

**St. Patrick’s RC Primary School**

**Mathematics Year 5 – Yearly Overview**

At St. Patrick’s Catholic Primary School, we follow White Rose overviews and small steps to structure our mathematics curriculum. The children are taught a 45minute mathematics lesson and a separate 15-minute number sense lesson focusing on fluency of arithmetic skills.

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| Term | Week 1 | Week 2 | Week 3 | | Week 4 | Week 5 | | Week 6 | Week 7 | Week 8 | Week 9 | Week 10 | Week 11 | | Week 12 |
| Autumn | Place Value | | | Addition and Subtraction | | | Multiplication and Division | | | | Fractions A | | | | |
| Spring | Multiplication and Division | | | | Fractions B | | | Decimals and Percentages | | | Measurement: Perimeter and Area | | Statistics | | |
| Summer | Geometry: Shape | | | | Geometry: Position and direction | | | Decimals | | | Negative numbers | Measurement: Converting Units | | Measurement: Volume | |

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|  | **Week 1 - 3**  **BLOCK 1** | **Week 4-5**  **BLOCK 2** | **Week 6-8**  **BLOCK 3** | **Week 9-12**  **BLOCK 4** | **Week 13 and 14** |
| **Number: Place Value** | **Number: Addition and Subtraction** | **Number: Multiplication and Division** | **Number: Fractions A** | **Consolidation** |
| **White Rose Maths Small Steps** | * Roman numerals to 1,000 * Numbers to 10,000 * Numbers to 100,000 * Numbers to 1,000,000 * Read and write numbers to 1,000,000 * Powers to 10 * 10/100/1,000/10,000/100,000 more or less * Partition numbers to 1,000,000 * Number line to 1,000,000 * Compare and order numbers to 100,000 * Compare and order numbers to 1,000,000 * Round to the nearest 10,100 or 1,000 * Round within 100,000 * Round within 1,000,000 | * Mental strategies * Add whole numbers with more than four digits * Subtract whole numbers with more than four digits * Round to check answers * Inverse operations (addition and subtraction) * Multi-step addition and subtraction problems * Compare calculations * Find missing numbers | * Multiples. * Common multiples * Factors. * Common factors. * Prime numbers. * Square numbers. * Cube numbers. * Multiplying by 10, 100 and 1000. * Dividing by 10, 100 and 1000. * Multiples of 10, 100 and 1000. | * Find fractions equivalent to a unit fraction * Find fractions equivalent to a non-unit fraction * Recognise equivalent fractions * Convert improper fractions to mixed numbers * Convert mixed numbers to improper fractions * Compare fractions less than 1 * Order fractions less than 1 * Compare and order fractions greater than 1 * Add and subtract fractions with the same denominator * Add fractions within 1 * Add fractions with total greater than 1 * Add to a mixed number * Add two mixed numbers * Subtract fractions * Subtract from a mixed number * Subtract from a mixed number – breaking the whole * Subtract two mixed numbers | All |
| **National Curriculum Link** | * Read, write, order and compare numbers to at least 1000000 and determine the value of each digit. * Count forwards or backwards in steps of powers of 10 for any given number up to 1000000. * Round any number up to 1000000 to the nearest 10, 100, 1000, 10000 and 100000. * Solve number problems and practical problems that involve all of the above. * Read Roman numerals to 1000   (M) and recognise years written in Roman numerals. | * Add and subtract numbers mentally with increasingly large numbers. * Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction). * Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. * Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. | * Identify multiples and factors, including finding all factor pairs of a number, and common factors of 2 numbers. * Know and use the vocabulary of prime numbers, prime   factors and composite (non-prime) numbers.   * Establish whether a number up to 100 is prime and recall prime numbers up to 19. * 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. * Multiply and divide numbers mentally, drawing upon known facts. * 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. * Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000. * Recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³). * Solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes. * Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign. * Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates. | * Compare and order fractions whose denominators are multiples of the same number. * Identify, name and write equivalent fractions of a given fraction, represented visually including tenths and hundredths. * Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements   >1 as a mixed number [for example ⅖ + ⅘ = ⁶⁄₅ = 1⅕].   * Add and subtract fractions with the same denominator and denominators that are multiples of the same number. * Multiply proper fractions and mixed numbers by whole   numbers, supported by materials and diagrams.   * Read and write decimal numbers as fractions [ for example 0.71   = ⁷¹/₁₀₀ ].  Solve problems involving multiplication and division, including scaling by simple fractions and problems | All |

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|  | **Week 1 - 3**  **BLOCK 1** | **Week 4 - 5**  **BLOCK 2** | **Week 6-8**  **BLOCK 3** | **Week 9-10**  **Block 4** | **Week 11-12**  **Block 5** |
| **Number: Multiplication and Division** | **Number: Fractions B** | **Number: Decimals and Percentages** | Measurement: Perimeter and Area | Statistics |
| **White Rose Maths Small Steps** | * Multiply 4-digits by 1-digit. * Multiply 2-digits (area model). * Multiply 2-digits by 2-digits. * Multiply 3-digits by 2-digits. * Multiply 4-digits by 2-digits. * Divide 4-digits by 1-digit. * Divide with remainders. | * Multiply unit fractions by an integer. * Multiply non-unit fractions by an integer. * Multiply mixed numbers by integers. * Fraction of an amount. * Using fractions as operators. | * Decimals up to 2 d.p. * Decimals as fractions (1). * Decimals as fractions (2). * Understand thousandths. * Thousands as decimals. * Rounding decimals. * Order and compare decimals. * Understand percentages. * Percentages as fractions and decimals. * Equivalent F.D.P. | * Perimeter on a grid * Perimeter of rectangles * Perimeter of rectilinear shapes * Counting squares * Measure perimeter. * Calculate perimeter. * Area of rectangles. * Area of compound shapes.   Area of irregular shapes. | * Interpret charts * Comparison, sum and difference * Introduce line graphs * Read and interpret line graphs. * Draw line graphs. * Use line graphs to solve problems. * Read and interpret tables. * Two way tables.   Timetables. |
| **National Curriculum Link** | * Multiply and divide numbers mentally drawing upon known facts. * Multiply numbers up to 4 digits by a one or two digit number using a formal written method, including long multiplication for 2 digit numbers. * 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. * Solve problems involving addition and subtraction, multiplication and division and a combination of these, including understanding the use of the equals sign. | * Compare and order fractions whose denominators are multiples of the same number. * Identify, name and write equivalent fractions of a given fraction, represented visually including tenths and hundredths. * Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements   >1 as a mixed number [for example ⅖ + ⅘ = ⁶⁄₅ = 1⅕].   * Add and subtract fractions with the same denominator and denominators that are multiples of the same number. * Multiply proper fractions and mixed numbers by whole   numbers, supported by materials and diagrams.   * Read and write decimal numbers as fractions [ for example 0.71   = ⁷¹/₁₀₀ ].   * Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates. | * Read, write, order and compare numbers with up to three decimal places. * Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. * Round decimals with two decimal places to the nearest whole number and to one decimal place. * Solve problems involving number up to three decimal places. * 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. * Solve problems which require knowing percentage and decimal equivalents of ½, ¼, ⅕, ⅖, ⅘ and those fractions with a denominator of a multiple of 10 or 25. | * Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres. * Calculate and compare the area of rectangles (including squares), including using standard units, square centimetres (cm²) and square metres (m²), and estimate the area of irregular shapes. | * Solve comparison, sum and difference problems using information presented in a line graph. * Complete, read and interpret information in tables including timetables. |

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| **Geometry: Properties of Shape** | **Geometry: Position and Direction** | **Number: Decimals** | **Number: Negative numbers** | **Measurements: Converting Units** | **Measurement: Volume** |
| **White Rose Maths Small Steps** | * Measuring angles in degrees. * Measuring with a protractor (1). * Measuring with a protractor (2). * Drawing lines and angles accurately. * Calculating angles on a straight line. * Calculating angles around a point. * Calculating lengths and angles in shapes. * Regular and irregular polygons. * Reasoning about 3D shapes. | * Position in the first quadrant. * Reflection. * Reflection with coordinates. * Translation. * Translation with coordinates. | * Adding decimals within 1. * Subtracting decimals within 1. * Complements to 1. * Adding decimals – crossing the whole. * Adding decimals with the same number of decimal places. * Subtracting decimals with the same number of decimal places. * Adding decimals with a different number of decimal places. * Subtracting decimals with a different number of decimal places. * Adding and subtracting whole and decimals. * Decimal sequences. * Multiplying decimals by 10, 100 and 1000. * Dividing decimals by 10, 100 and 1,000. | * Negative numbers (awaiting new small steps) | * Kilograms and   kilometres.   * Milligrams and millilitres. * Metric units. * Imperial units. * Converting units of time. * Timetables. | * What is volume? * Compare volume. * Estimate volume. * Estimate capacity. |
| **National Curriculum Link** | * Identify 3D shapes, including cubes and other cuboids, from 2D representations. * Use the properties of rectangles to deduce related facts and find missing lengths and angles. * Distinguish between regular and irregular polygons based on reasoning about equal sides and angles. * Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles. * Draw given angles, and measure them in degrees. * Identify: angles at a point and one whole turn (total 360°), angles at a point on a straight line and ½ a turn (total 180°) other multiples of 90°. | * 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. | * Solve problems involving number up to three decimal places. * Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. * Use all four operations to solve problems involving measure [ for example, length, mass, volume, money] using decimal notation, including scaling. | * Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers including through zero. | * Convert between different units of metric measure [for example, km and m; cm and m; cm and mm; g and kg; l and ml]. * Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints. * Solve problems involving converting between units of time. | * Estimate volume [for example using 1cm3 blocks to build cuboids * (including cubes)] and capacity [for * example, using water]. * Use all four operations to solve problems involving measure. |