

# Maths Year 8 Curriculum Overview

The below is intended to provide parents and pupils with a simple overview of Year 8 Maths. Should you have any additional questions please do not hesitate to contact Miss Price. We strongly encourage parents to look through their child's books and talk with them about their studies. In addition to the knowledge quizzes at the end of each unit the pupils will complete 3 larger assessments which will cover the units over a term.

<b>Learning Focus</b>	<b>Assessments</b>
<b>Number: Understanding</b>	
<u>Key Skills/ Knowledge:</u> <ul style="list-style-type: none"> <li>• Converting large numbers in standard form</li> <li>• Comparing numbers that are written in standard form</li> <li>• Rounding decimal places</li> <li>• Rounding significant figures</li> <li>• Truncating numbers</li> <li>• Write error intervals</li> <li>• Estimating square roots</li> <li>• Recognise and work with cubes and cube roots</li> <li>• Calculate and recognise powers and their associated roots</li> <li>• Apply BIDMAS to calculations</li> <li>• Write a number as a product of its prime factors</li> <li>• Calculator use</li> </ul>	End of unit assessment – this will be marked, and the pupils will receive feedback in their books.
<b>Number: 4 Operations</b>	
<u>Key Skills/ Knowledge:</u> <ul style="list-style-type: none"> <li>• Identify and work with factors, multiples, and primes</li> <li>• Apply the four operations to decimals</li> <li>• Find the highest common factor of 2 or more numbers from a list and Venn diagram</li> <li>• Find the lowest common multiple of 2 or more numbers from a list and Venn diagram</li> </ul>	End of unit assessment – this will be marked, and the pupils will receive feedback in their books.
<b>Algebra</b>	
<u>Key Skills/ Knowledge:</u> <ul style="list-style-type: none"> <li>• Substitute positive and negative values into formulae and expressions, including 'real-life' questions</li> <li>• Simplify expressions by collecting like terms, including algebraic terms with a power <math>&gt; 1</math></li> <li>• Expand a single bracket, including two or more brackets separated by <math>a +</math> or <math>-</math></li> <li>• Factorise linear expressions</li> <li>• Form and solve equations with an unknown on one side and including brackets</li> <li>• Interpret and write more complex algebraic expressions and formulae</li> <li>• Generate and describe a sequence using the <math>n</math>th term</li> <li>• Find the <math>n</math>th term of an arithmetic sequence</li> <li>• Plot a linear graph by generating a table of values</li> <li>• Draw and interpret line graphs from 'real-life' situations</li> <li>• Satisfy inequalities and represent solutions on a number line.</li> </ul>	End of unit assessment – this will be marked, and the pupils will receive feedback in their books.

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<b>Number: Fractions and Percentages</b>	
<p><u>Key Skills/ Knowledge:</u></p> <ul style="list-style-type: none"> <li>• Apply the four operations to proper fractions, improper fractions and mixed numbers</li> <li>• Calculate fractions of an amount, including 'real-life' questions and work with different types of units.</li> <li>• Use a calculator to solve fractions problems</li> <li>• Work interchangeably with terminating decimals, corresponding fractions, and their percentages.</li> <li>• Calculate percentages of an amount without a calculator, including non-multiples of 5% and 'real life' problems.</li> <li>• Calculate percentage increase/decrease without a calculator</li> <li>• Use a calculator to work out a percentage of an amount</li> <li>• Calculate percentages of an amount with a calculator using decimal multipliers, including increasing and decreasing by a % and 'real-life' problems.</li> <li>• Calculate the percentage change between two quantities.</li> <li>• Use fractions to compare two quantities</li> <li>• Compare two quantities using percentages</li> <li>• Solve a range of number problems without a calculator</li> <li>• Use a calculator to solve a range of number problems</li> </ul>	<p>End of unit assessment – this will be marked, and the pupils will receive feedback in their books.</p>
<b>Ratio and Proportion</b>	
<p><u>Key Skills/ Knowledge:</u></p> <ul style="list-style-type: none"> <li>• Divide an amount into a given ratio and solve problems involving ratio including real life context. Include missing values.</li> <li>• Solve simple combination ratio questions; a:b and b:c</li> <li>• Recognise examples of direct and inverse proportion</li> <li>• Solve problems involving direct and inverse proportion. Explore graphical and algebraic approaches</li> <li>• Solve best buy/better value problems, including non-integer solutions</li> </ul>	<p>End of unit assessment – this will be marked, and the pupils will receive feedback in their books.</p>
<b>Geometry: Similarity and Shape</b>	
<p><u>Key Skills/ Knowledge:</u></p> <ul style="list-style-type: none"> <li>• Describe and transform 2D shapes using single rotations</li> <li>• Describe and transform 2D shapes using single reflections</li> <li>• Describe and transform 2D shapes using translation by vector notation</li> <li>• Describe and transform 2D shapes using enlargements by a positive scale factor using a centre of enlargement.</li> <li>• Understand congruence and identify shapes that are congruent</li> </ul>	<p>End of unit assessment – this will be marked, and the pupils will receive feedback in their books.</p>

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<ul style="list-style-type: none"> <li>• Calculate the lengths in similar shapes</li> <li>• Accurately construct circles given the radius</li> <li>• Understand what Loci is, what the pathways look like and why.</li> <li>• Construct equilateral triangles and perpendicular bisectors using a pair of compasses</li> </ul>	
<b>Geometry: Angles</b>	
<p><u>Key Skills/ Knowledge:</u></p> <ul style="list-style-type: none"> <li>• Calculate and use the sum of interior and exterior angles of polygons</li> <li>• Solve angle problems relating to regular polygons</li> <li>• Work out missing angles using properties of alternate, corresponding, and co-interior angles including examples involving parallelograms including giving reasons for answers</li> </ul>	<p>End of unit assessment – this will be marked, and the pupils will receive feedback in their books.</p>
<b>Geometry: Area, Perimeter and Volume</b>	
<p><u>Key Skills/ Knowledge:</u></p> <ul style="list-style-type: none"> <li>• Derive and use the formula for area of a trapezium</li> <li>• Find the area of composite shapes made up of triangles and rectangles, including missing values and mixed units</li> <li>• Recognise and draw nets of triangular prisms accurately, and sketch the net of a cylinder</li> <li>• Work out the volume and surface area of cubes/cuboids and triangular prisms, including missing values</li> <li>• Calculate the area and circumference of a circle</li> <li>• Identify and apply circle definitions and properties including radius, diameter, circumference, chord, sector, segment, tangent and arc</li> </ul>	<p>End of unit assessment – this will be marked, and the pupils will receive feedback in their books.</p>
<b>Data</b>	
<p><u>Key Skills/ Knowledge:</u></p> <ul style="list-style-type: none"> <li>• Calculate the mean, median, mode and range; include working backwards to find missing values given the mean.</li> <li>• Make comparisons between two distributions in relation to the mean, median, mode and range from lists and ungrouped frequency tables: developing explicit written language skills when describing comparable data.</li> <li>• Draw a scatter graph</li> <li>• Recognise and name positive, negative, no, strong, weak correlation</li> <li>• Understand that if correlation exists, it does not necessarily mean that causality is present</li> <li>• Draw a line of best fit for scatter graphs where appropriate, and use to estimate values in 'real life' context</li> </ul>	<p>End of unit assessment – this will be marked, and the pupils will receive feedback in their books.</p>



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| <ul style="list-style-type: none"><li>• Apply the property that the probabilities of all outcomes sum to 1; include context questions to find the probability of something not happening</li><li>• Generate lists and sample space diagrams for single and combined events and use to calculate probabilities.</li><li>• Calculate expected frequency.</li><li>• Complete a frequency table for the outcomes of an experiment</li><li>• Consider differences between theoretical probability and relative frequency in a practical situation</li><li>• Understand and use the term relative frequency and use relative frequency to estimate probabilities</li></ul> |  |
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