Learning Programme – Mathematics – 1st Year

Topic/ Content	Objectives/Skills	Homework	Assessment	Success Criteria (for E/S/D at KS3)
	Michaelmas First Half Term			
Number 1	Order positive and negative integers, decimals and fractions; use the symbols =, ≠, <, >, ≤, ≥ Round numbers to an appropriate degree of accuracy [for example, to a number of decimal places] Use the four operations, including formal written methods, applied to integers and decimals Use standard units of mass, length, time, money and other measures	Students will be set regular homework that is either teacher marked, peer marked, self marked or computer marked.	Half Term Test (week before October half-term) Two to three teacher marked pieces of homework will be set each half-term.	Mainly determined from Half-Term test, however, class work & homework may also be used. Grade boundaries for E, S & D dependent on overall scores across the year group.
	Recognise and find prime numbers, factors, multiples, common factors, common multiples Find highest common factor, lowest common multiple Express numbers as products of prime factors using factor trees or otherwise. Divisibility tests.			
	Know the priority of operations, including brackets, powers, roots and reciprocals (BODMAS/ BIDMAS) Use powers and roots (square, cube and higher) and recognise powers of 2, 3, 4, 5			
	Michaelmas Second Half Term			
Algebra 1	Understand and use the concepts and vocabulary of expressions, equations, inequalities, terms and factors and write expressions.	Students will be set regular homework that is either teacher marked, peer marked, self marked or computer marked.	Half Term Test (two weeks before Christmas holiday) Two to three teacher marked pieces of homework will be set each half-term.	Mainly determined from Half-Term test, however, class work & homework may also be used. Grade boundaries for E, S & D dependent on overall scores across the year group.
	Manipulate algebraic expressions by collecting like terms, multiplying over single bracket and factorising			
	Substitute numbers into formulae and expressions, including scientific formulae			
	Use algebraic methods to solve linear equations in one variable			
	Work with coordinates in all four quadrants			

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	Lent Term			
Shape 1	Change freely between related standard units [for example time, length, area, volume/capacity, mass]	Students will be set regular homework that is either teacher marked, peer marked, self marked or computer marked.	Half Term Test (two weeks before break up for Easter) Two to three teacher marked pieces of homework will be set each half-term.	Mainly determined from Half-Term test, however, class work & homework may also be used. Grade boundaries for E, S & D dependent on overall scores across the year group.
	Derive and apply formulae to calculate and solve problems involving: perimeter and area of triangles, parallelograms, trapezia			
	Calculate and solve problems involving: perimeters of 2-D shapes (including circles), areas of circles and composite shapes			
	Apply the properties of angles at a point, angles at a point on a straight line, vertically opposite angles Understand and use the relationship between parallel lines and alternate and corresponding angles Find the angle sum in any polygon and properties of regular polygons Describe, sketch and draw using conventional terms and notations: points, lines, parallel lines, perpendicular lines, right angles, regular polygons, and other polygons that are reflectively and rotationally symmetric			
	Derive and illustrate properties of triangles, quadrilaterals, circles, and other plane figures [for example, equal lengths and angles] using appropriate language and technologies = Use the standard conventions for labelling the sides and angles of triangle ABC			
Number 2	Express one quantity as a fraction of another, where the fraction is less than 1 and greater than 1 Order and simplify fractions and understand equivalent fractions Use the four operations, including formal written methods, applied to proper and improper fractions, and mixed numbers Work interchangeably with terminating decimals and their corresponding fractions (such as 0.375 and $\frac{3}{8}$)			
	Define percentage as 'number of parts per hundred', interpret percentages as a fraction or a decimal, express one quantity as a percentage of another, compare two quantities using percentages and find percentages of amounts			
	Use ratio notation, including reduction to simplest form Divide a given quantity in a given part:part or part:whole ratio; express the division of a quantity into two parts as a ratio			

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	Trinity Term			
Algebra 2	Recognise, sketch and produce graphs of linear functions of one variable with appropriate scaling, using equations in *x* and *y* and the Cartesian plane	Students will be set regular homework that is either teacher marked, peer marked, self marked or computer marked.	End of Year Exam (close to May Half-Term), on all topics covered up to that point. Two to three teacher marked pieces of homework will be set each half-term.	Mainly determined from End of Year Exam, however, Half-Term tests, class work & homework may also be used. Grade boundaries for E, S & D dependent on overall scores across the year group.
	Model situations or procedures by translating them into algebraic expressions or formulae and by using graphs			
	Generate terms of a sequence from either a term-to-term or a position-to-term rule Recognise arithmetic sequences and find the *n*th term			
	Recognise geometric sequences and appreciate other sequences that arise.			
Data 1	Generate theoretical sample spaces for single and combined events with equally likely, mutually exclusive outcomes and use these to calculate theoretical probabilities. Understand that the probabilities of all possible outcomes sum to 1			
	Record, describe and analyse the frequency of outcomes of simple probability experiments involving randomness, fairness, equally and unequally likely outcomes, using appropriate language and the 0-1 probability scale			
	Enumerate sets and unions/intersections of sets systematically, using tables, grids and Venn diagrams			