**St. Patrick’s Catholic Primary School**

**Mathematics Year 6 – 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, Subtraction, Multiplication and Division | | | | | | | | Fractions A | | | | Fractions B | | | Measurement: Converting Units |
| Spring | Ratio | | Algebra | | | | Decimals | | Fractions, decimals and percentages | | | | | Measurement: Area, perimeter and Volume | | | Statistics | |
| Summer | Geometry: Shape | | | | Geometry: Position and direction | | Themed projects, consolidation and problem solving | | | | | | | | | | | |

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|  | **Week 1 - 2**  **BLOCK 1** | **Week 3 - 7**  **BLOCK 2** | **Week 8-9**  **BLOCK 3** | **Week 10-11**  **BLOCK 4** | **Week 12**  **BLOCK 5** |
| **Number: Place Value** | **Number: Addition, Subtraction, Multiplication and Division** | **Number: Fractions A** | **Number: Fractions B** | **Measurement:**  **Converting Units** |
| **White Rose Maths Small Steps** | * Numbers to 1,000,000 * Numbers to 10,000,000 * Read and write numbers to 10,000,000 * Powers of 10 * Number line to 10,000,000 * Compare and order any integers * Round any integer * Negative numbers | * Add and subtract integers * Common factors * Common multiples * Rules of divisibility * Primes to 100 * Square and cube numbers * Multiply up to a 4-digit number by a 2-digit number * Solve problems with multiplication * Short division * Division using factors * Introduction to long division * Long division with remainders * Solve problems with division * Solve multi-step problems * Order of operations * Mental calculations and estimation * Reason from known facts | * Equivalent fractions and simplifying * Equivalent fractions on a number line * Compare and order (denominator) * Compare and order (numerator) * Add and subtract simple fractions * Add and subtract any two fractions * Add mixed numbers * Subtract mixed number * Multi-step problems | * Multiply fractions by integers * Multiply fractions by fractions * Divide a fraction by an integer * Divide any fraction by an integer * Mixed questions with fractions * Fraction of an amount * Fraction of an amount – find the whole * Metric measures * Convert metric measures * Calculate with metric measures * Miles and kilometres * Imperial measures | * Metric measures. * Convert metric measures. * Calculate with metric measures. * Miles and kilometres. * Imperial measures. |
| **National Curriculum Link** | * Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit. * Round any whole number to a * required degree of accuracy. * Use negative numbers in * context, and calculate intervals * across zero. * Solve number and practical * problems that involve all of the * above. | * Solve addition and subtraction multi step problems in contexts, deciding which operations and methods to use and why. * Multiply multi-digit number up to 4 digits by a 2-digit number using the formal written method of long multiplication. * Divide numbers up to 4 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. * Divide numbers up to 4 digits by a 2-digit number using the formal written method of short division, interpreting remainders according to the context. * Perform mental calculations, including with mixed operations and large numbers. * Identify common factors, common multiples and prime numbers. * Use their knowledge of the order of operations to carry out calculations involving the four operations. * Solve problems involving addition, subtraction, multiplication and division. * Use estimation to check answers to calculations and determine in   the context of a problem, an appropriate degree of accuracy. | * Use common factors to simplify fractions; use common multiples to express fractions in the same denomination. * Compare and order fractions, including fractions >1. * Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions. * Multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. 1/4 × 1/2 = 1/8). * Divide proper fractions by whole numbers (e.g. 1/3 ÷ 2 = 1/6 ). * Associate a fraction with division to calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3/8). * Identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places. * Multiply one digit numbers with up to two decimal places by whole numbers. * Use written division methods in cases where the answer has up to two decimal places. * Solve problems which require answers to be rounded to specified degrees of accuracy. * Recall and use equivalences between simple fractions, decimals * and percentages, including in different contexts. | | * Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate. * 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 d.p. * Convert between miles and kilometres. |

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|  | **Week 1 - 2**  **BLOCK 1** | **Week 3 - 4**  **BLOCK 2** | **Week 5 - 6**  **BLOCK 3** | **Week 7-8**  **BLOCK 4** | **Week 9-10**  **BLOCK 5** | **Week 11-12**  **BLOCK 6** |
| **Number: Ratio** | **Number:**  **Algebra** | **Number: Decimals** | **Number: Fractions, decimals and percentages** | **Measurement: Perimeter, Area and Volume** | **Statistics** |
| **White Rose Maths Small Steps** | * Use ratio language. * Ratio and fractions. * Introducing the ratio symbol. * Calculating ratio. * Using scale factors. * Calculating scale   factors.   * Ratio and proportion problems. | * Find a rule – one step. * Find a rule – two step. * Use an algebraic rule. * Substitution. * Formulae. * Word problems. * Solve simple one step equations. * Solve two step equations. * Find pairs of values. * Enumerate possibilities. | * Three decimal places. * Multiply by 10, 100 and 1,000. * Divide by 10, 100 and 1,000. * Multiply decimals by integers. * Divide decimals by   integers.   * Division to solve problems. * Decimals as fractions. * Fractions to decimals (1). * Fractions to decimals | * Fractions to percentages. * Equivalent FDP. * Percentage of an amount (1). * Percentage of an amount (2). * Percentages –   missing values.   * Percentage increase and decrease.   Order FDP. | * Shapes – same area. * Area and perimeter. * Area of a triangle (1). * Area of a triangle (2). * Area of a triangle (3). * Area of a parallelogram. * Volume – counting   cubes.   * Volume of a cuboid. | * Read and interpret line graphs. * Draw line graphs. * Use line graphs to solve problems. * Circles. * Read and interpret pie charts. * Pie charts with percentages. * Draw pie charts. * The mean. |
| **National Curriculum Link** | * Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts. * Solve problems involving similar shapes where the scale factor is known or can be found. * Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. | * Use simple formulae. * Generate and describe linear number sequences. * Express missing number problems algebraically. * Find pairs of numbers that satisfy an equation with two unknowns. * Enumerate possibilities of * combinations of two variables. | * Identify the value of each digit in numbers given to 3 decimal places and multiply numbers by 10, 100 and 1,000 giving answers up to 3 decimal places. * Multiply one-digit numbers with up to 2 decimal places by whole numbers. * Use written division methods in cases where the answer has up to 2 decimal places. * Solve problems which require answers to be rounded to specified degrees of accuracy. | * Solve problems involving the calculation of percentages [for example, of measures and such as 15% of 360] and the use of percentages for comparison.   Recall and use equivalences between simple fractions, decimals and percentages including in different contexts. | * Recognise that shapes with the same areas can have different perimeters and vice versa. * Recognise when it is possible to use formulae for area and volume of shapes. * Calculate the area of parallelograms and triangles. * Calculate, estimate and compare volume of cubes and cuboids using standard units, including cm3, m3 and extending to other units (mm3, km3). | * Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius. * Interpret and construct pie charts and line graphs and use these to solve problems. * Calculate the mean as an average |

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|  | **Week 1 - 2**  **BLOCK 1** | **Week 3 - 5**  **BLOCK 2** | **Week 6 - 7**  **BLOCK 3** | **Week 8 - 11**  **BLOCK 4** | **Week 12** |
| **Geometry: Properties of Shapes** | **Geometry: Position and direction** | **Themed Projects, consolidation and problem solving** | | |
| **White Rose Maths Small Steps** | * Measure with a protractor. * Introduce angles. * Calculate angles. * Vertically opposite angles. * Angles in a triangle. * Angles in a triangle – special cases. * Angles in a triangle – missing angles. * Angles in special quadrilaterals. * Angles in regular polygons. * Draw shapes accurately. * Nets of 3D shapes. | * Coordinates in the first quadrant. * • Coordinate in four quadrants. * • Translations. * • Reflections. | All | | |
| **National Curriculum Link** | * Draw 2-D shapes using given dimensions and angles. * Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals and regular polygons. * Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. | * 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 | All | | |