grouped and ungrouped, and two-way tables Recognise different types of data Misleading graphs Line graphs Collecting data		Histograms Cumulative frequency diagrams and box plots Comparing distributions using diagrams Time series graphs and frequency polygons	Revise comparing distributions using diagrams Describing a population
	Averages and Range	Find the median and range Find the mean	Find the mode Identify outliers Find the mean from a grouped or ungrouped frequency table Compare distributions using statistical measures		Find the modal class Finding the median and quartiles from cumulative frequency diagrams Comparing distributions	Revisit comparing distributions using data
	Scatter Graphs		Scatter graphs Correlation Lines of best fit		Understand the risks of extrapolation	