DJCS KS3 Mathematics overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 7	**Place value, add and subtract** • Place value (in decimals) • Add and subtract (inc decimals and negative numbers) • Estimation • Perimeter • Word Problems • Adding and subtracting in different number bases (e.g time and binary) •	**Multiply and Divide** • Multiply and divide (inc decimals and negative numbers) • Area of a rectangle and a triangle • Calculate the mean • Factors, HCF, primes	**Geometry** • Draw, measure and name acute and obtuse angles • Find unknown angles (straight lines, at a point, vertically opposite) • Properties of triangles and quadrilaterals • Areas of parallelograms	**Fractions** • Equivalent fractions • Compare and order fractions and decimals • Multiples and LCM • Add and subtract fractions • Change mixed numbers to improper fractions and vice versa • Add and subtract mixed numbers • Fraction of a quantity	**Algebra** • Order of operations • Substitution • Simplifying algebraic expressions • Solve word problems with expressions • Sequences (term-to-term not nth term)	**Percentages and pie charts** • Convert between percentages, fractions and decimals • Percentage of a quantity • Find the whole given the part and the percentage
Year 8	**Number** • Indices • Prime factorisation to find LCM, HCF, squares, cubes • Order of operations • Rounding, significant figures and estimation • Multiply and divide fractions and mixed numbers • Calculate with positive rational and decimal numbers • Using a calculator	**Algebraic expressions** • Negative numbers and inequality statements • Calculate and evaluate expressions with rational numbers • Algebraic manipulation • Linear equations • Expressions and equations from real world situations	**2D geometry** • Draw accurate triangles and quadrilaterals (ruler, protractor, compasses) • Find unknown angles (including parallel lines) • Conversion between length units and area units • Area and perimeter of composite figures • Area of trapezium • Area of circles	**Proportional reasoning** • Convert between percentages, fractions and decimals • Percentage increase and decrease, finding the whole given the percentage • Ratio (equivalent, of a quantity) and rate • Speed, distance, time • Multiply and divide fractions	**3D geometry** • Conversion between volume units • Visualise and identify 3D shapes and their nets • Circumference of a circle • Surface area and volume of a cuboid, prism, cylinder, composite solids	**Statistics** • Collecting and organising data • Construction and interpretation of graphs – pictograms, bar charts, pie charts, histograms, line graphs • Interpret and compare statistical representations using range and median
Year 9	**Ratio and Proportion** • Fractions Decimals and Percentages • Ratio • Calculating with scales • Direct and inverse proportion • Best buy, ratio and proportion problems.	**Algebraic Expressions** • Cartesian coordinates • Linear graphs • Change the subject of a formula • Expansion • Factorisation • Algebraic fractions • Sequences; nth term	**2D Geometry** • Construction and loci • Triangles and quadrilaterals (angles and diagonals) • Angles in polygons • Congruence and similarity	**Equations and inequalities** • Equations • Inequalities • Constructing equations and inequalities • Quadratic equations • Simultaneous linear equations	**3D Geometry** • Pythagoras' theorem • Surface area and volume of pyramids, cones and spheres • Trigonometry	**Statistics** • Comparing two sets of data • Stem-and-leaf diagrams • Mean of grouped data • Scatter graphs • Probability