

**Y6 medium-term immersion plan – Autumn Term learning sequence 1**

Week	1	2	3	4	5	6	7	8	9	10	11	12
<b>Number and place value</b>	<ul style="list-style-type: none"> <li>read, write, order and compare numbers up to 10 000 000 and determine the value of each digit <b>6N2</b></li> <li>determine the value of each digit in numbers up to 10 000 000 <b>6N3</b></li> <li>round any whole number to a required degree of accuracy <b>to the nearest power of 10</b> <b>6N4</b></li> <li>solve number and practical problems that involve all of the above <b>6N6</b></li> <li><b>apply understanding of the number system to decimal numbers and fractions they have met so far</b></li> <li><b>recognise and describe linear number sequences including those involving fractions and describe the term to term rule</b></li> <li><b>develop skills of rounding, estimating, predicting and checking the reasonableness of answers</b></li> </ul>											
	<ul style="list-style-type: none"> <li>identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places <b>6F9a</b></li> <li>solve problems which require answers to be rounded to specified degrees of accuracy <b>6F10</b> <ul style="list-style-type: none"> <li>learn about why we round recurring decimals</li> <li>rounding to 3 decimal places</li> <li>checking the reasonableness of their answers using knowledge of decimal place value</li> </ul> </li> <li>recall and use equivalences between simple fractions, decimals and percentages, including in different contexts <b>6F11</b> <ul style="list-style-type: none"> <li>explore and make conjectures about converting a simple fraction to a decimal fraction (for example, <math>3 \div 8 = 0.375</math>)</li> </ul> </li> <li>calculate with increasing accuracy                             <ul style="list-style-type: none"> <li>multiply a one digit decimal number by a single digit number (e.g. <math>0.6 \times 8</math>)</li> <li>add and subtract decimal numbers that have the same number of decimal places</li> </ul> </li> </ul>				<ul style="list-style-type: none"> <li><b>recognise and use equivalent fractions</b></li> <li>use common factors to simplify fractions; use common multiples to express fractions in the same denomination <b>6F2</b></li> <li>compare and order fractions, including fractions <math>&gt;1</math> <b>6F3</b></li> <li>add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions <b>6F4</b></li> <li>multiply simple pairs of proper fractions, writing the answer in its simplest form [ for example, <math>1/4 \times 1/2 = 1/8</math>] <b>using concrete resources and pictorial representation to aid understanding</b> <b>6F5a</b></li> <li>divide proper fractions by whole numbers [for example, <math>1/3 \div 2 = 1/6</math>] <b>using concrete resources and pictorial representation to aid understanding</b> <b>6F5b</b></li> <li>associate a fraction with division and calculate decimal fraction equivalents [for example, <math>3/8</math>] <b>6F6</b></li> <li><b>solve problems that require finding simple fractions and percentages of whole numbers and quantities</b></li> </ul>				<ul style="list-style-type: none"> <li>multiply one-digit numbers with up to two decimal places by whole numbers <b>6F9b</b></li> <li>use written division methods in cases where the answer has up to two decimal places <b>6F9c</b></li> </ul>			
<b>Fractions (including decimals and percentages)</b>	<ul style="list-style-type: none"> <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 <b>6M7a</b> <ul style="list-style-type: none"> <li>could be introduced to compound units for speed such as miles per hour and apply their knowledge in science or other appropriate subjects</li> </ul> </li> <li>solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate <b>6M9</b></li> </ul>											
	<ul style="list-style-type: none"> <li><b>begin to use symbols and letters to represent variables and unknowns in mathematical situations they already understand</b></li> <li>express missing number problems algebraically <b>and relate to missing number problems and the use of the inverse in previous years</b> <b>6A1</b></li> <li><b>begin to generalise and describe linear number sequences</b> <b>6A3</b></li> <li><b>rehearse finding pairs of numbers that satisfy an equation with two unknowns e.g. Ben thinks of two numbers: the sum of the two numbers is 10: multiplied together they make 24: what are Ben's numbers?</b> <b>6A4</b></li> <li>enumerate possibilities of combinations of two variables e.g. number puzzles - which two numbers could add up to ...? <b>6A5</b></li> </ul>											
<b>Measurement</b>	<ul style="list-style-type: none"> <li><b>continue to develop fluency in multiplication and division facts to 12 x 12 and derive related facts</b></li> <li><b>multiply and divide numbers mentally drawing on known facts and strategies with increasing efficiency</b></li> <li>perform mental calculations, including with mixed operations and large numbers <b>6C6</b></li> <li><b>recognise and use multiples, factors, prime numbers less than 20 and square numbers up to 144</b></li> <li>identify common factors, common multiples and prime numbers <b>6C5</b></li> <li>use their knowledge of the order of operations to carry out calculations involving the four operations <b>relate to understanding of commutativity, associative and distributive law</b> <b>6C9</b></li> </ul>											
	<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 <b>and relate to scaling from years 3 – 5</b> <b>6R1</b></li> <li>solve problems involving unequal sharing and grouping using knowledge of fractions and multiples e.g. 'for every egg you need 3 spoonfuls of flour' <b>6R4</b> <ul style="list-style-type: none"> <li>begin to use a:b notation to record their work</li> </ul> </li> </ul>											
<b>Algebra</b>	<ul style="list-style-type: none"> <li><b>continue to develop fluency in multiplication and division facts to 12 x 12 and derive related facts</b></li> <li><b>multiply and divide numbers mentally drawing on known facts and strategies with increasing efficiency</b></li> <li>perform mental calculations, including with mixed operations and large numbers <b>6C6</b></li> <li><b>recognise and use multiples, factors, prime numbers less than 20 and square numbers up to 144</b></li> <li>identify common factors, common multiples and prime numbers <b>6C5</b></li> <li>use their knowledge of the order of operations to carry out calculations involving the four operations <b>relate to understanding of commutativity, associative and distributive law</b> <b>6C9</b></li> </ul>											
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<b>Addition, subtraction, multiplication and division</b>	<ul style="list-style-type: none"> <li><b>continue to develop fluency in multiplication and division facts to 12 x 12 and derive related facts</b></li> <li><b>multiply and divide numbers mentally drawing on known facts and strategies with increasing efficiency</b></li> <li>perform mental calculations, including with mixed operations and large numbers <b>6C6</b></li> <li><b>recognise and use multiples, factors, prime numbers less than 20 and square numbers up to 144</b></li> <li>identify common factors, common multiples and prime numbers <b>6C5</b></li> <li>use their knowledge of the order of operations to carry out calculations involving the four operations <b>relate to understanding of commutativity, associative and distributive law</b> <b>6C9</b></li> </ul>											
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<b>Ratio and proportion</b>	<ul style="list-style-type: none"> <li><b>continue to develop fluency in multiplication and division facts to 12 x 12 and derive related facts</b></li> <li><b>multiply and divide numbers mentally drawing on known facts and strategies with increasing efficiency</b></li> <li>perform mental calculations, including with mixed operations and large numbers <b>6C6</b></li> <li><b>recognise and use multiples, factors, prime numbers less than 20 and square numbers up to 144</b></li> <li>identify common factors, common multiples and prime numbers <b>6C5</b></li> <li>use their knowledge of the order of operations to carry out calculations involving the four operations <b>relate to understanding of commutativity, associative and distributive law</b> <b>6C9</b></li> </ul>											
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**Y6 medium-term immersion plan – Spring Term learning sequence 2**

Week	1	2	3	4	5	6	7	8	9	10	11	12
<b>Geometry</b>	<ul style="list-style-type: none"> <li>compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons <b>6G2a/4a</b> <ul style="list-style-type: none"> <li>relationships might be expressed algebraically for example <math>a=180 - (b+c)</math></li> </ul> </li> <li>draw 2-D shapes using given dimensions and angles <b>6G3a</b> <ul style="list-style-type: none"> <li>using measuring tools and conventional markings for lines and angles</li> <li>sides that are accurate to +/- 2mm</li> <li>angles that are multiples of 5° and accurate to +/- 2'</li> </ul> </li> <li>recognise, describe and build simple 3-D shapes, including making nets <b>6G2b/3b</b></li> <li>recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles <b>6G4b</b></li> <li>illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius <b>6G5</b> <ul style="list-style-type: none"> <li>relationships might be expressed algebraically for example <math>d = 2 \times r</math></li> </ul> </li> </ul>						<ul style="list-style-type: none"> <li>identify, describe and draw translations of simple shapes on the coordinate plane, and reflect them in the axes <b>6P2</b></li> <li>identify, describe and represent the position of a shape on the full coordinate grid (all four quadrants) <b>6P3</b> <ul style="list-style-type: none"> <li>where the quadrants have equal scaling</li> <li>including the use of negative numbers</li> <li>with increasing confidence in all four quadrants</li> </ul> </li> <li>draw and label rectangles (including squares), parallelograms and rhombuses, specified by coordinates in the four quadrants, predicting missing coordinates using the properties of shapes</li> </ul>					
<b>Ratio and proportion</b>	<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 <b>6R1</b></li> <li>solve problems involving the calculation of percentages [for example, of measures such as 15% of 360] and the use of percentages for comparison <b>6R2</b></li> <li>solve problems involving similar shapes where the scale factor is known or can be found <b>6R3</b> <ul style="list-style-type: none"> <li>consolidate understanding by solving a variety of problems comparing quantities, sizes and scale drawings</li> <li>estimate distance on a map using a simple scale</li> <li>use a:b notation to record their work</li> </ul> </li> </ul>											
<b>Algebra</b>	<ul style="list-style-type: none"> <li>express missing number problems algebraically <b>6A1</b></li> <li>use simple formulae <b>6A2</b></li> <li>generate and describe linear number sequences <b>6A3</b></li> <li>find pairs of numbers that satisfy an equation with two unknowns <b>6A4</b></li> <li>enumerate possibilities of combinations of two variables <b>6A5</b></li> </ul>											
<b>Measurement</b>	<ul style="list-style-type: none"> <li>recognise that shapes with the same areas can have different perimeters and vice versa <b>6M7a</b></li> <li>calculate the area of parallelograms and triangles <b>6M7b</b></li> <li>recognise when it is possible to use formulae for area and volume of shapes <b>6M7c/8b</b></li> <li>calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm<sup>3</sup>) and cubic metres (m<sup>3</sup>), and extending to other units [for example mm<sup>3</sup> and km<sup>3</sup>] <b>6M8a</b></li> </ul>											
<b>Addition, subtraction, multiplication and division</b>	<ul style="list-style-type: none"> <li>identify common factors, common multiples and prime numbers <b>6C5</b></li> <li>perform mental calculations, including with mixed operations and large numbers <b>6C6</b></li> <li>use jottings where necessary to speed up a the process of calculating mentally</li> <li>use their knowledge of the order of operations to carry out calculations involving the four operations and relate to understanding of commutativity and associative and distributive law <b>6C9</b></li> </ul>						<ul style="list-style-type: none"> <li>solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why <b>6C4</b></li> <li>multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication <b>6C7a</b></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 <b>6C7b</b></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 <b>6C7c</b></li> <li>solve problems involving addition, subtraction, multiplication and division <b>6C8</b></li> </ul>					
<b>Statistics</b>							<ul style="list-style-type: none"> <li>interpret and construct pie charts and line graphs and use these to solve problems <b>6S1</b></li> </ul>					
<b>Fractions (including decimals and percentages)</b>							<ul style="list-style-type: none"> <li>add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions <b>6F4</b></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} = \frac{1}{8}</math>] <b>6F5a</b></li> <li>divide proper fractions by whole numbers [for example, <math>\frac{1}{3} \div 2 = \frac{1}{6}</math>] <b>6F5b</b></li> <li>associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, <math>\frac{3}{8}</math>] <b>6F6</b></li> <li>identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places <b>6F9a</b></li> <li>multiply one-digit numbers with up to two decimal places by whole numbers <b>6F9b</b></li> <li>use written division methods in cases where the answer has up to two decimal places <b>6F9c</b></li> <li>solve problems which require answers to be rounded to specified degrees of accuracy <b>6F10</b></li> <li>recall and use equivalences between simple fractions, decimals and percentages, including in different contexts <b>6F11</b></li> </ul>					

Y6 medium-term immersion plan – Summer Term learning sequence 3

Week	1	2	3	4	5	6	7	8	9	10	11	12
Addition, subtraction, multiplication and division	<ul style="list-style-type: none"> <li>use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy <b>6C3</b></li> <li>solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why <b>6C4</b></li> <li>identify common factors, common multiples and prime numbers <b>6C5</b></li> <li>perform mental calculations, including with mixed operations and large numbers <b>6C6</b></li> <li>multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication <b>6C7a</b></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 <b>6C7b</b></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 <b>6C7c</b></li> <li>solve problems involving addition, subtraction, multiplication and division <b>6C8</b></li> <li>use their knowledge of the order of operations to carry out calculations involving the four operations <b>6C9</b></li> </ul>											
	<ul style="list-style-type: none"> <li>calculate and interpret the mean as an average <b>6S3</b> <ul style="list-style-type: none"> <li>know when it is appropriate to find the mean of a data set</li> <li>for simple sets of discrete data (e.g. find the mean mass of three food packets weighing 2kg, 7kg and 10kg)</li> </ul> </li> <li>interpret and construct pie charts, line graphs and tables and use these to solve problems <b>6S1</b> <ul style="list-style-type: none"> <li>connect conversion from kilometres to miles in measurement to its graphical representation</li> <li>continue to read and interpret information using various graphs</li> <li>construct tables, charts and graphs that help to answer their questions</li> <li>solve comparison, sum and difference problems using information presented in charts and graphs</li> </ul> </li> </ul>											
Number and place value	<ul style="list-style-type: none"> <li>use negative numbers in context, and calculate intervals across zero <b>6N5</b></li> <li>solve number and practical problems that involve understanding of negative numbers such as temperature and plotting coordinates on four quadrants <b>6N6</b></li> </ul>											
Measurement	<ul style="list-style-type: none"> <li>use, add and subtract positive and negative integers for measures such as temperature</li> <li>connect conversion (for example, from kilometres to miles) to a graphical representation see statistics</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 of up to three decimal places <b>6M5</b></li> <li>continue to rehearse using approximate equivalences between metric measures and common imperial units such as inches, pounds and pints <b>5M6 (continued from Y5)</b></li> <li>convert between miles and kilometres <b>6M6</b></li> </ul>											
Geometry	<ul style="list-style-type: none"> <li>compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons <b>6G2a</b></li> <li>draw and translate simple shapes on the coordinate plane, and reflect them in the axes <b>6P2</b></li> <li>describe positions on the full coordinate grid (all four quadrants) <b>6P3</b></li> </ul>											
Algebra	<ul style="list-style-type: none"> <li>express missing number problems algebraically <b>6A1</b></li> <li>use simple formulae <b>6A2</b></li> <li>generate and describe linear number sequences <b>6A3</b></li> <li>find pairs of numbers that satisfy an equation with two unknowns <b>6A4</b></li> <li>enumerate possibilities of combinations of two variables <b>6A5</b></li> </ul>											
Ratio and proportion	<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 <b>6R1</b></li> <li>solve problems involving the calculation of percentages [for example, of measures such as 15% of 360] and the use of percentages for comparison <b>6R2</b></li> <li>solve problems involving similar shapes where the scale factor is known or can be found <b>6R3</b></li> <li>solve problems involving unequal sharing and grouping using knowledge of fractions and multiples <b>6R4</b></li> </ul>											