Year 7 Mathematics Progression Grid	Number	Algebra	Ratio, proportion and rates of change	Geometry and measures	Statistics and probability
Emerging	• Understand and use place value • Order positive and negative integers • Know the symbols =, ≠, <, >, ≤, ≥ • Know the square numbers • Use all four operations on positive and negative integers • To use priority of operations (BIDMAS) • Can recognise fractional areas • Number bonds up to 100	• Know basic algebraic notation including: ab in place of a × b; 3y in place of y + y + y and 3 × y; a^2 in place of a × a, a^2b in place of a × a × b; a/b in place of a ÷ b.	• Use ratio notation	• Know the conventions for a 2D coordinate grid • Know that area of a rectangle = l × w • Know the meaning of faces, edges and vertices • Know the names of special triangles and quadrilaterals	• Understand the what is meant by the mean, median, mode and range.
Developing (in addition to Emerging)	• Know the first 6 cube numbers • Know the first 12 triangular numbers • Use technical language such as prime numbers, factors, multiple, common factors and lowest common multiple. • Use positive integer powers and associated real roots (square and cube), recognise powers of 2, 3, 4, 5 • Express one quantity as a fraction of another • Define percentage as 'number of parts per hundred' • Express one quantity as a percentage of another • Can list the first multiples of integers • Can list factors of an integer • Can find equivalent fractions by multiplying •Written 3-digit addition and subtraction involving decimals • To be able to round numbers to the nearest whole, 10, 100 and 1000.	• Uses technical language such as algebraic expressions, equations and formulae • Substitute numerical values into algebraic expressions • Continue simple arithmetic and geometric sequences • Generate terms of a sequence from a term-to-term rule • Use and apply simple Formulae • Work with coordinates in the first quadrant	• To write a ratio in its simplest form • To express one quantity as a fraction of another, where the fraction is less than 1 and greater than 1	• Describe positions on the full coordinate grid (all four quadrants) • Use conventional terms and notations: points, lines, vertices, edges, planes, parallel lines, perpendicular lines, right angles, polygons, regular polygons and polygons • Draw diagrams from a written description • Identify properties of the faces, surfaces, edges and vertices of: cubes, cuboids, prisms, cylinders, pyramids, cones and spheres • Use standard units of measure (length, area, volume/capacity, mass, time, money, etc.) • Measure line segments and angles in geometric figures • Apply the properties of angles at a point, angles on a straight line, vertically opposite angles • Calculate perimeters of 2D shapes	• Calculate and interpret the mean, median, mode and range • Interpret and construct bar charts and pictograms
Secure (in addition to Developing)	• Check calculations using approximation and estimation • Use all four operations with positive and negative decimals and fractions • Compare and order fractions, including fractions > 1 • Order positive and negative integers, decimals and fractions • Solve problems involving percentage change, including percentage increase/decrease • Round numbers and measures to an appropriate degree of accuracy (nearest d.p) • Express numbers as a product of prime factors • Use standard measures of mass, length, time and money.	• Simplify and manipulate algebraic expressions by collecting like terms and multiplying a single term over a bracket • Use function machines with inputs and outputs • Express missing number problems algebraically • Substitute numerical values into formulae and expressions, including scientific formula • Use algebraic methods to solve linear equations in one variable • Work with coordinates in all four quadrants • Find the nth term of a sequence and generate terms of a sequence from a position-to-term rule	• Use scale factors, scale diagrams and maps • To change freely between related standard units (time, length, area, volume/capacity and mass) • To divide a given quantity into two parts in a given ratio • Understand that a multiplicative relationship between two quantities can be expressed as a ratio or a fraction	• Know that area of a parallelogram = b × h • Know that the area of a trapezium = ½ (a + b) x h • Use, read, write and convert between standard units, converting measurements of length, mass, volume and time • Derive and apply the properties and definitions of special types of quadrilaterals, including square, rectangle, parallelogram, trapezium, kite and rhombus; and triangles	• Construct and interpret pie charts
Advanced (in addition to Secure)	•Round numbers and measures to an appropriate degree of accuracy (nearest significant figure) • Apply the four operations, including formal written methods, to simple fractions (proper and improper), and mixed numbers	• Factorise algebraic expressions by removing common factors • Change the subject of a formula • Recognise, sketch and produce graphs of linear functions of one variable with appropriate scaling, using equations in x and y and the Cartesian plane	• To solve problems involving percentage change, including: percentage increase, decrease and original value problems and simple interest in financial mathematics • Solve problems involving direct and inverse proportion, including graphical and algebraic representations • To compare value for money using the unitary method	• Solve problems involving the calculation and conversion of units of measure • To calculate the area and perimeter of compound shapes.	• Understand how to find the mean from a frequency table
Excelling (in addition to Advanced)	• Count and perform simple sums with numbers in different base systems	• Simplify algebraic expressions involving indices. • Expand binomials	• Use compound units such as speed, unit pricing and density to solve problems		• Understand how to find the mean from a grouped frequency table