

## Year 7 Maths Progress Criteria 2019

	Foundation	Secure	Advanced	Exceptional
<b>Add &amp; Subtract</b>	<ul style="list-style-type: none"> <li>- Place value and numbers as words</li> <li>- Written methods for + / -</li> <li>- Word &amp; money problems with + / -</li> <li>- Find perimeter of simple shapes by counting squares</li> <li>- Writing simple expressions with pictures then algebra</li> <li>- Know that 2a means 2 x a</li> <li>- Collecting like terms</li> </ul>	<ul style="list-style-type: none"> <li>- Add/Subtract including decimals</li> <li>- Negative numbers + / -</li> <li>- Perimeter of rectangles using calculation</li> <li>- Perimeter of compound shapes</li> <li>- Collecting like terms (different letters and numbers)</li> </ul>	<ul style="list-style-type: none"> <li>- Perimeter of any shape - link to all skills including decimals</li> <li>- Add &amp; subtract mixed numbers</li> <li>- Collecting like terms (with indices)</li> </ul>	<ul style="list-style-type: none"> <li>- Construct algebraic expressions for perimeter problems.</li> </ul>
<b>Multiply &amp; Divide</b>	<ul style="list-style-type: none"> <li>- Multiplication tables up to 12</li> <li>- Short x and ÷</li> <li>- Find area of rectangles by counting squares</li> <li>- Know that 2a means 2 x a</li> <li>- x and ÷ whole numbers by 10 and 100</li> </ul>	<ul style="list-style-type: none"> <li>- Word problems with x and ÷</li> <li>- Long x and short ÷ with no remainder</li> <li>- x and ÷ any numbers (including decimals) by 10 and 100, 1000</li> <li>- Negative numbers x and ÷</li> <li>- BODMAS</li> <li>- Word problems and money problems combining four ops</li> <li>- Area of rectangles by calculation</li> <li>- Area of compound shapes (rectangles)</li> <li>- Area of a triangle</li> <li>- Area of a parallelogram</li> <li>- Construct expressions for area of rectangles.</li> </ul>	<ul style="list-style-type: none"> <li>- short ÷ with remainder</li> <li>- Area of compound shapes formed containing all shapes</li> <li>- Construct expressions for area problems involving shapes other than rectangles, including involving brackets and fractions.</li> <li>- BODMAS with negative and decimals</li> <li>- x and ÷ decimals</li> </ul>	<ul style="list-style-type: none"> <li>- Construct expressions for area problems involving compound shapes. Including involving brackets and fractions.</li> <li>- Multiply &amp; Divide by numbers between 0 &amp; 1</li> </ul>

<b>Introduction to Algebra</b>	<ul style="list-style-type: none"> <li>-Collecting like terms (all the same letter)</li> <li>- Substitution (whole numbers)</li> <li>- Find missing numbers represented by a symbol e.g. <math>* + 4 = 7</math></li> <li>- Solve simple one step equations e.g. <math>2x=12</math> (whole numbers)</li> </ul>	<ul style="list-style-type: none"> <li>- Collecting like terms (different letters and numbers)</li> <li>- Substitution (negative numbers)</li> <li>- Expanding single brackets</li> <li>- Solve simple two step linear equations e.g. <math>4x-3=13</math>,with whole number answers</li> <li>- Solve simple two step linear equations involving brackets e.g. <math>4(x+2)=20</math> with whole number answers</li> <li>- Solve more complex linear equations e.g. with variables on both sides</li> <li>- Construct and solve equations to solve area and perimeter problems.</li> <li>- Linear Factorising (Letters or numbers)</li> </ul>	<ul style="list-style-type: none"> <li>- Collecting like terms (with indices)</li> <li>- Substitution (indices and fractions)</li> <li>- Expand and simplify brackets <math>5(x + 3) - 3(x + 1)</math></li> <li>-Solve more complex linear equations eg with variables on both sides, negative x coefficient, fractional or negative solutions</li> <li>- Construct and solve equations eg for solving area and perimeter problems.</li> <li>- Linear Factorising (Letters and numbers)</li> </ul>	<ul style="list-style-type: none"> <li>- Substitution (negative fractions and powers combined)</li> <li>- Expanding double brackets</li> <li>- Factorise a quadratic expression including the difference of two squares</li> </ul>
<b>Data Diagrams</b>	<ul style="list-style-type: none"> <li>- Construct and interpret bar charts</li> <li>- Construct and interpret pictograms</li> <li>- Interpret simple tables and lists</li> <li>- Collect information/ data to produce own bar chart/ pictogram</li> <li>- Construct and interpret line graphs</li> <li>- Interpret percentage pie charts and other simple pie charts</li> <li>- Draw section and percentage pie charts</li> <li>- Construct all above using Excel</li> </ul>	<ul style="list-style-type: none"> <li>- Construct pie charts using a protractor</li> <li>- Construct and interpret dual bar charts</li> <li>- Construct and interpret frequency diagrams and polygons</li> <li>- Construct and interpret pie charts</li> <li>- Plot scatter diagrams</li> <li>- Understand correlation</li> <li>- Draw Lines of best fit</li> <li>- Frequency Polygons</li> <li>- Construct all above diagrams in Excel</li> </ul>	<ul style="list-style-type: none"> <li>- Compare dual bar charts</li> <li>- Compare frequency diagrams &amp; frequency polygons</li> <li>- Use Lines of best fit</li> <li>- Plot cumulative frequency</li> <li>- Estimate the median, quartiles and inter quartile range for large data sets using cumulative frequency curves</li> <li>- Use Excel to construct dual bar charts and plot cumulative frequency curves</li> </ul>	<ul style="list-style-type: none"> <li>- Answer problems requiring interpretation of cumulative frequency curve, &amp; understand meaning of median, quartiles and IQR</li> </ul>

<b>Angles</b>	<ul style="list-style-type: none"> <li>-Classify angles as acute, obtuse and reflex</li> <li>- Know that a right angle is <math>90^\circ</math>, a straight line is <math>180^\circ</math> and a full turn is <math>360^\circ</math></li> <li>-Classify triangles in basic way (spot scalene, isosceles, equilateral &amp; right angled triangles).</li> <li>- Draw and measure angles accurately using a protractor</li> <li>- Angles on a straight line, angles in a triangle, angles in a quadrilateral &amp; angles at a point</li> </ul>	<ul style="list-style-type: none"> <li>-Classify 2D shapes in various ways (e.g. identifying the angle properties of isosceles, equilateral, acute-angled and obtuse-angled triangles etc.)</li> <li>-Problem solving using angles on a straight line, angles in a triangle, angles round a point, angles in a quadrilateral</li> <li>- Angles in parallel lines - use on simple questions only</li> <li>- Properties of quadrilaterals excluding diagonals</li> </ul>	<ul style="list-style-type: none"> <li>-Properties of diagonals in quadrilaterals</li> <li>- Solving problems involving angles in parallel lines</li> <li>- Solving angle problems - giving a numerical proof</li> <li>- Construct and solve equations to solve angle problems.</li> <li>- Draw/Construct bearings and simple calculations</li> </ul>	<ul style="list-style-type: none"> <li>- Able to give written proof using angle properties and other 2D shapes properties, giving written reasons throughout.</li> <li>- Problem solving using bearings</li> </ul>
<b>Fractions</b>	<ul style="list-style-type: none"> <li>- Begin to use and understand halves and quarters</li> <li>- Simple fractions of shaded regions</li> <li>- Equivalent fractions</li> <li>- Simplifying fractions</li> <li>- Simple equivalent fractions, decimals and percentages e.g. <math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, <math>\frac{1}{10}</math></li> <li>- Simple fractions of amount e.g. <math>\frac{1}{2}</math> of, <math>\frac{1}{4}</math> of etc.</li> </ul>	<ul style="list-style-type: none"> <li>- Shaded fractions of more complicated shapes, with mixed sized regions</li> <li>- Fractions of amount eg <math>\frac{2}{5}</math> of 20</li> <li>- Convert improper fractions and mixed numbers</li> <li>- Convert between any fraction &amp; decimal</li> <li>- Order fractions &amp; decimals</li> <li>- Multiply &amp; divide fractions</li> <li>- Multiply and divide an integer by a fraction</li> <li>- Simple area questions involving multiplying &amp; dividing simple fractions</li> </ul>	<ul style="list-style-type: none"> <li>- Problem solving with fractions of amount eg <math>\frac{2}{5}</math> of 20 = <math>\frac{1}{4}</math> of n?</li> <li>- Multiply &amp; divide fractions &amp; mixed numbers</li> <li>- Solve compound area problems involving multiplying &amp; dividing fractions excluding mixed numbers (all lengths will need to be supplied)</li> <li>- Solve problems involving multiplying and dividing an integer by a fraction</li> </ul>	<ul style="list-style-type: none"> <li>- Solve compound area problems involving multiplying &amp; dividing fractions &amp; mixed numbers (all lengths will need to be supplied)</li> </ul>