

# Maths Year 7

		<b>Emerging</b> – a student whose understanding of the Y7 Maths skills is still emerging will be able to:	<b>Developing</b> – a student who is developing their Y7 Maths skills will be able to	<b>Secure</b> – a student who is secure in the skills in the Y7 Maths curriculum will be able to:	<b>Mastered</b> – a student who has mastered the skills in the Y7 Maths curriculum will be able to:
<b>Number</b>	<b>Place Value</b>	Round integers to powers of ten. Round numbers to 1 decimal place.	Round to a given number of significant figures. Write large numbers in standard form.	Write decimal numbers in standard form. Write small numbers in standard form	Compare numbers written in standard form. Perform operations with numbers in and out of standard form
	<b>FDP</b>	Convert fluently between simple fractions, percentages and decimals. Work with and use equivalent fractions	Convert mixed numbers and improper fractions Convert fluently between fractions, decimals and percentages	Work confidently with percentages including those greater than 100% Apply knowledge of fractions to sequence problems	Solve problems involving fractions using a variety of methods Write recurring decimals as fractions
	<b>Addition &amp; Subtraction</b>	Use formal methods for addition and subtraction of decimals including problem solving	Know when to use mental strategies, formal written methods or a calculator	Use a variety of methods and to choose the most efficient	Solve addition and subtraction problems involving algebra.
	<b>Multiplication &amp; Division</b>	Understand and use factors and multiples including Lowest Common Multiple Understand prime, square and triangular numbers	Find the highest common factor (HCF) and lowest common multiple (LCM) of two numbers by listing	Find the product of prime factors Identify factors of numbers and expressions	Use Venn Diagrams to find the HCF and LCM Multiply and divide using algebra with higher powers

		Apply the order of operations		Multiply and divide using algebra	
	<b>Finding Fractions &amp; Percentages</b>	Find a fraction and a percentage of a given amount	Find an improper fraction of an amount Use a calculator to find percentages	Use a given fraction to find the whole and/or other fractions Calculate percentages over 100%	Solve fraction problems involving algebra Work with reverse percentages
	<b>Directed Number</b>	Understand directed number in context and order directed numbers Add and multiply directed numbers Solve 1 Step equations	Divide and multiply directed numbers Solve 2 step equations Substitute directed numbers into an expression	Calculate the range of temperatures Add and subtract directed numbers fluently	Apply understanding of operations with directed numbers to simplifying algebraic expressions Estimate roots
	<b>Addition &amp; Subtraction of Fractions</b>	Add and subtract fractions with the same denominator and from integers	Add and subtract mixed numbers and improper fractions Add and subtract fractions with different denominators	Show deeper understanding of the concepts of fraction addition and subtraction	Add and subtract simple algebraic fractions Solve equations involving the addition and subtraction of algebraic fractions
<b>Algebra</b>	<b>Sequences</b>	Describe and continue a sequence Continue a linear or non-linear sequence	Recognise whether a sequence is linear or non-linear and represent them in different forms Find missing terms in sequences and explain the term-to-term rule	Work out a given term in a sequence	Solve problems involving linear and non-linear sequences Use graphical representations to describe sequences
	<b>Algebraic Notation</b>	Use correct algebraic notation Find inputs and outputs for two-step function machines with numbers and variables Substitute into two step expressions	Use indices to simplify algebraic expressions Find the function given the expression Generate sequences by substituting into an expression	Find unknown functions for variable inputs and outputs Work with variables in two-step function machines Plot functions as graphs	Substitute with indices Explain why a sequence will be ascending, descending, linear or non-linear based on the sequence's rule
	<b>Equality &amp; Equivalence</b>	Form and solve one-step equations involving all four operations	Collect like terms involving indices Explain the difference between equal, equivalent and an identity	Use bar models, fact families and function machines to help us solve two-step equations.	Use known algebraic facts to derive other facts

		Simplify algebraic expressions by collecting like terms, using the = symbol Understand the meaning of equivalence and to recognise equivalent expressions		Use a full range of operations and explain how expressions can be equivalent using them	Make and test conjectures including using counter examples
<b>Geometry and Measure</b>	<b>Time (Addition &amp; Subtraction)</b>	Read the time from both Digital and Analogue formats	Solve problems involving time Use and interpret timetables to solve problems.		
	<b>Area (in Multiplication &amp; Division)</b>	Calculate the area of a rectangle and a parallelogram	Calculate the area of a triangle	Calculate the area of a trapezium	Find a missing length of a trapezium when given the area
	<b>Metric Measures (in Multiplication &amp; Division)</b>	Know the key metric measures Convert between units of length.	Convert between units of mass and capacity Convert between units of measure for area and volume	Estimate measures	
	<b>Constructions &amp; Measure</b>	Draw and measure angles up to 360 Classify angles and triangles and describe 2D shapes based on their properties	Use standard labelling convention for diagrams Use angle notation to describe parallel and perpendicular lines	Construct a triangle given 3 sides, 2 sides and an angle or 2 angles and a side	
	<b>Using Geometric Notation</b>	Understand and use the sum of angles at a point, on a straight line, in a triangle and in a quadrilateral Understand and use the equality of vertically opposite angles	Solve problems using the properties of triangles and quadrilaterals (and other angle rules)	Find and use the angle sum of any polygon Form and solve equations involving shape Understand and use parallel line angle rules.	Solve multi step problem solving questions involving polygons
<b>Statistics and</b>	<b>Averages (in Place Value)</b>	Find the range and median from a list of numbers	Explain what median and range tell us and when they are useful	Solve problems with the median and range and know when they are useful	Recognise how the median and range are affected by additional data

	<b>Averages (in Multiplication &amp; Division)</b>	Calculate the mean from a set of data		Find the mean from data within a table	Find missing values given some data and their mean
	<b>Frequency Trees &amp; Bar Charts (in Addition &amp; Subtraction)</b>		Understand and use frequency trees and interpret bar charts		Investigate the minimum information needed to complete a frequency tree and use frequency trees to create dual bar graphs
	<b>Pie Charts (in Constructions &amp; Measure)</b>		Interpret and draw basic pie charts	Interpret and draw pie charts using proportion or by measuring angles	Draw and interpret more complex pie charts and find missing values
	<b>Sets &amp; Probability</b>	Use and understand the probability scale Find the probability of a single event Use the knowledge that probabilities sum to 1	Add probabilities for single events Understand and use the vocabulary and symbols associated with sets Interpret and create Venn diagrams	Understand and use the intersection and union of sets	Understand and use the complement of a set