



# Year 6 Maths Small Steps Planning Framework:

The Buxton Maths small steps planning framework (adapted from the White Rose Resources) are a series of learning objectives that children need to master in order to progress onto more challenging lessons. There are small steps for each year group, which are sorted into blocks of weeks and linked to the Maths National Curriculum 2014 found at the end of this document, which can also be referred to. Ideally, you should follow the small steps in the order they are presented, as they have been carefully planned in this order to help children gradually develop their skills. While the small steps outline the learning objectives that children should work towards in lessons, how you plan and deliver these lessons is down to you. So here are some tips for planning lessons using the small steps.

- The small steps are a series of learning objectives and milestones, but that's not to say that one step equals one lesson. You may be able to cover several small steps in one lesson, or a single step might require a whole lesson or even several lessons. You'll need to judge how easily children will grasp these small steps and plan lessons to make sure you cover all steps within the blocks of time. If block 1 is weeks 1-3, you'll need to have covered all block 1 small steps by the end of week 3.
- Each small step assumes a certain level of understanding from the children — understanding that they should have gained while progressing through other steps. So before you progress onto more complex and challenging topics, assess children's progress to make sure they have a firm understanding of the small steps you've already covered; for example if children are unable to multiply and divide by 10,100, 1000 then do not progress to converting measurements as this skill will be needed to be able to do this.
- Some steps will be more challenging than others for children to master, so when planning lessons, think about how much support children will need when tackling each step. Consider encouraging independent learning where possible, such as during fluency tasks (use classroom secrets resources). For more challenging topics, think about guiding children through concepts with teaching slides or one-to-one support. You may need to put additional support measures in place for children with learning difficulties, SEND children or EAL children.
- Deep learning should be encouraged to ensure children develop a strong and lasting understanding of concepts that can be built upon in future lessons. So rather than flying through the small steps, schedule in time to allow children to revisit what they've learned so that they can consolidate their knowledge. In each block ensure children have mathematical fluency tasks, encourage them to explore different approaches to maths problems and apply their understanding to different contexts.
- As teaching is taught in blocks it is **important** that children are given opportunities to revisit and consolidate their learning. These have been highlighted as part of your oral mental starters (OMS) but could also be part of your early work learning during registration.

Autumn/ Week	1	2	3	4	5	6	7	8	9	10	11	12
Area of focus	Assessment	Place value		Number: Addition and Subtraction,	Number : Multiplication and Division		Fractions			Geometry: Position and Direction	Geometry: Properties of Shapes	Assessment and Application and consolidation
Small steps	+ Revision of interpreting timetables from year 5.	<ul style="list-style-type: none"> <li>• Numbers to ten million.</li> <li>• Compare an order any number.</li> <li>• Round any numbers.</li> <li>• Negative numbers.</li> </ul> OMS; <ul style="list-style-type: none"> <li>• Recall times tables facts.</li> <li>• Multiply/divide by 10,100,1000</li> </ul>	<ul style="list-style-type: none"> <li>• Add and subtract whole numbers.</li> </ul> OMS; <ul style="list-style-type: none"> <li>• Recall times tables facts.</li> <li>• Place Value comparing numbers</li> </ul>	<ul style="list-style-type: none"> <li>• Multiply up to 4-digit by 1-digit number.</li> <li>• Short division.</li> <li>• Division using factors.</li> <li>• Long division (1).</li> <li>• Long division (2).</li> <li>• Long division (3).</li> <li>• Long division (4).</li> <li>• Common factors.</li> <li>• Common multiples.</li> <li>• Primes.</li> <li>• Squares and cubes.</li> <li>• Order of operations.</li> <li>• Mental calculations and estimation.</li> <li>• Reasoning from known facts.</li> </ul> OMS: <ul style="list-style-type: none"> <li>• Addition and subtraction calculations</li> <li>• Place value</li> <li>• Shape 2d/3d – properties</li> <li>• Recall times tables facts</li> </ul>	<ul style="list-style-type: none"> <li>• Simplify fractions.</li> <li>• Fractions on a number line.</li> <li>• Compare &amp; order (denominator).</li> <li>• Compare &amp; order (numerator).</li> <li>• Add &amp; subtract fractions (1).</li> <li>• Add &amp; subtract fractions (2).</li> <li>• Adding fractions.</li> <li>• Subtracting fractions.</li> <li>• Mixed addition and subtraction.</li> <li>• Multiply fractions by integers.</li> <li>• Multiply fractions by fractions.</li> <li>• Divide fractions by integers (1).</li> <li>• Divide fractions by integers (2).</li> <li>• Four rules with fractions.</li> <li>• Fraction of an amount.</li> <li>• Finding the whole.</li> </ul> OMS: <ul style="list-style-type: none"> <li>• Calculations for all four operations</li> <li>• Place value / Rounding</li> <li>• Negative numbers</li> </ul>	<ul style="list-style-type: none"> <li>• Coordinates in the first quadrant.</li> <li>• Coordinate in four quadrants.</li> <li>• Translations.</li> <li>• Reflections.</li> </ul> OMS: <ul style="list-style-type: none"> <li>• Calculations for all four operations.</li> <li>• Add and subtract fractions</li> <li>• Fractions of an amount.</li> </ul>	<ul style="list-style-type: none"> <li>• Measure with a protractor.</li> <li>• Introduce angles.</li> <li>• Calculate angles.</li> <li>• Vertically opposite angles.</li> <li>• Angles in a triangle.</li> <li>• Angles in a triangle – special cases.</li> <li>• Angles in a triangle – missing angles.</li> <li>• Angles in special quadrilaterals.</li> <li>• Angles in regular polygons.</li> <li>• Draw shapes accurately.</li> <li>• Nets of 3D shapes.</li> </ul> OMS ; <ul style="list-style-type: none"> <li>• Recall times tables facts.</li> <li>• Place value/ordering</li> <li>• Calculating all four operations</li> </ul>	Consolidation and application of skills to problem solving.  Revisit any areas of weakness from assessments.				

Spring/ Week	1	2	3	4	5	6	7	8	9	10	11	12
<b>Area of focus</b>	<b>Number - Percentages Fractions</b>	<b>Number : Decimals</b>		<b>Number : Ratio</b>	<b>Number ; Algebra</b>	<b>Assessment</b>	<b>Measurement: Converting Units + go through SATS papers</b>	<b>Measurement: Perimeter, Area and Volume + targeted SATS Practice</b>		<b>Statistics + targeted SATS Practice</b>	<b>Assessment + targeted SATS Practice</b>	<b>Place value – all four operations + go through SATS papers</b>
<b>Small steps</b>	Revisit fractions from Autumn term. <ul style="list-style-type: none"> <li>Fractions to percentages.</li> <li>Equivalent FDP.</li> <li>Percentage of an amount (1).</li> <li>Percentage of an amount (2).</li> <li>Percentages –missing values.</li> <li>Percentage increase and decrease.</li> <li>Order FDP.</li> </ul> OMS ; <ul style="list-style-type: none"> <li>Coordinates</li> <li>Common factors.</li> <li>Common multiples.</li> <li>Primes.</li> <li>Squares and cubes.</li> </ul>	<ul style="list-style-type: none"> <li>Three decimal places.</li> <li>Multiply by 10, 100 and 1,000.</li> <li>Divide by 10, 100 and 1,000.</li> <li>Multiply decimals by Integers.</li> <li>Divide decimals by integers.</li> <li>Division to solve problems.</li> <li>Decimals as fractions.</li> <li>Fractions to decimals (1).</li> <li>Fractions to decimals (2).</li> </ul> OMS ; <ul style="list-style-type: none"> <li>Recall times tables facts.</li> <li>Fractions adding and subtracting.</li> </ul>		<ul style="list-style-type: none"> <li>Use ratio language.</li> <li>Ratio and fractions.</li> <li>Introducing the ratio symbol.</li> <li>Calculating ratio.</li> <li>Using scale factors.</li> <li>Calculating scale factors.</li> <li>Ratio and proportion problems.</li> </ul> OMS ; <ul style="list-style-type: none"> <li>Fractions – calculating.</li> <li>Calculating all four operations</li> <li>Converting measurements.</li> <li>Position and direction</li> </ul>	<ul style="list-style-type: none"> <li>Find a rule – one step.</li> <li>Find a rule – two step.</li> <li>Use an algebraic rule.</li> <li>Substitution.</li> <li>Formulae.</li> <li>Word problems.</li> <li>Solve simple one step equations.</li> <li>Solve two step equations.</li> <li>Find pairs of values.</li> <li>Enumerate possibilities.</li> </ul> OMS ; <ul style="list-style-type: none"> <li>Percentages</li> <li>Fractions of an amount.</li> <li>Multiplying / dividing by 10, 100, 1000.</li> <li>Calculating all four operations</li> </ul>	+Revise addition and subtraction column methods  +Revise converting measurements.  Start on week 7 measurement if possible.	<ul style="list-style-type: none"> <li>Metric measures.</li> <li>Convert metric measures.</li> <li>Calculate with metric measures.</li> <li>Miles and kilometres.</li> <li>Imperial measures.</li> </ul> OMS ; <ul style="list-style-type: none"> <li>Recall times tables facts.</li> <li>Ordering FDP</li> <li>Calculating all four operations</li> </ul>	<ul style="list-style-type: none"> <li>Shapes – same area.</li> <li>Area and perimeter.</li> <li>Area of a triangle (1).</li> <li>Area of a triangle (2).</li> <li>Area of a triangle (3).</li> <li>Area of a parallelogram.</li> <li>Volume – counting cubes.</li> <li>Volume of a cuboid.</li> </ul> OMS ; <ul style="list-style-type: none"> <li>Calculating all four operations</li> <li>Algebra one and two step rules.</li> <li>Calculating with fractions.</li> <li>Percentage of an amount</li> </ul>		<ul style="list-style-type: none"> <li>Read and interpret line graphs.</li> <li>Draw line graphs.</li> <li>Use line graphs to solve problems.</li> <li>Circles.</li> <li>Read and interpret pie charts.</li> <li>Pie charts with percentages.</li> <li>Draw pie charts.</li> <li>The mean.</li> </ul> OMS ; <ul style="list-style-type: none"> <li>Ratio</li> <li>Algebra</li> <li>Calculating all four operations</li> </ul> Angles	<ul style="list-style-type: none"> <li>Refer to targets from previous test analysis.</li> </ul>	<ul style="list-style-type: none"> <li>Go through papers in detail.</li> <li>Set new targets.</li> </ul> Revisit place value and calculations for all four operations from term one and application to multi step problems.  OMS ; <ul style="list-style-type: none"> <li>Recall times tables facts.</li> <li>Roman numerals</li> </ul>
<b>Summer/ Week</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	
<b>Area of focus</b>	<b>Consolidation and application of skills to problem solving + SATS practice</b>											
<b>Small steps</b>	Consolidation and application of skills to problem solving and investigations + SATS practice											
	Revisit any areas of weakness.											

YEAR 6 Maths National Curriculum

NUMBER - Number, place value and rounding.	NUMBER - Addition, subtraction, multiplication and division	NUMBER - Percentages, decimals and fractions	Ratio and Proportion	Algebra	Measurement	GEOMETRY - Properties of Shape	GEOMETRY - Position and direction	Statistics
<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>Read, write, order and compare numbers up to 10000000 and determine the value of each digit</li> <li>round any whole number to a required degree of accuracy</li> <li>use negative numbers in context, and calculate intervals across zero</li> <li>solve number and practical problems that involve all of the above.</li> </ul>	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>multiply multi-digit numbers up to 4 digits by a two-digit</li> <li>whole number using the formal written method of long multiplication</li> <li>divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context</li> <li>divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context</li> <li>perform mental calculations, including with mixed operations and large numbers</li> <li>identify common factors, common multiples and prime numbers</li> <li>use their knowledge of the order of operations to carry out calculations involving the four operations</li> <li>solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</li> <li>solve problems involving addition, subtraction, multiplication and division</li> <li>use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.</li> </ul>	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>use common factors to simplify fractions; use common multiples to express fractions in the same denomination</li> <li>compare and order fractions, including fractions <math>&gt; 1</math></li> <li>add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions</li> <li>multiply simple pairs of proper fractions, writing the answer in its simplest form (for example, <math>\frac{1}{4} \times \frac{1}{2} = 1/8</math>)</li> <li>divide proper fractions by whole numbers (for example, <math>1/3 \div 2 = 1/6</math>)</li> <li>associate a fraction with division and calculate decimal fraction equivalents (for example, 0.375) for a simple fraction (for example, 3/8)</li> <li>identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places</li> <li>multiply one-digit numbers with up to two decimal places by whole numbers</li> <li>use written division methods in cases where the answer has up to two decimal places</li> <li>solve problems which require answers to be rounded to specified degrees of accuracy</li> <li>recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.</li> </ul>	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts</li> <li>solve problems involving the calculation of percentages (for example, of measures, and such as 15% of 360) and the use of percentages for comparison</li> <li>solve problems involving similar shapes where the scale factor is known or can be found</li> <li>solve problems involving unequal sharing and grouping using</li> </ul>	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>Use simple formulae generate and describe linear number sequences</li> <li>express missing number problems algebraically</li> <li>generate and describe linear number sequences</li> <li>find pairs of numbers that satisfy an equation with two unknowns</li> <li>enumerate possibilities of combinations of two variables.</li> </ul>	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate</li> <li>use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places</li> <li>convert between miles and kilometres</li> <li>recognise that shapes with the same areas can have different perimeters and vice versa</li> <li>recognise when it is possible to use formulae for area and volume of shapes</li> <li>calculate the area of parallelograms and triangles</li> <li>calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (<math>\text{cm}^3</math>) and cubic metres (<math>\text{m}^3</math>), and extending to other units (for example, <math>\text{mm}^3</math> and <math>\text{km}^3</math>).</li> </ul>	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>draw 2-D shapes using given dimensions and angles</li> <li>recognise, describe and build simple 3-D shapes, including making nets</li> <li>compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons</li> <li>illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter</li> </ul>	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>describe positions on the full coordinate grid (all four quadrants)</li> <li>draw and translate simple shapes on the coordinate plane, and reflect them in the axes.</li> </ul>	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>interpret and construct pie charts and line graphs and use these to solve problem</li> <li>calculate and interpret the mean as an average.</li> </ul>

YEAR 5 - National Curriculum 2014

NUMBER - Number and place value.	NUMBER - Addition and Subtraction	NUMBER - Multiplication and Division	NUMBER - Fractions	MEASUREMENT	GEOMETRY - Properties of Shape	GEOMETRY - Position and direction	STATISTICS - Data
<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>• read, write, order and compare numbers to at least 1000000 and determine the value of each digit</li> <li>• count forwards or backwards in steps of powers of 10 for any given number up to 1000 000</li> <li>• interpret negative numbers in context, count forwards and backwards with positive and</li> </ul>	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>• add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)</li> <li>• add and subtract numbers mentally with increasingly large numbers</li> <li>• use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy</li> <li>• solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.</li> </ul>	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>• identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers</li> <li>• know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers</li> <li>• establish whether a number up to 100 is prime and recall prime numbers up to 19</li> <li>• multiply numbers up to 4 digits by a one-or two-digit number using a formal written method, including long multiplication for two-digit numbers</li> <li>• multiply and divide numbers mentally drawing upon known facts</li> <li>• divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context</li> </ul>	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>• compare and order fractions whose denominators are all multiples of the same number</li> <li>• identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths</li> <li>• recognise mixed numbers and improper fractions and convert from one form to the other</li> <li>• add and subtract fractions with the same denominator and related fractions; write mathematical statements <math>&gt;1</math> as a mixed number (e.g. <math>2/5 + 4/5 = 6/5 = 11/5</math>)</li> <li>• multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.</li> </ul> <p>Decimals &amp; Fractions</p> <ul style="list-style-type: none"> <li>• read and write decimal numbers as fractions (e.g. <math>0.71 = 71/100</math>)</li> </ul>	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>• convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; millimetre; gram and kilogram; litre and millilitre)</li> <li>• understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints</li> <li>• measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres</li> <li>• calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (<math>\text{cm}^2</math>) and square metres (<math>\text{m}^2</math>) and estimate the area of irregular shapes</li> </ul>	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>• identify 3-D shapes, including cubes and other cuboids, from 2-D representations</li> <li>• know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles</li> <li>• draw given angles, and measure them in degrees (<math>^\circ</math>)</li> <li>• identify: <ul style="list-style-type: none"> <li>• angles at a point and one whole turn (total <math>360^\circ</math>)</li> <li>• angles at a point on a straight line and <math>\frac{1}{2}</math> a turn (total <math>180^\circ</math>)</li> <li>• other multiples of <math>90^\circ</math></li> </ul> </li> <li>• use the properties of rectangles to deduce related facts and find missing lengths and angles</li> <li>• distinguish between regular and irregular polygons based on reasoning about equal sides and angles.</li> </ul>	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>• identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.</li> </ul>	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>• solve comparison, sum and difference problems using information presented in line graphs</li> <li>• complete, read and interpret information in tables, including timetables.</li> </ul>

<p>negative whole numbers through zero</p> <ul style="list-style-type: none"> <li>round any number up to 1 000 000 to the nearest 10, 100, 1000, 10000 and 100000</li> <li>solve number problems and practical problems that involve all of the above</li> <li>read Roman numerals to 1000 (M) and recognise years written in Roman numerals.</li> </ul>		<ul style="list-style-type: none"> <li>multiply and divide whole numbers and those involving decimals by 10, 100 and 1000</li> <li>recognise and use square numbers and cube numbers, and the notation for squared (<sup>2</sup>) and cubed (<sup>3</sup>)</li> <li>solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes</li> <li>solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign</li> <li>solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.</li> </ul>	<ul style="list-style-type: none"> <li>recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents</li> <li>round decimals with two decimal places to the nearest whole number and to one decimal place</li> <li>read, write, order and compare numbers with up to three decimal places</li> <li>solve problems involving number up to three decimal places.</li> </ul> <p>Percentages, decimals &amp; fractions</p> <ul style="list-style-type: none"> <li>recognise the per cent symbol (%) and understand that per cent relates to "number of parts per hundred", and write percentages as a fraction with denominator hundred, and as a decimal fraction</li> <li>solve problems which require knowing percentage and decimal equivalents of <math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, <math>\frac{1}{5}</math>, <math>\frac{2}{5}</math>, <math>\frac{4}{5}</math> and those with a denominator of a multiple of 10 or 25.</li> </ul>	<ul style="list-style-type: none"> <li>estimate volume (for example, using 1 cm<sup>3</sup> blocks to build cuboids (including cubes)) and capacity (for example, using water)</li> <li>solve problems involving converting between units of time</li> <li>use all four operations to solve problems involving measure (for example, length, mass, volume, money) using decimal notation, including scaling.</li> </ul>			
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