

	Emerging a student whose understanding of the Y8 Maths skills is still emerging will be able to:	Developing a student who is developing their Y8 Maths skills will be able to:	Secure a student who is secure in the skills in the Y8 Maths curriculum will be able to:	Mastered a student who has mastered the skills in the Y8 Maths curriculum will be able to:
Number	<p>Understand and find square numbers and cube numbers. Write out the terms of the Fibonacci Sequence.</p> <p>Round to nearest 10 or 100.</p> <p>Recall times tables up to 12 x 12.</p> <p>Understand powers of 10.</p>	<p>Understand and find square roots and cube roots.</p> <p>Round numbers to one /two decimal places. Check answers to problems by estimating the answer.</p>	<p>Round numbers to a specific number of significant figures. Write large numbers in standard form. Multiply numbers in standard form.</p>	<p>A 'Master' in mathematics fully understands the topics taught and can demonstrate full understanding in extensive practice and checks over their work 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.</p>

<p>Calculations</p>	<p>Find common factors for pairs of numbers. Write down multiples of any whole number. Write down factors of numbers less than 100. Identify prime numbers under 20.</p>	<p>Find lowest common multiple and highest common factors of a pair of numbers. Write a number as a product of its prime factors. Solve problems using decimals. Multiply and divide by powers of 10. Multiply large and small numbers together.</p>	<p>Work out LCM and HCF using prime factors. Divide by a decimal without a calculator.</p>	<p>A 'Master' in mathematics fully understands the topics taught and can demonstrate full understanding in extensive practice and checks over their work 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.</p>
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<p>Fractions</p>	<p>Identify equivalent fractions. Add and subtract fractions with the same denominator. Find a fraction of an amount.</p>	<p>Add and subtract fractions with different denominators. Convert mixed numbers to improper fractions, and vice versa. Multiply a fraction by an integer. Divide an integer by a unit fraction.</p>	<p>Add and subtract mixed numbers. Multiply and divide fractions, including mixed numbers. Understand algebraic expressions with fractions.</p>	<p>A 'Master' in mathematics fully understands the topics taught and can demonstrate full understanding in extensive practice and checks over their work 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.</p>
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<p>Proportions</p>	<p>Understand that percent means 'out of 100'. Find percentage of an amount. Use the unitary method.</p>	<p>Write a value as a percentage of another. Use percentages to compare quantities. Use a multiplier to calculate percentage increase or decrease. Solve shape problems using ratio. Use scale diagrams. Understand how to use map scales. Understand and use direct proportion. Draw a graph for direct proportion.</p>	<p>Use ratio to compare length, areas and volumes of 2D and 3D shapes. Write a change of value as a percentage increase or decrease. Calculate and identify an increase of more than 100% Understand and use inverse proportion. Draw a graph for inverse proportion. Decide whether two variables are in direct proportion or inverse proportion.</p>	<p>A 'Master' in mathematics fully understands the topics taught and can demonstrate full understanding in extensive practice and checks over their work 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.</p>
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Understanding Algebra	Use algebra with function machines. Simplify expressions involving multiplication. Simplify expressions by collecting like terms.	Draw a straight line graph by completing a table of values. Simplify expressions that have two or more terms. Expand a linear expression with brackets. Identify equivalent algebraic expressions. Write algebraic expressions in a simpler form using index notation.	Draw a quadratic graph by completing a table of a quadratic equation. Write and simplify expressions involving four operations and fractions. Expand an expression with brackets involving powers. Write algebraic expressions involving cubes and other powers. Change the subject of a formula.	A 'Master' in mathematics fully understands the topics taught and can demonstrate full understanding in extensive practice and checks over their work 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.
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<p>Using Algebra</p>	<p>Plot co-ordinates. Solve simple equations. Substitute positive values into expressions.</p> <p>Rotate a shape about a point. Translate a shape. Identify parallel and perpendicular lines. Find missing angles in triangles and quadrilaterals. Find the area of a rectangle. Label the radius and diameter on a circle.</p>	<p>Use flow diagrams to generate sequences. Find and use the nth term of a sequence. Use the nth term of a sequence. Interpret graphs that illustrate real life situations. Solve simple equations involving brackets and fractions. Substitute values into formulae.</p>	<p>Work out the equation of the form $y = mx + c$ from its graph. Solve a quadratic equation using a graph. Solve simple equations involving squares. Calculate gradient of a line. Solve equations with the variable on both sides.</p>	<p>A 'Master' in mathematics fully understands the topics taught and can demonstrate full understanding in extensive practice and checks over their work 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.</p>
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Geometry		<p>Use angle properties of parallel lines. Rotate a shape about a centre of rotation. Construct perpendicular bisector and angle bisectors. Find the area of triangles, parallelograms and trapezia. Find the area of a compound shape. Find the surface area of a cuboid. Enlarge a 2D shape. Find the area and circumference of a circle.</p>	<p>Use geometric properties of quadrilaterals. Prove two triangles are congruent. Convert the units of area and volume. Calculate surface area and volume of prisms. Enlarge a shape by a fractional scale factor. Calculate perimeter and area of complex shapes which include circles.</p>	<p>A 'Master' in mathematics fully understands the topics taught and can demonstrate full understanding in extensive practice and checks over their work 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.</p>
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<p>Data Handling</p>	<p>Understand chance. Use a probability scale from 0 to 1. Calculate probabilities from equally likely outcomes. Read information from bar charts.</p>	<p>Use sample spaces to calculate probabilities. Can calculate probability from experimental data. Read information from pie charts. Construct a pie chart. Understand and draw scatter graphs.</p>	<p>Understand what mutually exclusive outcomes are. Use Venn diagrams to calculate probabilities. Understand relative frequency as an estimate of probability. Draw a line of best fit on a scatter diagram. Interpret and criticise a variety of graphs.</p>	<p>A 'Master' in mathematics fully understands the topics taught and can demonstrate full understanding in extensive practice and checks over their work 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.</p>
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