



Maths - Year 8

	<b>Emerging</b> - a student whose understanding of the Y8 Maths skills is still emerging will be able to:	<b>Developing</b> - a student who is developing their Y8 Maths skills will be able to:	<b>Secure</b> - a student who is secure in the skills in the Y8 Maths curriculum will be able to:	<b>Exceeding</b> - a student who has exceeded the skills in the Y8 Maths curriculum will be able to:
Number	<p>Use written methods to add and subtract more than two numbers</p> <p>Use index form</p>	<p>Use mental calculation for multiplication</p> <p>Know divisibility rules</p> <p>Calculate using squares, square roots, cube and cube roots</p> <p>Write a number as a product of its prime factors</p>	<p>Estimate answers to calculations</p> <p>Use divisibility rules</p> <p>Use a written method to divide decimal numbers by integers</p> <p>Add, subtract, multiply and divide positive and negative numbers, including large numbers and decimals</p> <p>Say which integers a square root lies between</p> <p>Calculate using squares, square roots, cube, cube roots and brackets</p> <p>Use prime factor decomposition to find the HCF and LCM</p>	<p>Exceeding in mathematics means pupils fully understand the topics taught. They can demonstrate full understanding in extensive practice. Work is checked to ensure it is of exemplary standard. They can choose the maths required to solve problems presented in a format they have never seen before. They find their own mistakes, and those of others, and devise strategies to minimise them in the future. Being able to verbalise using the correct mathematical language also displays a student who is exceeding in Maths.</p>
Area and volume	<p>Be able to find the area of a triangle and a parallelogram</p> <p>Calculate the volume of</p>	<p>Derive and use the formula for the area of a triangle and parallelogram</p> <p>Use the formula for the area of a trapezium</p>	<p>Calculate the area of compound shapes made from rectangles and triangles</p> <p>Solve volume problems</p>	

	<p>cubes and cuboids Sketch nets of 3D solids</p> <p>Solve simple problems in everyday contexts involving measures</p>	<p>Calculate the volume of 3D solids made from cuboids Draw 3D solids on isometric paper Know rough metric equivalents of imperial measures</p>	<p>Draw plans and elevations of 3D solids Calculate the surface areas of cubes and cuboids Use tonnes and hectares Convert between different measures for area, volume and capacity</p>	
Statistics, charts and graphs	<p>Interpret pie charts Use two way tables Draw stem and leaf diagrams</p>	<p>Use tables for grouped data Interpret stem and leaf diagrams Construct line graphs Draw a scatter graph Draw a line of best fit on a scatter graph Describe types of correlation Interpret graphs and charts</p>	<p>Draw pie charts Calculate the mean from a frequency table Compare two sets of data using statistics or the shape of the graph Choose the most appropriate average to use Explain why a graph or chart could be misleading</p>	<p>Exceeding in mathematics means pupils fully understand the topics taught. They can demonstrate full understanding in extensive practice. Work is checked to ensure it is of exemplary standard. They can choose the maths required to solve problems presented in a format they have never seen before. They find their own mistakes, and those of others, and devise strategies to minimise them in the future. Being able to verbalise using the correct mathematical language also displays a student who is exceeding in Maths.</p>
Expressions and equations	<p>Understand and simplify algebraic powers Find the inverse of a simple function</p>	<p>Write and use expressions involving powers Expand brackets Write and solve one step equations</p>	<p>Write and simplify algebraic expressions and formulae using brackets and division Factorise expressions Confidently solve two step equations</p>	
Real-life graphs	<p>Interpret a distance-time graph</p>	<p>Draw a simple distance-time graph Draw and interpret line graphs</p>	<p>Draw, use and interpret conversion graphs Draw and use graphs to solve distance-time problems Identify trends on a line graph</p>	

			Draw and interpret linear ,non-linear and curved graphs from a range of sources	
Decimals and ratio	Order decimals of any size, including positive and negative decimals	Round decimals to 2 or 3 decimal places Multiple large numbers by decimals Multiply and divide by 0.1 and 0.01 Use ratios involving decimals	Round numbers to a given number of significant figures Multiply decimals with up to and including 2 decimal places Solve problems involving decimals and all four operations Divide a quantity into three or more parts in a given ratio Use unit ratios	Exceeding in mathematics means pupils fully understand the topics taught. They can demonstrate full understanding in extensive practice. Work is checked to ensure it is of exemplary standard. They can choose the maths required to solve problems presented in a format they have never seen before. They find their own mistakes, and those of others, and devise strategies to minimise them in the future. Being able to verbalise using the correct mathematical language also displays a student who is exceeding in Maths.
Lines and angles	Classify quadrilaterals by their geometric properties	Identify alternate angles Identify corresponding angles Work out the interior and exterior angles of a polygon	Solve problems using side and angle properties of special quadrilaterals Understand proof of angle facts Solve problems using properties of angles in parallel and intersecting lines Show reasoning when solving geometric problems Solve problems involving angles by setting up equations	
Calculating with fractions		Identify fractions as more than a $\frac{1}{2}$ or less than $\frac{1}{2}$ Multiply and divide integers and fractions by a fraction Find the reciprocal of a	Add and subtract fractions with any size denominator Multiply and divide fractions Use the four operations with mixed numbers	

		number Write a mixed number as an improper fraction		
Straight line graphs	Plot graphs	Recognise when values are in direct proportion with or without a graph Plot the graphs of linear equations	Read values from a graph to solve problems Find the gradient from a straight line graph Write the equation of a straight line graph in the form $y = mx + c$	Exceeding in mathematics means pupils fully understand the topics taught. They can demonstrate full understanding in extensive practice. Work is checked to ensure it is of exemplary standard. They can choose the maths required to solve problems presented in a format they have never seen before. They find their own mistakes, and those of others, and devise strategies to minimise them in the future. Being able to verbalise using the correct mathematical language also displays a student who is exceeding in Maths.
Percentages, decimals and fractions	Change time to decimal hours Recall equivalent fractions, percentages and decimals Use the unitary method to solve percentage problems	Recognise recurring and terminating decimals Work out an amount increased or decreased by a percentage Use a multiplier to increase or decrease by a percentage	Order fractions by converting them to decimals or equivalent fractions Use equivalence to compare proportions Express one number as a percentage of another when the units are different Use mental strategies to solve percentage problems	

