

Year 7 Year 8	Number	Algebra	Geometry and Measure	Statistics
	Aspect 1	Aspect 2	Aspect 3	Aspect 4
<p><b>Excellence:</b> 85%+ proficiency from all 'good' objectives.</p> <p>For aspect 1 and aspect 3, there should be some proficiency towards these objectives to achieve 'excellence'.</p>	<ul style="list-style-type: none"> <li>• Work out the upper and lower bounds of rounded numbers.</li> <li>• Add and subtract numbers in bases other than 10.</li> <li>• Convert between base 10 numbers and other bases.</li> <li>• <b>Egyptian Fractions - write fractions as a sum of unit fractions</b></li> <li>• <b>Solve complicated percentage problems involving multiple steps</b></li> </ul>		<ul style="list-style-type: none"> <li>• <b>Calculate area of compound shapes involving circles and semi-circles.</b></li> <li>• <b>Solve higher level problems involving volume or surface area</b></li> <li>• <b>Solve higher level problems involving angles and quadrilaterals</b></li> <li>• <b>Solve higher level problems involving area and perimeter</b></li> </ul>	
<p><b>Good:</b> 70%+ proficiency in all of these objectives.</p> <p><b>Developing:</b> 40%+ proficiency in all of these objectives.</p> <p><b>Emerging:</b></p>	<ul style="list-style-type: none"> <li>• Identify place values of digits and compare sizes of numbers.</li> <li>• Multiply and divide numbers by 10, 100, and 1000.</li> <li>• Round numbers to given place values.</li> <li>• Add and subtract integers using an appropriate method.</li> </ul>	<ul style="list-style-type: none"> <li>• Solve problems (bar modelling)</li> <li>• Solve problems involving coordinates in the first quadrant.</li> <li>• Use algebraic shorthand to represent addition, subtraction, multiplication and/or</li> </ul>	<ul style="list-style-type: none"> <li>• Calculate the perimeter of rectangular shapes or other polygon shapes.</li> <li>• Work out missing lengths in diagrams</li> <li>• Calculate the perimeter of compound shapes</li> <li>• Work out the area of a rectangle.</li> </ul>	<ul style="list-style-type: none"> <li>• Calculate the mean of a group of numbers.</li> <li>• Mean of an algebraic expression</li> <li>• Read information from pie charts</li> <li>• Create accurate pie charts from raw data.</li> </ul>

<p><b>Below 40% proficiency across all objectives.</b></p>	<ul style="list-style-type: none"> <li>• Add and subtract decimal numbers.</li> <li>• Solve worded problems involving addition and subtraction</li> <li>• Use rounding to estimate problems including worded problems</li> <li>• Multiply a multi-digit number by a single digit number using an appropriate method.</li> <li>• Multiply a multi-digit number by a 2 or 3 digit number using an appropriate method.</li> <li>• Divide a multi-digit number by a 1 or 2 digit number.</li> <li>• Multiply or divide decimal numbers by an integer.</li> <li>• Find multiples and factors of numbers.</li> <li>• Work out highest common factor and lowest common multiples of 2 numbers (lists).</li> </ul>	<p>division of an unknown quantity.</p> <ul style="list-style-type: none"> <li>• Simplify algebraic expressions involving addition and subtraction of like terms.</li> <li>• Simplify algebraic expressions involving multiplication or division of two terms.</li> <li>• Multiply out brackets where a number or variable is multiplied over two or more terms.</li> <li>• Factorise expressions.</li> <li>• Substitute numbers into variables correctly.</li> <li>• Use algebra to solve problems.</li> <li>• Express the term-to-term rule of a linear sequence.</li> <li>• <b>Express the position-to-term rule of a linear sequence as an algebraic rule (nth term).</b></li> </ul>	<ul style="list-style-type: none"> <li>• Work out the area of a triangle.</li> <li>• Work out the area of a parallelogram.</li> <li>• Work out the area of compound shapes</li> <li>• Read time correctly</li> <li>• Measure and draw angles accurately</li> <li>• Classify angles by type (acute, obtuse, reflex, right)</li> <li>• Solve problems involving angles on a straight line, around a point, vertically opposite angles, angle sum in a triangle, and angle sum in a quadrilateral. Justifications / reasons should be given.</li> <li>• Tessellate shapes.</li> <li>• Classify triangles (equilateral, isosceles, scalene).</li> <li>• Identify or draw lines of symmetry in shapes</li> </ul>	<ul style="list-style-type: none"> <li>• Read / interpret information from a bar chart</li> <li>• <b>Calculate the mean, median, range and mode of a set of numbers</b></li> <li>• <b>Solve problems involving mean, median, range and mode</b></li> <li>• <b>Interpret distance / time graphs</b></li> <li>• <b>Calculate the mean from a table</b></li> <li>• <b>Articulate which average is the most appropriate (mean, median, mode)</b></li> <li>• <b>Compare two data sets (compare the average, compare the range) in context</b></li> </ul>
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	<ul style="list-style-type: none"> <li>• Solve worded problems involving multiplication, division, factors and/or multiples.</li> <li>• Identify a fraction of a shape.</li> <li>• Find the whole given a fractional part.</li> <li>• Understand and use reciprocals.</li> <li>• Convert between mixed numbers and improper fractions</li> <li>• Find equivalent fractions</li> <li>• Simplify fractions</li> <li>• Convert between fractions, decimals and percentages.</li> <li>• Compare fractions, decimals, percentages / arrange in numerical order</li> <li>• Find a fraction of an amount.</li> <li>• Multiply two fractions, including products which require simplification before multiplication.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Solve problems involving the <math>n</math>th term of a sequence.</b></li> <li>• <b>Solve algebraic equations involving one or two steps.</b></li> <li>• <b>Create algebraic equations to model a situation.</b></li> <li>• <b>Give a counterexample to show a conjecture is wrong.</b></li> </ul>	<ul style="list-style-type: none"> <li>• Identify special properties of quadrilaterals: square, rectangle, kite, trapezium, parallelogram and rhombus</li> <li>• Convert among metric measures (capacity, mass, length)</li> <li>• Accurately construct a triangle given two angles and one side (ASA) (SAA)</li> <li>• <b>Accurately construct a triangle given three sides (SSS)</b></li> <li>• <b>Accurately construct a triangle given two sides and an angle (SAS)</b></li> <li>• <b>Accurately construct a triangle given two angles and one side (ASA) (SAA)</b></li> <li>• <b>Solve problems involving parallel lines.</b></li> </ul>	
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	<ul style="list-style-type: none"> <li>• Divide two fractions including quotients which require simplification before multiplication.</li> <li>• Multiply or divide mixed numbers</li> <li>• Add, subtract, multiply, divide, and apply indices to two or more numbers using the correct hierarchy of operations</li> <li>• Calculate percentages of quantities</li> <li>• <b>Deduce all prime numbers up to at least 100.</b></li> <li>• <b>Calculate squares and square roots of numbers. (also cubes and cube roots)</b></li> <li>• <b>Decompose a composite number into a product of its prime factors.</b></li> <li>• <b>Find the LCM and HCF of two numbers using prime factors.</b></li> </ul>		<ul style="list-style-type: none"> <li>• <b>Convert between metric measures of area.</b></li> <li>• <b>Calculate the area of a trapezium</b></li> <li>• <b>Solve problems involving area and change of measures.</b></li> <li>• <b>Solve problems involving speed, distance and time</b></li> <li>• <b>Calculate the circumference of a circle or perimeter of a fraction of a circle.</b></li> <li>• <b>Calculate the area of a circle or fraction of a circle.</b></li> <li>• <b>Solve problems involving circumference or area of a circle</b></li> <li>• <b>Draw an accurate net of a prism.</b></li> <li>• <b>Solve problems involving nets of prisms.</b></li> <li>• <b>Draw accurate plans, front, and side elevations of 3D geometrical figures.</b></li> </ul>	
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	<ul style="list-style-type: none"><li>• <b>Solve problems involving HCF and/or LCM of two numbers</b></li><li>• <b>Add or subtract two proper fractions</b></li><li>• <b>Add or subtract two mixed number fractions.</b></li><li>• <b>Put positive and negative numbers in ascending and descending order.</b></li><li>• <b>Add / subtract two or more integers (positive and negative)</b></li><li>• <b>Multiply / divide two or more integers (positive and negative)</b></li><li>• <b>Increase or decrease a quantity by a percentage</b></li><li>• <b>Work out the percentage (increase or decrease) of two amounts</b></li><li>• <b>Reverse percentage questions - work out the original value</b></li></ul>		<ul style="list-style-type: none"><li>• <b>Calculate the volume of any prism (including cylinders).</b></li><li>• <b>Calculate the surface area of a cube, cuboid or compound shape</b></li></ul>	
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	<ul style="list-style-type: none"><li>• <b>Solve problems involving the scaling of ratios</b></li><li>• <b>Solve problems involving dividing a ratio</b></li><li>• <b>Round numbers to a given amount of significant figures</b></li></ul>			
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