

# Year 5 Mathematics Content Map

Unit and time	Skill	Reasoning	Problem Solving
TERM 1			
<b>Place value</b>  <b>3 weeks</b>  White Rose	<ul style="list-style-type: none"> <li>read, write, order and compare numbers to at least 1,000,000 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 1,000,000</li> <li>round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000</li> <li>solve number problems and practical problems that involve all of the above</li> <li>read Roman numerals to 1,000 (M) and recognise years written in Roman numerals</li> </ul>	Possible answers  Do, then explain	
<b>Addition and Subtraction</b>  <b>2 weeks</b>  White Rose	<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>	Hard and easy questions  True or false?	
<b>Multiplication and division</b> (short multiplication and division)  <b>2 weeks</b>  White Rose unit B NCETM unit 4	<ul style="list-style-type: none"> <li>multiply numbers up to 4 digits by a one-digit number using a formal written method (short multiplication)</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> <li>solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign</li> </ul>	Fact families  Odd one out	
<b>Place Value</b> (Negative Numbers)  <b>1 week</b>  White Rose NCETM unit 3 (steps 1 -7 only)	<ul style="list-style-type: none"> <li>interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through 0</li> </ul>	Spot the mistake	

TERM 2			
<p><b>Multiplication and division</b> (factors, multiples and primes)</p> <p><b>Measurement</b> (volume)</p> <p><b>4 weeks</b></p> <p>White Rose unit A and volume NCETM unit 7 and</p>	<ul style="list-style-type: none"><li>• identify multiples and factors, including finding all factor pairs of a number, and common factors of 2 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 and divide whole numbers and those involving decimals by 10, 100 and 1,000</li></ul> <p>recognise and use square numbers and cube numbers, and the notation for squared (<sup>2</sup>) and cubed (<sup>3</sup>)</p> <p>INCLUDE: volume in this unit</p> <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 multiplication and division, including using their knowledge of factors and multiples, squares and cubes</li></ul>	<p>Always, sometimes, never</p> <p>Prove it</p> <p>Missing numbers</p>	Exploring and noticing
<p><b>Multiplication and division</b> (long multiplication and revise short division)</p> <p><b>2 weeks</b></p> <p>Year 6 NCETM unit 4 (long multiplication only)</p>	<ul style="list-style-type: none"><li>• multiply numbers up to 4 digits by a one- or <b>two-digit</b> 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 (<i>recap</i>)</li><li>• solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign</li></ul>	<p>Find the mistake</p>	
<p><b>Statistics</b></p> <p><b>1 week</b></p> <p>White Rose (Begin with position and direction step 1 and 2 and then move on to statistics step 1 -3)</p>	<ul style="list-style-type: none"><li>• solve comparison, sum and difference problems using information presented in a line graph (<i>recap co-ordinates and make the line between these are line graphs</i>)</li></ul>	<p>What's the question?</p>	
TERM 3 – 6 weeks			
<p><b>Decimal fractions</b></p>	<ul style="list-style-type: none"><li>• read and write decimal numbers as fractions [for example, 0.71 = 71/100]</li></ul>	<p>What do you notice?</p>	

<b>4 week</b>  White Rose NCETM unit 1	<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></ul>	What comes next?  Ordering	Working systematically
<b>Area, perimeter and scaling</b>  <b>2 week</b> White Rose NCETM unit 5	<ul style="list-style-type: none"><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 (cm<sup>2</sup>) and square metres (m<sup>2</sup>) and estimate the area of irregular shapes</li></ul>	Do, then explain  Odd one out	
TERM 4 – 6 weeks			
<b>Calculating decimal fractions</b>  <b>3 weeks</b> White Rose NCETM unit 6	<ul style="list-style-type: none"><li>multiply and divide whole numbers and those involving decimals by 10, 100 and 1000</li><li>solve problems involving number up to three decimal places</li><li>solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.</li></ul>	Another and another  What do you notice?	Visualising
<b>Measure</b>  <b>3 weeks</b>  White Rose NCETM unit 9 (converting units)	<ul style="list-style-type: none"><li>convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and 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>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>	Other possibilities  Always, sometimes, never	
TERM 5 – 4 ½ weeks			
<b>Statistics</b>  <b>½ week</b>  White Rose	<ul style="list-style-type: none"><li>complete, read and interpret information in tables, including timetables</li></ul>	True or false?  What's the same? What's different?	Conjecturing and generalising
<b>Fractions</b>  <b>4 weeks</b>  White Rose NCETM unit 8	<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></ul>	Odd one out  True or false?  Spot the mistake	

	<ul style="list-style-type: none"> <li>recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements <math>&gt; 1</math> as a mixed number [for example, <math>2/5 + 4/5 = 6/5 = 1 \frac{1}{5}</math>]</li> <li>add and subtract fractions with the same denominator and denominators that are multiples of the same number</li> <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 100, and as a decimal</li> </ul>	Do, then explain	
TERM 6 – 6 weeks			
<b>Fractions continued</b>  <b>3 week</b> White Rose NCETM unit 8	<ul style="list-style-type: none"> <li>multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams</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 fractions with a denominator of a multiple of 10 or 25.</li> <li>solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.</li> </ul>	Continue the pattern  Ordering  Another and another	Reasoning and convincing
<b>Shape</b>  <b>2 weeks</b> White Rose NCETM unit 10 (Angles)	<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>	Always, sometimes, never  Other possibilities  Convince me	
<b>Position and direction</b>  <b>1 week</b>  White Rose	<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>	Working backwards	