

Subject: Maths

	Year 7 - Novice	Year 7 - Capable	Year 7 - Expert
Term 1	Students should be able to: - Add and subtract 2-digit numbers mentally and using written methods - Know up to the 10 times table and associated division facts - Multiply and divide 2 and 3 digit numbers by one and two digit numbers - Understand and use place value for integers and decimals - Add and subtract decimals (1 and 2 decimal place's) - Multiply and divide by 10 and 100 - Use brackets and the hierarchy of operations - BODMAS - Round to the nearest 10 and 100 - Identify simple fraction equivalents – halves, quarters and tenths - Find simple fractions of amounts - Calculate a simple percentage of an amount - Recall squares of numbers up to 15 × 15 and the cubes of 1, 2, 3, 4, 5 and 10, also knowing the corresponding roots - Identify prime numbers up to 30 - Identify and learn the square numbers up to 12 squared - Identify common factors for pairs of numbers less than 50 - Simplify expressions involving the laws of indices. - Use and interpret algebraic notation. - Simplify algebraic expressions by collecting like terms - Substitute numerical values into formulae and expressions - Use algebraic methods to solve linear equations in one variable	Students should be able to: - Know division facts for multiplication tables up to 12x12 - Know how to divide by ½ - Find fractions of amounts - Add and subtract simple fractions with and without a calculator - Work interchangeably with terminating decimals and their corresponding fractions (such as 3.5 and 7/2 or 0.375 or 3/8) - Order decimals and fractions - Use the symbols =, ≠, <, >, ≤, ≥ - Calculate percentage changes - Express one quantity as a percentage of another - Understand and use place value for decimals, measures and integers of any size - Use the four operations, including formal written methods, applied to integers and decimals - Use conventional notation for the priority of operations: BIDMAS - Round to the nearest 1 or 2 decimal places - Use approximation through rounding to estimate answers - Identify HCF and LCM of pairs of numbers less than 100 by listing - Simplify expressions involving the laws of indices. - Understand and use the concepts and vocabulary of expressions, and terms - Simplify algebraic expressions to maintain by: collecting like terms and multiplying a single term over a bracket - Use algebraic methods to solve linear equations in one variable	Students should be able to: - Use short division to divide two and three digit numbers by a one or two digit number - Use the four operations, including formal written methods, applied to proper and improper fractions - Work interchangeably with terminating decimals and their corresponding fractions (such as 3.5 and 7/2 or 0.375 or 3/8) - Work with percentages greater than 100% - Solve problems involving percentage change, including: percentage increase, decrease and simple interest in financial mathematics - Compare two quantities using percentage - Order positive and negative integers, decimals and fractions - Find the reciprocal of a number - Round numbers to significant figures - Use approximation through rounding to estimate answers - Write prime factors using indices - Use Venn diagrams and product of primes to find HCF and LCM - Simplify expressions involving laws of indices - Simplify algebraic expressions by collecting like terms, multiplying a single term over a bracket and taking out common factors - Solve linear equations with integer coefficients where the unknown appears on both sides of the equation - Solve linear inequalities in one variable; represent the solution set on a number line
Term 2	Students should be able to: - Solve simple problems involving direct proportion - Use ratio notation - Divide quantities into simple ratios - Use formal column methods of addition and subtraction in the context of money - Understand how to tell the time in both digital and analogue formats - Solve time problems - Read a timetable - Understand that area is a measure of squares inside a shape - Find the area and perimeter of rectangles and composite shapes - Generate terms of a sequence from a term-to-term rule - Work with coordinates in the first quadrant - Recognise the equations of vertical and horizontal lines - Plot simple sequences on a graph - Transform 2D shapes using translations and reflections	Students should be able to: - Use ratio notation, including reduction to simplest form - Divide a given quantity into a ratio - Know and use standard metric and imperial measures - Recall and use conversions for metric measures for length - Understand speed and know the relationship between speed, distance and time - Calculate perimeter and area of triangles, parallelograms and composite shapes made of rectangles and triangles - Calculate volume of cuboids (including cubes) - Recognise arithmetic, geometric sequences and appreciate other sequences that arise. - Generate terms of a sequence from a position-to-term rule (nth term) - Work with coordinates in all four quadrants - Produce graphs of linear functions of one variable using equations in x and y - Transform 2D shapes using translations, reflections and rotations	Students should be able to: - Divide a given quantity into a ratio - Solve problems involving direct proportion - Work out conversions for units of area and volume/capacity - Understand speed and know the relationship between speed, distance and time - Calculate the perimeter and area of triangles, parallelograms, trapezia and composite shapes - Calculate and solve problems involving volume of cuboids (including cubes) - Recognise arithmetic, geometric sequences and appreciate other sequences that arise. - Recognise arithmetic sequences and find the nth term - Produce graphs of linear functions of one variable using equations in x and y - Interpret real life graphs - Transform 2D shapes using translations, reflections and rotations - Construct similar shapes by enlargement
Term 3	Students should be able to: - Draw and measure angles accurately - Identify that a quarter of a turn is 90 degrees, half a turn 180 and a full turn 360 - Record probabilities on a 0 – 1 probability scale - Find simple probabilities - Construct and interpret appropriate tables, frequency tables, bar charts and pictograms - Know the names and identify of triangles - Know the names and identify quadrilaterals - Identify the properties of quadrilaterals and triangles - Use compass directions to describe the position of objects in relation to other objects on a map - Measure distances on a map and use simple scales - Use coordinate points (grid references) to describe the position of an object - draw accurate lines using centimetres and millimetres - Measure accurately in cm, mm and metres	Students should be able to: - Apply the properties of: angles at a point, angles on a straight line and vertically opposite angles - Know the sum of angles in a triangle and a quadrilateral - Calculate probabilities of events - Understand the difference between theoretical and experimental probability - Draw sample space diagrams and use these to calculate probabilities - understand that there are different types of data: - Construct and interpret appropriate tables, frequency tables, bar charts, pictograms and pie charts - Find the mode, median and mean for a discrete frequency distribution - Identify the properties of quadrilaterals, triangles and circles - Know the properties of faces, surfaces, edges and vertices of 3D shapes. - Use scale factors, scale diagrams and maps - Draw and measure line segments and angles in geometric figures - Identify lines that are perpendicular	Students should be able to: - Apply the properties of: angles at a point, angles on a straight line and vertically opposite angles - Know the sum of angles in a triangle and a quadrilateral - Understand and use the relationship between parallel lines and alternate and corresponding angles - Understand that the probabilities of all possible outcomes sum to 1 - Understand the difference between theoretical and experimental probability - Draw sample space diagrams and use these to calculate probabilities - Construct and interpret appropriate tables, charts, pictograms. pie charts and frequency tables and bar charts for discrete and continuous (grouped data) - Describe, interpret and compare data for discrete, continuous and grouped data - Identify the properties of quadrilaterals, triangles, circles and other plane figures - Know the properties of faces, surfaces, edges and vertices of 3D shapes. - Use scale factors, scale diagrams and maps - Derive and use the standard ruler and compass constructions: