

**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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|  | **Week 1 - 3****BLOCK 1** | **Week 4-5****BLOCK 2** | **Week 6-8****BLOCK 3** | **Week 9****Block 5** | **Week 10-11****BLOCK 5** | **Week 12****BLOCK 5** |
| **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.
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| **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.
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