St. Mary's CE Primary School

Curriculum Map: Overview for Mathematics

Plan: Maths Mastery (Power Maths)

Year: Year 6

Autumn Term			
Unit	**Strands**	**NC Objectives**	**Lesson progression**
1	Number and place value	1. Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit 2. Solve number and practical problems that involve all of the above 3. Round any whole number to a required degree of accuracy 4. Use negative numbers in context, and calculate intervals across zero	1. Numbers to 1,000,000 2. Numbers to 10,000,000 (1) 3. Numbers to 10,000,000 (2) 4. Number line to 10,000,000 5. Comparing and ordering numbers to 10,000,000 6. Rounding numbers 7. Negative numbers
2	Number – addition, subtraction, multiplication and division	1. Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why 2. Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication 3. Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context 4. Divide numbers up to 4 digits by a two-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	1. Problem solving – using written methods of addition and subtraction (1) 2. Problem solving – using written methods of addition and subtraction (2) 3. Multiplying numbers up to 4 digits by a 1-digit number 4. Multiplying numbers up to 4 digits by a 2-digit number 5. Dividing numbers up to 4 digits by a 2-digit number (1) 6. Dividing numbers up to 4 digits by a 2-digit number (2) 7. Dividing numbers up to 4 digits by a 2-digit number (3) 8. Dividing numbers up to 4 digits by a 2-digit number (4) 9. Dividing numbers up to 4 digits by a 2-digit number (5) 10. Dividing numbers up to 4 digits by a 2-digit number (6)

3	Number – addition, subtraction, multiplication and division	1. Identify common factors, common multiples and prime numbers 2. Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) (Year 5) 3. Use their knowledge of the order of operations to carry out calculations involving the four operations 4. Perform mental calculations, including with mixed operations and large numbers 5. Solve problems involving addition, subtraction, multiplication and division	1. Common factors 2. Common multiples 3. Recognising prime numbers up to 100 4. Squares and cubes 5. Order of operations 6. Brackets 7. Mental calculations (1) 8. Mental calculations (2) 9. Reasoning from known facts
4	Number – fractions	1. Use common factors to simplify fractions; use common multiples to express fractions in the same denomination 2. Compare and order fractions, including fractions > 1 3. Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions	1. Simplifying fractions (1) 2. Simplifying fractions (2) 3. Fractions on a number line 4. Comparing and ordering fractions (1) 5. Comparing and ordering fractions (2) 6. Adding and subtracting fractions (1) 7. Adding and subtracting fractions (2) 8. Adding fractions 9. Subtracting fractions 10. Problem solving – adding and subtracting fractions (1) 11. Problem solving – adding and subtracting fractions (2)
5	Number – fractions	1. Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams 2. Multiply simple pairs of proper fractions, writing the answer in its simplest form (for example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$) 3. Divide proper fractions by whole numbers (for example, ⅓ ÷ 2 = 1/6) 4. Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions 5. Use written division methods in cases where the answer has up to two decimal places 6. Use their knowledge of the order of operations to carry out calculations involving the four operations	1. Multiplying a fraction by a whole number 2. Multiplying a fraction by a fraction (1) 3. Multiplying a fraction by a fraction (2) 4. Dividing a fraction by a whole number (1) 5. Dividing a fraction by a whole number (2) 6. Dividing a fraction by a whole number (3) 7. Four rules with fractions 8. Calculating fractions of amounts 9. Problem solving – fractions of amounts
6	Geometry – position and	1. Describe positions on the full coordinate grid (all four	1. Plotting coordinates in the first quadrant

	direction	quadrants) 2. Draw and translate simple shapes on the coordinate plane, and reflect them in the axes	2. Plotting coordinates 3. Plotting translations and reflections 4. Reasoning about shapes with coordinates

Spring Term			
Unit	**Strands**	**NC Objectives**	**Lesson progression**
7	Number – fractions (including **decimals** and percentages)	1. Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places 2. Associate a fraction with division and calculate decimal fraction equivalents [for example, 0375] for a simple fraction [for example, $\frac{3}{8}$] 3. Multiply one-digit numbers with up to two decimal places by whole numbers 4. Use written division methods in cases where the answer has up to two decimal places 5. Solve problems which require answers to be rounded to specified degrees of accuracy	1. Multiplying by 10, 100 and 1,000 2. Dividing by multiples of 10, 100 and 1,000 3. Decimals as fractions 4. Fractions as decimals (1) 5. Fractions as decimals (2) 6. Multiplying decimals (1) 7. Multiplying decimals (2) 8. Dividing decimals (1) 9. Dividing decimals (2)
8	Number – fractions (including decimals and **percentages**)	1. Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts 2. Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison 3. Multiply simple pairs of proper fractions, writing the answer in its simplest form (for example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$) 4. Multiply one-digit numbers with up to two decimal places by whole numbers 5. Compare and order fractions, including fractions > 1 6. Solve problems which require answers to be rounded to specified degrees of accuracy	1. Percentage of (1) 2. Percentage of (2) 3. Percentage of (3) 4. Percentage of (4) 5. Finding missing values 6. Converting fractions to percentages 7. Equivalent fractions, decimals and percentages (1) 8. Equivalent fractions, decimals and percentages (2) 9. Mixed problem solving
9	Algebra	1. Generate and describe linear number sequences 2. Use simple formulae 3. Express missing number problems algebraically 4. Find pairs of numbers that satisfy an equation with two unknowns 5. Enumerate possibilities of combinations of two variables	1. Finding a rule (1) 2. Finding a rule (2) 3. Using a rule (1) 4. Using a rule (2) 5. Using a rule (3) 6. Formulae 7. Solving equations (1)

			8. Solving equations (2) 9. Solving equations (3) 10. Solving equations (4) 11. Solving equations (5)
10	Measurement	1. 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 three decimal places 2. Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate 3. Convert between miles and kilometres	1. Metric measures 2. Converting metric measures 3. Problem solving – metric measures 4. Miles and km 5. Imperial measures
11	Measurement	1. Recognise that shapes with the same areas can have different perimeters and vice versa 2. Recognise when it is possible to use formulae for area and volume of shapes 3. Calculate the area of parallelograms and triangles 4. Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units [for example, mm^3 and km^3]	1. Shapes with the same area 2. Area and perimeter (1) 3. Area and perimeter (2) 4. Area of a parallelogram 5. Area of a triangle (1) 6. Area of a triangle (2) 7. Area of a triangle (3) 8. Problem solving – area 9. Problem solving – perimeter 10. Volume of a cuboid (1) 11. Volume of a cuboid (2)
12	Ratio and proportion	1. Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples 2. Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts 3. Solve problems involving similar shapes where the scale factor is known or can be found	1. Ratio (1) 2. Ratio (2) 3. Ratio (3) 4. Ratio (4) 5. Scale drawings 6. Scale factors 7. Similar shapes 8. Problem solving – ratio and proportion (1) 9. Problem solving – ratio and proportion (2)

Summer Term			
Unit	**Strands**	**NC Objectives**	**Lesson progression**
13	Geometry – properties of shapes	1. Draw 2-D shapes using given dimensions and angles 2. Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons 3. Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles 4. Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius 5. Recognise, describe and build simple 3-D shapes, including making nets 6. Identify 3-D shapes, including cubes and other cuboids, from 2-D representations	1. Measuring with a protractor 2. Drawing shapes accurately 3. Angles in triangles (1) 4. Angles in triangles (2) 5. Angles in triangles (3) 6. Angles in polygons (1) 7. Angles in polygons (2) 8. Vertically opposite angles 9. Equal distance 10. Parts of a circle 11. Nets (1) 12. Nets (2)
14	Problem solving	1. Solve number and practical problems that involve all of the above 2. Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy 3. Solve addition and subtraction multistep problems in contexts, deciding which operations and methods to use and why 4. Solve problems involving addition, subtraction, multiplication and division 5. Use their knowledge of the order of operations to carry out calculations involving the four operations 6. Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts 7. Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples 8. Solve problems involving the relative sizes of two	1. Problem solving – place value 2. Problem solving – negative numbers 3. Problem solving – addition and subtraction 4. Problem solving – four operations (1) 5. Problem solving – four operations (2) 6. Problem solving – fractions 7. Problem solving – decimals 8. Problem solving – percentages 9. Problem solving – ratio and proportion 10. Problem solving – time (1) 11. Problem solving – time (2) 12. Problem solving – position and direction 13. Problem solving – properties of shapes (1) 14. Problem solving – properties of shapes (2)

		quantities where missing values can be found by using integer multiplication and division facts 9. 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 three decimal places 10. Describe positions on the full coordinate grid (all four quadrants) 11. Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles 12. Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons	
15	Statistics	1. Calculate and interpret the mean as an average 2. Interpret and construct pie charts and line graphs and use these to solve problems 3. Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison	1. The mean (1) 2. The mean (2) 3. The mean (3) 4. Introducing pie charts 5. Reading and interpreting pie charts 6. Fractions and pie charts (1) 7. Fractions and pie charts (2) 8. Percentages and pie charts 9. Interpreting line graphs 10. Constructing line graphs