



# St Mary's Catholic Primary School

Curriculum Mapping – Y6 (National Curriculum Objectives)

WhiteRose Small Steps

NCETM and DfE Ready-to-progress Criteria)

AUTUMN TERM

SPRING TERM

**SUMMER TERM**

Number: Place Value	Number: Addition, Subtraction, Multiplication and Division	Number: Fractions A	Number: Fractions 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.</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 the above.</li> <li><b>Understand the relationship between powers of 10 from 1 hundredth to 10 million, and use this to make a given number 10, 100, 1,000, 1 tenth, 1 hundredth or 1 thousandth times the size (multiply and divide by 10, 100 and 1,000).</b></li> <li><b>Recognise the place value of each digit in numbers up to 10 million, including decimal fractions, and compose and decompose numbers up to 10 million using standard and non-standard partitioning.</b></li> <li><b>Reason about the location of any number up to 10 million, including decimal fractions, in the linear number system, and round numbers, as appropriate, including in contexts.</b></li> <li><b>Divide powers of 10, from 1 hundredth to 10 million, into 2, 4, 5 and 10 equal parts, and read scales/number lines with labelled intervals divided into 2, 4, 5 and 10 equal parts.</b></li> </ul> <ol style="list-style-type: none"> <li>Numbers to 1,000,000</li> <li>Numbers to 10,000,000</li> <li>Read and write numbers to 10,000,000</li> <li>Powers of 10</li> <li>Number lines to 10,000,000</li> <li>Compare and order any integers</li> <li>Round any integer</li> <li>Negative numbers</li> </ol>	<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.</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> <li>Identify common factors, common multiples and prime numbers.</li> <li>Multiply multi-digit numbers up to four digits by a 2-digit whole number using the formal written method of long multiplication.</li> <li>Perform mental calculations, including with mixed operations and large numbers.</li> <li>Divide numbers up to four digits by 1- or 2-digit numbers using the formal written method of short division where appropriate, interpreting remainders according to the context.</li> <li>Divide numbers up to four digits by a 2-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>Use their knowledge of the order of operations to carry out calculations involving the four operations.</li> <li>Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.</li> <li><b>Understand that 2 numbers can be related additively or multiplicatively, and quantify additive and multiplicative relationships (multiplicative relationships restricted to multiplication by a whole number).</b></li> <li><b>Use a given additive or multiplicative calculation to derive or complete a related calculation, using arithmetic properties, inverse relationships, and place-value understanding.</b></li> </ul> <ol style="list-style-type: none"> <li>Add and subtract integers</li> <li>Common factors</li> </ol>	<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>Identify common factors, common multiples and prime numbers.</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><b>Reason about the location of any number up to 10 million, including decimal fractions, in the linear number system, and round numbers, as appropriate, including in contexts.</b></li> <li><b>Divide powers of 10, from 1 hundredth to 10 million, into 2, 4, 5 and 10 equal parts, and read scales/number lines with labelled intervals divided into 2, 4, 5 and 10 equal parts.</b></li> <li><b>Understand that 2 numbers can be related additively or multiplicatively, and quantify additive and multiplicative relationships (multiplicative relationships restricted to multiplication by a whole number).</b></li> <li><b>Recognise when fractions can be simplified, and use common factors to simplify fractions.</b></li> <li><b>Express fractions in a common denomination and use this to compare fractions that are similar in value.</b></li> <li><b>Compare fractions with different denominators, including fractions greater than 1, using reasoning, and choose between reasoning and common denomination as a comparison strategy.</b></li> </ul> <ol style="list-style-type: none"> <li>Equivalent fractions and simplifying</li> <li>Equivalent fractions on a number line</li> <li>Compare and order denominator</li> <li>Compare and order numerator</li> </ol>	<ul style="list-style-type: none"> <li>Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams (Y5).</li> <li>Multiply simple pairs of proper fractions, writing the answer in its simplest form.</li> <li>Divide proper fractions by whole numbers.</li> <li>Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.</li> <li>Solve problems involving addition, subtraction, multiplication and division.</li> <li>Associate a fraction with division and calculate decimal fraction equivalents.</li> <li>Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams (Y5).</li> <li><b>Understand that 2 numbers can be related additively or multiplicatively, and quantify additive and multiplicative relationships (multiplicative relationships restricted to multiplication by a whole number).</b></li> <li><b>Recognise when fractions can be simplified, and use common factors to simplify fractions.</b></li> <li><b>Express fractions in a common denomination and use this to compare fractions that are similar in value.</b></li> </ul> <ol style="list-style-type: none"> <li>Fraction of an amount</li> <li>Fraction of an amount – find the whole</li> <li>Multiply fractions by integers</li> <li>Multiply mixed numbers by integers</li> <li>Multiply fractions by fractions</li> <li>Divide a fraction by an integer</li> <li>Mixed questions with fractions</li> </ol>



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	3. Common multiples 4. Rules of divisibility 5. Primes to 100 6. Square and cube numbers 7. Multiply up to a 4-digit number by a 2-digit number 8. Solve problems with multiplication 9. Short division 10. Division using factors 11. Introduction to long division 12. Long division with remainders 13. Solve problems with division 14. Solve multi-step problems 15. Order of operations 16. Mental calculations and estimation 17. Reason from known facts	5. Add and subtract simple fractions 6. Add and subtract any two fractions 7. Add mixed numbers 8. Subtract mixed numbers 9. Multi-step problems	
<b>Number: Decimals</b>	<b>Number: Fractions, Decimals and Percentages</b>	<b>Measurement: Converting Units</b>	<b>Number: Ratio</b>
<ul style="list-style-type: none"> <li>• Identify the value of each digit in numbers given to 3 decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers up to 3 decimal places.</li> <li>• Solve problems which require answers to be rounded to specified degrees of accuracy.</li> <li>• Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.</li> <li>• Multiply 1-digit numbers with up to 2 decimal places by whole numbers.</li> <li>• Use written division methods in cases where the answer has up to 2 decimal places.</li> <li>• Solve problems involving addition, subtraction, multiplication and division.</li> <li>• <b>Understand the relationship between powers of 10 from 1 hundredth to 10 million, and use this to make a given number 10, 100, 1,000, 1 tenth, 1 hundredth or 1 thousandth times the size (multiply and divide by 10, 100 and 1,000).</b></li> <li>• <b>Recognise the place value of each digit in numbers up to 10 million, including decimal fractions, and compose and decompose numbers up to 10 million using standard and non-standard partitioning.</b></li> <li>• <b>Reason about the location of any number up to 10 million, including decimal fractions, in the linear number system, and round numbers, as appropriate, including in contexts.</b></li> </ul>	<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>• Associate a fraction with division and calculate decimal fraction equivalents for a simple fraction.</li> <li>• Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.</li> <li>• Compare and order fractions, including fractions &gt;1</li> <li>• Solve problems involving the calculation of percentages and the use of percentages for comparison.</li> <li>• <b>Recognise when fractions can be simplified, and use common factors to simplify fractions.</b></li> <li>• <b>Express fractions in a common denomination and use this to compare fractions that are similar in value.</b></li> </ul> <ol style="list-style-type: none"> <li>1. Decimal and fraction equivalents</li> <li>2. Fractions as division</li> <li>3. Understand percentages</li> <li>4. Fractions to percentages</li> <li>5. Equivalent fractions, decimals and percentages</li> <li>6. Order fractions, decimals and percentages</li> <li>7. Percentage of an amount – one step</li> <li>8. Percentage of an amount – multi step</li> <li>9. Percentages – missing values</li> </ol>	<ul style="list-style-type: none"> <li>• Solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 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 3 decimal places.</li> <li>• <b>Divide powers of 10, from 1 hundredth to 10 million, into 2, 4, 5 and 10 equal parts, and read scales/number lines with labelled intervals divided into 2, 4, 5 and 10 equal parts.</b></li> </ul> <ol style="list-style-type: none"> <li>1. Metric measures</li> <li>2. Convert metric measures</li> <li>3. Calculate with metric measures</li> <li>4. Miles and kilometres</li> <li>5. Imperial measures</li> </ol>	<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 unequal sharing and grouping using knowledge of fractions and multiples.</li> <li>• Solve problems involving similar shapes where the scale factor is known or can be found.</li> <li>• <b>Solve problems involving ratio relationships.</b></li> </ul> <ol style="list-style-type: none"> <li>1. Add or multiply?</li> <li>2. Use ratio language</li> <li>3. Introduction to the ratio symbol</li> <li>4. Ratio and fractions</li> <li>5. Scale drawing</li> <li>6. Use scale factors</li> <li>7. Similar shapes</li> <li>8. Ratio problems</li> <li>9. Proportion problems</li> <li>10. Recipe problems (scaling amounts)</li> </ol>



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<ol style="list-style-type: none"> <li>1. Place value within 1</li> <li>2. Place value – integers and decimals</li> <li>3. Round decimals</li> <li>4. Add and subtract decimals</li> <li>5. Multiply by 10, 100 and 1,000</li> <li>6. Divide by 10, 100 and 1,000</li> <li>7. Multiply decimals by integers</li> <li>8. Divide decimals by integers</li> <li>9. Multiply and divide decimals in context</li> </ol>			
Number: Algebra	Geometry: Shape	Measurement: Area, Perimeter and Volume	Statistics
<ul style="list-style-type: none"> <li>• Use simple formulae.</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> <li>• Express missing number problems algebraically.</li> <li>• <b>Solve problems with 2 unknowns.</b></li> </ul> <ol style="list-style-type: none"> <li>1. 1-step function machines</li> <li>2. 2-step function machines</li> <li>3. Form expressions</li> <li>4. Substitution</li> <li>5. Formulae</li> <li>6. Form equations</li> <li>7. Solve 1-step equations</li> <li>8. Solve 2-step equations</li> <li>9. Find pairs of values</li> <li>10. Solve problems with two unknowns</li> </ol>	<ul style="list-style-type: none"> <li>• Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.</li> <li>• Draw given angles, and measure them in degrees (<math>^{\circ}</math>) (Y5).</li> <li>• Know angles are measured in degrees: estimate and compare acute, obtuse, and reflex angles (Y5).</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 is twice the radius.</li> <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>• <b>Draw, compose, and decompose shapes according to given properties, including dimensions, angles and area, and solve related problems.</b></li> </ul> <ol style="list-style-type: none"> <li>1. Measure, draw and classify angles</li> <li>2. Calculate angles</li> <li>3. Vertically opposite angles</li> <li>4. Angles in a triangle</li> <li>5. Angles in a triangle – special cases</li> <li>6. Angles in a triangle – missing angles</li> <li>7. Angles in a quadrilateral</li> <li>8. Angles in polygons</li> <li>9. Circles</li> <li>10. Draw shapes accurately</li> <li>11. Nets of 3-D shapes</li> </ol>	<ul style="list-style-type: none"> <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.</li> </ul> <ol style="list-style-type: none"> <li>1. Shapes - same area</li> <li>2. Area and perimeter</li> <li>3. Area of a parallelogram</li> <li>4. Area of a triangle – counting squares</li> <li>5. Area of a right-angled triangle</li> <li>6. Area of any triangle</li> <li>7. Volume – counting cubes</li> <li>8. Volume of a cuboid</li> </ol>	<ul style="list-style-type: none"> <li>• Interpret and construct pie charts and line graphs and use these to solve problems.</li> <li>• Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs (Y4).</li> <li>• Calculate and interpret the mean as an average.</li> <li>• <b>Draw, compose, and decompose shapes according to given properties, including dimensions, angles and area, and solve related problems.</b></li> </ul> <ol style="list-style-type: none"> <li>1. Line graphs</li> <li>2. Dual bar charts</li> <li>3. Read and interpret pie charts</li> <li>4. Pie charts with percentages</li> <li>5. Draw pie charts</li> <li>6. The mean</li> </ol>
<b>Geometry: Position and Direction</b>			



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- **Describe positions on the full coordinate grid (all four quadrants).**
  - **Draw and translate simple shapes on the coordinate plane and reflect them in the axes.**
1. The first quadrant
  2. Read and plot points in four quadrants
  3. Solve problems with coordinates
  4. Translations
  5. Reflections