



## Year 3 Mathematics Yearly Overview

(Some terms may be longer; some units may vary in length of time due to AFL)

### Mental/Oral Starters (based on AFL)

- Find 1 more, 10. And 100 more or less than a given number.
- Count in multiples of 50 and 100, predict the next number in a sequence.
- Round numbers to the nearest 10 or 100
- Recall multiples of 3
- Compare and order numbers to at least 1000 using less than/greater than symbols.

	<p style="text-align: center;"><b>Prior Learning</b></p> <p>Read and write numbers to 100 in numerals and words. Recognise the place value of each digit in a 2-digit number. Partition numbers in different ways.</p>	<p style="text-align: center;"><b>Prior Learning</b></p> <p>Find 1/10 more/less Count in steps of 2, 3, and 5. Add and subtract numbers using concrete, pictorial and mental strategies with 2 digit numbers and tens/ones.</p>	<p style="text-align: center;"><b>Prior Learning</b></p> <p>Add and subtract numbers using concrete, pictorial, representations. Recognise and use the inverse relationship between addition and subtraction and use this to check calculations &amp; solve missing No.</p>	<p style="text-align: center;"><b>Prior Learning</b></p> <p>Recall subtraction facts to 20 and derive and use related facts up to 100.</p>	<p style="text-align: center;"><b>Prior Learning</b></p> <p>Recall and use multiplication and division facts for the 2, 5 and 10. Solve problems involving multiplication and division facts including those with remainders.</p>
	<p style="text-align: center;"><b>Number Place Value</b></p> <ul style="list-style-type: none"> <li>• Read and write numbers to at least 1000 in numerals and in words.</li> <li>• Recognise the place value of each digit in a three-digit number (hundreds, tens and ones).</li> <li>• <i>Partition numbers in different ways. (e.g. <math>146 = 100 + 40 + 6</math> and <math>146 = 130 + 16</math>)</i></li> <li>• Compare and order numbers up to 1000.</li> </ul> <p style="color: purple;">WR: Autumn Place Value (Small Steps 1-6)</p>	<p style="text-align: center;"><b>Place Value: Mental calculations.</b></p> <ul style="list-style-type: none"> <li>• Round numbers to at least 1000 to the nearest 10 and 100.</li> <li>• Count from 0 in multiples of 50 and 100.</li> <li>• Describe and extend number sequences involving counting on or back in different steps.</li> <li>• Add and subtract mentally: - a three-digit number and ones - a three-digit number and tens - a three-digit number and hundreds. The place value work in this week is in the context of sequences and calculation.</li> </ul> <p style="color: purple;">WR: Autumn Addition and Subtraction (Small Steps 1-11) NCETM Spine: <b>1.17</b></p>	<p style="text-align: center;"><b>Formal Written Addition method</b></p> <ul style="list-style-type: none"> <li>• Add numbers with up to three digits, using formal written method of columnar addition.</li> </ul> <p>Estimate the answer to a calculation and use inverse operations to check answers.</p> <ul style="list-style-type: none"> <li>• Solve number problems.</li> </ul> <p style="color: purple;">WRH: Autumn Addition &amp; Subtraction  NCETM Spine: <b>1.20</b></p>	<p style="text-align: center;"><b>Formal Written Subtraction</b></p> <ul style="list-style-type: none"> <li>• Subtract numbers with up to 3 digits, using the Formal written method.</li> </ul> <p>Estimate the answer to a calculation and use inverse operations to check answers.</p> <ul style="list-style-type: none"> <li>• Solve number problems.</li> </ul> <p style="color: purple;">WR: Autumn Addition &amp; Subtraction  NCETM Spine: <b>1.21</b></p>	<p style="text-align: center;"><b>Multiplication and Division</b></p> <ul style="list-style-type: none"> <li>• Recall and use multiplication and division facts for the 2, 5 and 10.</li> </ul> <p>Children build on their understanding of place value skills in mental multiplication to develop a written method for addition. Written methods should be introduced in the missing number problems. Efficient written methods are required to the end of Key Stage 2.</p> <ul style="list-style-type: none"> <li>• Key Stage 2 appropriate strategy to solve a calculation.</li> </ul>

NCETM: <https://www.ncetm.org.uk/teaching-for-mastery/mastery-materials/primary-mastery-professional-development> (Spine 1: Number, Add & Subtract, Spine 2: Multiplication and Division, Spine 3: Fractions)

White Rose Small Steps: <https://whiterosemaths.com/primary-sols/>

**Mental/Oral Starters** (based on AFL)

- Recall addition and subtraction facts for each number up to 20/100
- Find perimeter of different regular or irregular 2d shapes.
- Double any number up to 50.
- Statistics – How many more?
- Count in multiples of 4.

Autumn 2	<p><b>Prior Learning</b></p> <p>Recognize, find, name and write fractions <math>\frac{1}{3}</math>, <math>\frac{1}{4}</math>, <math>\frac{2}{4}</math> and <math>\frac{3}{4}</math> of a length, shape, set of objects or quantity.</p>	<p><b>Prior Learning</b></p> <p>Interpret and construct simple pictograms, tally charts, block diagrams and simple tables. Ask and answer questions about totalling and comparing data.</p>	<p><b>Prior Learning</b></p> <p>Describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line.</p>	<p><b>Prior Learning</b></p> <ul style="list-style-type: none"> <li>• Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times</li> <li>• know the number of minutes in an hour and the number of hours in a day</li> </ul>
	<p><b>Number - Fractions</b></p> <ul style="list-style-type: none"> <li>• count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10</li> <li>• Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.</li> </ul> <p>WR: Spring Fractions</p> <p>NCETM Spine: <b>3.1, 3.2</b></p>	<p><b>Statistics: Present, interpret, mentally calculate in context of tables and bar charts</b></p> <ul style="list-style-type: none"> <li>• Interpret and present data using bar charts and tables.</li> <li>• Solve one-step and two-step questions (for example, 'How many more?' and 'How many fewer?' using information presented in scaled bar charts and tables.</li> <li>• Pupils understand and use simple scales (for example, 2, 5, 10 units per cm) in pictograms and bar charts with increasing accuracy.</li> </ul> <p>Continue to interpret data presented in many contexts.</p> <p>WR: Spring – Statistics. WR: Autumn Multiplication &amp; Division NCETM Spine: <b>2.6</b> (revisit for equal groups) <b>2.8 2.7</b></p>	<p><b>2-D shape, measures, mental calculation in context of length</b></p> <ul style="list-style-type: none"> <li>• Draw 2-D shapes and describe them.</li> <li>• Measure, compare, add and subtract: lengths (m/cm/mm).</li> <li>• <i>Understand that perimeter is a measure of distance around the boundary of a shape.</i></li> <li>• Measure the perimeter of simple 2-D shapes.</li> </ul> <p>WR: Summer – Geometry properties of shape.</p> <p>WR: spring Measurement Length and perimeter. Small steps 7,8 NCETM Spine: <b>2.16</b></p>	<p><b>Time</b></p> <ul style="list-style-type: none"> <li>• tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks</li> <li>• estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, am/pm, morning, afternoon, noon and midnight</li> </ul> <p>WR: Summer Time (Small steps 3-6)</p> <p>(Time will be revisited again later in the year concentrating on days, months and years)</p> <p>No White Rose small steps for Roman Numerals. However NCETM have links. <a href="https://www.ncetm.org.uk/self-evaluation/browse/strand/5472">https://www.ncetm.org.uk/self-evaluation/browse/strand/5472</a></p>

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**White Rose Small Steps:** <https://whiterosemaths.com/primary-sols/>

**Mental/Oral Starters** (based on AFL)

- Recall multiplication facts for 2, 3, 4, 5 and 10 times tables and derive associated division facts.
- Partition three-digit numbers in different ways, (e.g.  $325 = 300 + 20 + 5$  but is also  $200 + 125$  etc)
- Find fraction of a number. Half of.... Quarter of... which is more?
- Double any multiple of 50 up to 500.
- Count on and back in 1s, 10s or 100s from any two- or three-digit number.

Spring 1	<p><b>Prior Learning</b></p> <ul style="list-style-type: none"> <li>• Recognise the place value of each digit in a three-digit number.</li> <li>• Count in multiples of 2.5.10</li> </ul>	<p><b>Prior Learning</b></p> <ul style="list-style-type: none"> <li>• Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value.</li> <li>• Addition and subtraction written method</li> </ul>	<p><b>Prior Learning</b></p> <ul style="list-style-type: none"> <li>• Identify and describe the properties of 2-D and 3D shapes, including the number of sides, and line symmetry in a vertical line.</li> </ul>	<p><b>Prior Learning</b></p> <ul style="list-style-type: none"> <li>•</li> </ul>
	<p><b>Place Value Mental addition and Subtraction.</b></p> <ul style="list-style-type: none"> <li>• Find 1, 10 or 100 more or less than a given number.</li> <li>• Identify, represent and estimate numbers using different representations, including the number line.</li> </ul> <p><b>(Recap in preparation for Money strand, see below)</b></p> <ul style="list-style-type: none"> <li>• Add numbers mentally, including: a three-digit number and ones; and tens; and hundreds.</li> <li>• Subtract numbers mentally, including: a three-digit number and ones; a three-digit number and tens a 3-digit number and hundreds.</li> </ul> <p>WR: Autumn Place Value (Small Steps 7-11) NCETM Spine: <a href="#">1.17</a> <a href="#">1.18</a></p>	<p><b>Money Teaching Points - pre cursor to the learning objectives below.</b></p> <p>Identify the value of each digit to one decimal place. Read and write numbers with one decimal place. Compare and order numbers with one decimal place.</p> <p><i>Continue to recognise and use symbols for pounds (£) and pence (p) and understand that the decimal point separates pounds and pence.</i></p> <ul style="list-style-type: none"> <li>• Add and subtract amounts of money to give change, using both £ and p in practical contexts.</li> <li>• Solve problems involving money.</li> </ul> <p>WR: Spring- Money</p>	<p><b>Properties of 2D &amp; 3D Shapes</b></p> <ul style="list-style-type: none"> <li>• Draw 2-D shapes and describe them.</li> <li>• Identify horizontal and vertical lines and Pairs of perpendicular and parallel lines.</li> <li>• Recognise that angles are a property of a shape or a description of a turn.</li> <li>• Recognise 3-D shapes in different orientations and describe them. (To use properties including the number of faces, edges and vertices to describe the shape)</li> <li>• Make 3-D shapes using modelling materials. (cubes, cuboids, prisms, cylinders, pyramids, cones, spheres)</li> </ul> <p>WR: Summer Geometry Properties of shape. (Small steps 2-7) WRH: Summer Geometry Properties of shape. (Small steps 8-9)</p>	<p><b>Angles</b></p> <ul style="list-style-type: none"> <li>• Identify right angles, recognise that two right angles make a half turn, three make three quarters of a turn and four a complete turn.</li> <li>• Identify whether angles are greater than or less than a right angle.</li> </ul>

<b>Mental/Oral Starters</b> (based on AFL)			
<b>Spring 2</b>	<p><b>Prior Learning</b> use the concept and language of angles to describe 'turn' by applying rotations, including in practical contexts</p>	<p><b>Prior Learning</b></p> <ul style="list-style-type: none"> <li>Add and subtract numbers using concrete objects, pictorial representations, and mentally.</li> <li>Applying their increasing knowledge of mental and written methods</li> <li>use appropriate standard units to estimate and measure length/height in any direction (m/cm);</li> </ul> <p>compare and order lengths</p>	<p><b>Prior Learning</b> Learning from autumn 2 and building on this within a range of learning context e.g. maths project.</p>
	<p><b>Geometry: Position and Direction</b></p> <ul style="list-style-type: none"> <li>Use mathematical vocabulary to describe position, direction and movement, including distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise), and movement in a straight line.</li> </ul> <p>WR: Summer Geometry (Small steps 1 Turns and angles)</p>	<p><b>Addition and Subtraction</b></p> <ul style="list-style-type: none"> <li>Add numbers with up to three digits, using formal written method of columnar addition.</li> <li>Subtract numbers with up to three digits, using formal written method of columnar subtraction.</li> </ul> <p>Consolidate skills learnt through problem solving. (Recap)</p> <p><b>Measure: Length</b></p> <ul style="list-style-type: none"> <li>Measure, compare, add and subtract: lengths (m/cm/mm)</li> </ul> <p>Measure Lengths Equivalent lengths M/CM/mm/cm Compare Lengths Add lengths Subtract Lengths.</p> <p>WR: Spring Length (small steps 1-6)</p>	<ul style="list-style-type: none"> <li>Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.</li> <li>Solve problems, including missing number problems.</li> <li>Choose appropriate strategy to solve a calculation.</li> </ul>

**Mental/Oral Starters** (based on AFL)

- Round a 2-digit number to the nearest 10.
- Count on and back in 1s, 10s or 100s from any two- or three-digit number.
- Recognise equivalent fractions.
- Recall addition and subtraction facts for 100 (e.g.  $37+63 = 100$ ,  $63+37=100$ ,  $100-63=37$ ,  $100-37=63$ ).
- Converting lengths cm/m m/cm

Summer 1	Prior Learning	Prior Learning	Prior Learning
	<ul style="list-style-type: none"> <li>• compare and order, mass, volume/capacity and record the results using <math>&gt;</math>, <math>&lt;</math> and <math>=</math></li> <li>• Place value strategies.</li> <li>• Addition and subtraction</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts</li> </ul>	<ul style="list-style-type: none"> <li>• Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10.</li> <li>• Finding half means divide by 2.</li> <li>• Finding a quarter is dividing by 4</li> <li>• Know equivalent fractions <math>3/6</math> is the same as <math>1/2</math>.</li> <li>•</li> </ul>
	Measurement: Mass and Capacity	Multiplication and Division	Number: Fractions
	<ul style="list-style-type: none"> <li>• Measure, compare, add and subtract; mass (kg/g); volume/capacity (l/ml)</li> <li>• Measure Mass</li> <li>• Compare Mass</li> <li>• Add and subtract mass</li> <li>•</li> <li>• Measure capacity</li> <li>• Compare Capacity</li> <li>• Add and Subtract mass</li> </ul> <p style="color: purple;">WR: Spring weight and volume</p>	<ul style="list-style-type: none"> <li>• Write and calculate mathematical statements <b>for multiplication</b> using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods.</li> <li>• Write and calculate mathematical statements <b>for division</b> using the multiplication tables that they know, including for two-digit numbers divided by one-digit numbers, using mental and progressing to formal written methods.</li> </ul> <p style="color: purple;">WR: Spring Multiplication and Division</p>	<ul style="list-style-type: none"> <li>• recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators</li> <li>• Compare and order unit fractions, and fractions with the same denominators.</li> <li>• Recognise and show, using diagrams, equivalent fractions with small denominators.</li> </ul> <p style="color: purple;">WR: Summer Fractions</p> <p style="color: orange;">NCETM Spine: <b>3.3, 3.4</b></p> <p style="font-weight: bold;">Fractions in practical context.</p> <ul style="list-style-type: none"> <li>• Show practically or pictorially that a fraction is one whole number divided by another (for example, can be interpreted as <math>3 \div 4</math>).</li> <li>• Add and subtract fractions with the same denominator within one whole [for example, <math>5/7 + 1/7 = 6/7</math>]</li> <li>• Solve problems that involve all of the above.</li> </ul> <p style="color: red;">NCETM SPINE</p> <p style="color: red; font-weight: bold;">3.4</p> <p>Plan real life scenarios</p>

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**Mental/Oral Starters** (based on AFL)

Summer 2	<p><b>Prior Learning</b></p> <ul style="list-style-type: none"> <li>compare and order numbers from 0 up to 100; use &lt;, &gt; and = signs</li> </ul>	<p><b>Prior Learning</b></p> <p>tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks</p>	<p><b>Prior Learning</b></p> <ul style="list-style-type: none"> <li>Write and calculate mathematical statements for multiplication using the multiplication tables that they know, including for two-digit numbers times one-digit numbers.</li> <li>Write and calculate mathematical statements for division using the multiplication tables that they know,</li> </ul>	<p><b>Prior Learning</b></p> <p>Using the place value grid to set calculations out. Recognise the place value of each digit in a 3-digit number.</p>	<p><b>Prior Learning</b></p> <ul style="list-style-type: none"> <li>Counting in different intervals. (Multiples of 2,5 and 10) Difference equals takeaway.</li> </ul>
	<p><b>Number and Place Value</b></p> <ul style="list-style-type: none"> <li>To count from 0 in multiples of 4, 8, 50 and 100;</li> <li>Find the effects of multiplying a one digit or two-digit number by 10 and 100, identify the value of the digits in the answer.</li> <li>To solve number problems and practical problems involving these ideas.</li> </ul> <p>WRH Autumn (Small steps 12)</p> <p>NCTEM SPINE :<a href="#">1.18</a></p>	<p><b>Addition and Subtraction</b></p> <p>*To add and subtract with numbers up to 3 digits using the formal written method.</p> <p>*To solve problems, including missing number problems, using number facts, place value, more complex addition and subtraction.</p> <p>Plan real life scenarios. Budgets? Nrich problems</p>	<p><b>Multiplication and Division: Scaling</b></p> <p><b>Practice and consolidate written formal methods and mental methods.</b></p> <ul style="list-style-type: none"> <li>Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.</li> </ul> <p>NCTEM SPINE <b>2.7 – 2.9</b> Spotting patterns in times tables Nrich problems</p>	<p><b>Time</b></p> <p>Know the number of seconds in a minute and the number of days in each month, year and leap year. Compare durations of events [for example to calculate the time taken by particular events or tasks].</p> <p>WRH Summer Time (Small steps 1,2, 7,8,9,10)</p> <p><b>Statistics</b></p> <p>To interpret and present data using bar charts, pictograms and tables.</p> <ul style="list-style-type: none"> <li>To solve one-step and two-step questions such as 'How many more?' and 'How many fewer?' using information presented in scaled bar charts and pictograms and tables.</li> </ul> <p><b>(Reading Time-Tables)</b></p> <p>Plan real life scenario collect data Analyse results Present data.</p>	

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