

# St Monica's RC Primary School

## Maths Curriculum Progression and End Points

|                    | End of EYFS  | Year 1   | Year 2   | Year 3  | Year 4  | Year 5  | Year 6  |
|--------------------|--|--|--|---|---|---|---|
| <b>Place Value</b> | <ul style="list-style-type: none"> <li>counts in steps of 1 from 0 to 20 forwards and backwards and then beyond</li> <li>counting in 1's forwards and backwards from any number up to 20 and then beyond recognising the pattern of the counting system.</li> <li>Link the number symbol (numeral) with its cardinal number value.</li> <li>Explore the composition of numbers to 10.</li> <li>Automatically recall number bonds for numbers 0-5 and some to 10.</li> <li>Have a deep understanding of number to 10, including the composition of each number.</li> <li>Subitise (recognise quantities without counting) up to 5.</li> <li>Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.</li> </ul> | <p>Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.</p> <ul style="list-style-type: none"> <li>Count in multiples of twos, fives and tens.</li> <li>Read and write numbers to 100 in numerals.</li> <li>Read and write numbers from 1 to 20 in numerals and words.</li> <li>Begin to recognise the place value of numbers beyond 20 (tens and ones).</li> <li>Identify and represent numbers using objects and pictorial representations including the number line (numbers to at least 30).</li> <li>Use the language of: equal to, more than, less than (fewer), most, least.</li> <li>Given a number, identify one more and one less.</li> <li>Recognise and create repeating patterns with numbers, objects and shapes.</li> <li>Identify odd and even numbers linked to counting in twos from 0 and 1.</li> <li>Solve problems and practical problems involving all of the above.</li> </ul> | <ul style="list-style-type: none"> <li>count in steps of 2, 3, and 5 from any number, forward and backwards</li> <li>recognise the place value of each two-digit number (tens, ones) and estimate numbers using different representations, including the number line</li> <li>compare and order numbers from 1000</li> <li>use and = signs</li> <li>read and write numbers to at least 100 in numerals and in words</li> <li>use place value and number facts to solve problems</li> </ul> | <p>Count from 0 in multiples of 4, 8, 50 and 100.</p> <ul style="list-style-type: none"> <li>Count up and down in tenths.</li> <li>Read and write numbers up to 1000 in numerals and in words.</li> <li>Read and write numbers with one decimal place.</li> <li>Identify, represent and estimate numbers using different representations (including the number line).</li> <li>Recognise the place value of each digit in a three-digit number (hundreds, tens, ones).</li> <li>Identify the value of each digit to one decimal place.</li> <li>Partition numbers in different ways (e.g. <math>146 = 100 + 40 + 6</math> and <math>146 = 130 + 16</math>).</li> <li>Compare and order numbers up to 1000.</li> <li>Compare and order numbers with one decimal place.</li> <li>Find 1, 10 or 100 more or less than a given number.</li> <li>Round numbers to at least 1000 to the nearest 10 or 100.</li> <li>Find the effect of multiplying a one- or two-digit number by 10 and 100, identify the value of the digits in the answer.</li> <li>Describe and extend number sequences involving counting on or back in different steps.</li> <li>Read Roman numerals from I to XII.</li> <li>Solve number problems and practical problems involving these ideas</li> </ul> | <ul style="list-style-type: none"> <li>count in multiples of 6, 7, 9, 25 and 1000</li> <li>find 1000 more or less than a given number</li> <li>count backwards through zero to include negative numbers</li> <li>recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)</li> <li>order and compare numbers beyond 1000</li> <li>identify, represent and estimate numbers using different representations</li> <li>round any number to the nearest 10, 100 or 1000</li> <li>solve number and practical problems that involve all of the above and with increasingly large positive numbers</li> <li>read Roman numerals to 100 (I to C) and understand how, over time, the numeral system changed to include the concept of zero and place value.</li> </ul> | <ul style="list-style-type: none"> <li>Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000.</li> <li>Count forwards and backwards in decimal steps.</li> <li>Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit.</li> <li>Read, write, order and compare numbers with up to 3 decimal places.</li> <li>Identify the value of each digit to three decimal places.</li> <li>Identify represent and estimate numbers using the number line.</li> <li>Find 0.01, 0.1, 1, 10, 100, 1000 and other powers of 10 more or less than a given number.</li> <li>Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000.</li> <li>Round decimals with two decimal places to the nearest whole number and to one decimal place.</li> <li>Multiply/divide whole numbers and decimals by 10, 100 and 1000.</li> <li>Interpret negative numbers in context, count on and back with positive and negative whole numbers, including through zero.</li> <li>Describe and extend number sequences including those with multiplication/division steps and where the step size is a decimal.</li> <li>Read Roman numerals to 1000 (M); recognise years written as such.</li> </ul> | <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 problems and practical problems that involve all of the above.</li> </ul> |

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|   |  |   |   |   |   | <ul style="list-style-type: none"> <li>• Solve number and practical problems that involve all of the above.</li> </ul>  |   |
| <p><b>Addition and Subtraction</b></p>      | <ul style="list-style-type: none"> <li>• compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.</li> </ul> | <p>Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs. □ Represent and use number bonds and related subtraction facts within 20. □ Add and subtract one-digit and two-digit numbers to 20, including zero (using concrete objects and pictorial representations). □ Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as <math>7 = \square - 9</math></p> | <ul style="list-style-type: none"> <li>• solve problems with addition and subtraction using concrete objects and pictorial representations, including those involving numbers, quantities and measures</li> <li>• apply their increasing knowledge of written methods</li> <li>• recall and use addition and subtraction facts fluently, and derive and use related facts</li> <li>• add and subtract numbers using pictorial representations, and mentally, including: <ul style="list-style-type: none"> <li>• a two-digit number and ones</li> <li>• a two-digit number and tens</li> <li>• two two-digit numbers</li> <li>• adding three one-digit numbers</li> </ul> </li> <li>• show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot</li> <li>• recognise and use the inverse relationship between addition and subtraction and use this to check their calculations and solve missing number problems</li> </ul> | <p>Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method).</p> <ul style="list-style-type: none"> <li>• Select a mental strategy appropriate for the numbers involved in the calculation.</li> <li>• Understand and use take away and difference for subtraction, deciding on the most efficient method for the numbers involved, irrespective of context.</li> <li>• Recall/use addition/subtraction facts for 100 (multiples of 5 and 10).</li> <li>• Derive and use addition and subtraction facts for 100.</li> <li>• Derive and use addition and subtraction facts for multiples of 100 totalling 1000.</li> <li>• Add and subtract numbers mentally, including: <ul style="list-style-type: none"> <li>- a three-digit number and ones.</li> <li>- a three-digit number and tens.</li> <li>- a three-digit number and hundreds.</li> </ul> </li> <li>• Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction.</li> <li>• Estimate the answer to a calculation and use inverse operations to check answers.</li> <li>• Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.</li> </ul> | <ul style="list-style-type: none"> <li>• add and subtract numbers with up to 4 digits using the efficient written methods of columnar addition and subtraction where appropriate</li> <li>• estimate and use inverse operations to check answers to a calculation</li> <li>• solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why</li> <li>• perform mental calculations, including with mixed operations and large numbers</li> <li>• identify common factors, common multiples and prime numbers</li> <li>• use their knowledge of the order of operations to carry out calculations involving the four operations</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> </ul> <p>use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.</p> | <ul style="list-style-type: none"> <li>• Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method).</li> <li>• Select a mental strategy appropriate for the numbers involved in the calculation.</li> <li>• Recall and use addition and subtraction facts for 1 and 10 (with decimal numbers to one decimal place).</li> <li>• Derive and use addition and subtraction facts for 1 (with decimal numbers to two decimal places).</li> <li>• Add and subtract numbers mentally with increasingly large numbers and decimals to two decimal places.</li> <li>• Add and subtract whole numbers with more than 4 digits and decimals with two decimal places, including using formal written methods (columnar addition and subtraction).</li> <li>• Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.</li> <li>• Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.</li> <li>• Solve addition and subtraction problems involving missing numbers.</li> </ul> | <ul style="list-style-type: none"> <li>• perform mental calculations, including with mixed operations and large numbers</li> <li>• identify common factors, common multiples and prime numbers</li> <li>• use their knowledge of the order of operations to carry out calculations involving the four operations</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>• use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.</li> </ul> |
| <p><b>Multiplication &amp; Division</b></p> | <ul style="list-style-type: none"> <li>• explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally</li> </ul>   | <p>Recall and use doubles of all numbers to 10 and corresponding halves.</p> <ul style="list-style-type: none"> <li>• Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.</li> </ul>   | <ul style="list-style-type: none"> <li>• recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables</li> <li>• recognise odd and even numbers</li> <li>• calculate mathematical statements involving multiplication and division within the multiplication tables using the multiplication (<math>\times</math>) and division (<math>\div</math>) signs</li> <li>• show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot</li> <li>• solve problems involving multiplication and division, using materials, arrays, repeated</li> </ul>  | <p>Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method).</p> <ul style="list-style-type: none"> <li>• Understand that division is the inverse of multiplication and vice versa.</li> </ul>  | <ul style="list-style-type: none"> <li>• recall multiplication and division facts for multiplication tables up to <math>12 \times 12</math></li> <li>• use place value, known and derived facts to multiply and divide mentally, including: <ul style="list-style-type: none"> <li>• multiplying by 0 and 1; dividing by 1;</li> <li>• multiplying together three numbers</li> </ul> </li> </ul>  | <p>Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method).</p> <ul style="list-style-type: none"> <li>• Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.</li> </ul>   | <ul style="list-style-type: none"> <li>• multiply multi-digit numbers up to 4 digits by a two-digit whole number using the efficient written method of long multiplication</li> <li>• 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,</li> </ul>  |

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|  |   |   | <p>methods, and multiplication and including problems in contexts.</p>  | <ul style="list-style-type: none"> <li>Understand how multiplication and division statements can be represented using arrays.</li> <li>Understand division as sharing and grouping and use each appropriately.</li> <li>Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.</li> <li>Derive and use doubles of all numbers to 100 and corresponding halves.</li> <li>Derive and use doubles of all multiples of 50 to 500.</li> <li>Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods.</li> <li>Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.</li> <li>Solve problems, including missing number problems, involving multiplication and division (and interpreting remainders), including positive integer scaling problems and correspondence problems in which <math>n</math> objects are connected to <math>m</math> objects.</li> </ul> | <ul style="list-style-type: none"> <li>recognise and use factor pairs and commutativity in mental calculations</li> <li>multiply and divide two-digit and three-digit numbers by a one-digit number using formal written layout</li> <li>solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as <math>n</math> objects are connected to <math>m</math> objects</li> </ul> | <ul style="list-style-type: none"> <li>Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.</li> <li>Establish whether a number up to 100 is prime and recall prime numbers up to 19.</li> <li>Recognise and use square (2) and cube (3) numbers, and notation.</li> <li>Use partitioning to double or halve any number, including decimals to two decimal places.</li> <li>Multiply and divide numbers mentally drawing upon known facts.</li> <li>Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes.</li> <li>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.</li> <li>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.</li> <li>Use estimation/inverse to check answers to calculations; determine, in the context of a problem, an appropriate degree of accuracy.</li> <li>Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.</li> <li>Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.</li> </ul> | <p>as appropriate for the context</p> <ul style="list-style-type: none"> <li>divide numbers up to 4 digits whole number using the formal method of short division, and remainders according to the</li> </ul> |
| <p><b>Fractions (including decimals and percentages)</b></p> | <ul style="list-style-type: none"> <li>in practical activities explore halves of whole amounts</li> </ul> | <p>Understand that a fraction can describe part of a whole.</p> <ul style="list-style-type: none"> <li>Understand that a unit fraction represents one equal part of a whole.</li> </ul> | <ul style="list-style-type: none"> <li>recognise, find, name and write <math>\frac{2}{4}</math> and <math>\frac{3}{4}</math> of a length, shape, quantity</li> <li>write simple fractions for example and recognise the equivalence of <math>\frac{2}{4}</math> and <math>\frac{1}{2}</math></li> </ul> | <p>Show practically or pictorially that a fraction is one whole number divided by another (e.g. <math>\frac{3}{4}</math> can be interpreted as <math>3 \div 4</math>).</p>   | <ul style="list-style-type: none"> <li>recognise and show, using diagrams, families of common equivalent fractions</li> <li>count up and down in hundredths; recognise that hundredths arise</li> </ul>  | <p>Recognise mixed numbers and improper fractions and convert from one form to the other.</p>  | <ul style="list-style-type: none"> <li>use common factors to simplify fractions; use common multiples to express fractions in the same denomination</li> </ul>  |

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|                           |  | <ul style="list-style-type: none"> <li>Recognise, find and name a half as one of two equal parts of an object shape or quantity (including measure).</li> <li>Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity (including measure).</li> </ul>   |  | <ul style="list-style-type: none"> <li>Understand that finding a fraction of an amount relates to division.</li> <li>Recognise that tenths arise from dividing objects into 10 equal parts and in dividing one-digit numbers or quantities by 10.</li> <li>Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.</li> <li>Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators.</li> <li>Recognise and show, using diagrams, equivalent fractions with small denominators.</li> <li>Add and subtract fractions with the same denominator within one whole [for example, <math>\frac{1}{4} + \frac{1}{4} = \frac{2}{4}</math>].</li> <li>Compare and order unit fractions, and fractions with the same denominators (including on a number line).</li> <li>Count on and back in steps of <math>\frac{1}{10}</math>, <math>\frac{1}{100}</math> and <math>\frac{1}{1000}</math>.</li> <li>Solve problems that involve all of the above</li> </ul> | <ul style="list-style-type: none"> <li>when dividing an object by a hundred and dividing tenths by ten solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number</li> <li>add and subtract fractions with the same denominator</li> <li>recognise and write decimal equivalents of any number of tenths or hundredths</li> <li>recognise and write decimal equivalents to <math>\frac{1}{4}</math>; <math>\frac{1}{2}</math>; <math>\frac{3}{4}</math></li> <li>find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as units, tenths and hundredths</li> <li>round decimals with one decimal place to the nearest whole number</li> <li>compare numbers with the same number of decimal places up to two decimal places</li> <li>solve simple measure and involving fractions and decimal places.</li> </ul> | <ul style="list-style-type: none"> <li>Read and write decimal numbers as fractions (e.g. <math>0.71 = \frac{71}{100}</math>).</li> <li>Count on and back in mixed number steps such as <math>1\frac{9}{10}</math>.</li> <li>Compare and order fractions whose denominators are all multiples of the same number (including on a number line).</li> <li>Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.</li> <li>Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.</li> <li>Add and subtract fractions with denominators that are the same and that are multiples of the same number (using diagrams).</li> <li>Write statements <math>&gt; 1</math> as a mixed number</li> <li>Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.</li> <li>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.</li> <li>Solve problems involving fractions and decimals to three places.</li> <li>Solve problems which require knowing percentage and decimal equivalents of <math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, <math>\frac{1}{5}</math>, <math>\frac{2}{5}</math> and <math>\frac{4}{5}</math> and fractions with a denominator of a multiple of 10 or 25.</li> </ul> | <ul style="list-style-type: none"> <li>compare and order fractions, including fractions <math>&gt; 1</math></li> <li>associate a fraction with division to calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. <math>\frac{3}{8}</math>)</li> <li>add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions</li> <li>multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. <math>\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}</math>)</li> <li>divide proper fractions by whole numbers (e.g. <math>\frac{1}{3} \div 2 = \frac{1}{6}</math>).</li> <li>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</li> <li>multiply one-digit numbers with up to two decimal places by whole numbers</li> <li>use written division methods in cases where the answer has up to two decimal places</li> <li>solve problems which require answers to be rounded to specified degrees of accuracy.</li> <li>recall and use equivalences between simple fractions, decimals and percentages, including in different contexts and to compare proportions</li> </ul> |
| <p><b>Measurement</b></p> | <ul style="list-style-type: none"> <li>compare length, weight and capacity.</li> </ul> | <p>Measure and begin to record:</p> <ul style="list-style-type: none"> <li>lengths and heights, using non-standard and then manageable standard units (m/cm)</li> <li>mass/weight, using non-standard and then manageable standard units (kg/g)</li> <li>capacity and volume using non-standard and then manageable standard units (litres/ml)</li> <li>time (hours/minutes/seconds)</li> </ul> | <ul style="list-style-type: none"> <li>choose and use appropriate standard units to estimate and measure length/h direction (m/cm); mass (kg/g); capacity (litres/ml) to the nearest unit,</li> <li>using rulers, scales, thermometers and measuring vessels</li> <li>compare and order lengths, mass and volume/capacity and record the results using <math>&gt;</math>, <math>&lt;</math> and <math>=</math></li> <li>recognise and use symbols for pence (p); combine amounts to value</li> <li>find different combinations of coins to make the same amounts of money</li> </ul> | <p>Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).</p> <ul style="list-style-type: none"> <li>Continue to estimate and measure temperature to the nearest degree (<math>^{\circ}\text{C}</math>) using thermometers.</li> <li>Understand perimeter is a measure of distance around the boundary of a shape.</li> <li>Measure the perimeter of simple 2-D shapes.</li> </ul>   | <ul style="list-style-type: none"> <li>convert between different units of measure (e.g. kilometre to metre; hour to minute)</li> <li>measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres</li> <li>find the area of rectilinear shapes by counting squares</li> <li>estimate, compare and calculate different</li> </ul>  | <p>Use, read and write standard units of length and mass.</p> <ul style="list-style-type: none"> <li>Estimate (and calculate) volume ((e.g., using 1 cm<sup>3</sup> blocks to build cuboids (including cubes)) and capacity (e.g. using water).</li> <li>Understand the difference between liquid volume and solid volume.</li> <li>Continue to order temperatures including those below <math>0^{\circ}\text{C}</math>.</li> </ul>   | <ul style="list-style-type: none"> <li>solve problems involving the calculation and conversion of units of measure, using decimal notation to three 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</li> </ul>  |

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|   |  | <p>within children's range of counting competence.</p> <ul style="list-style-type: none"> <li>- Compare, describe and solve practical problems for: <ul style="list-style-type: none"> <li>- lengths and heights (for example, long / short, longer / shorter, tall / short, double / half).</li> <li>- mass/weight (for example, heavy / light, heavier than, lighter than).</li> <li>- capacity and volume (for example, full/empty, more than, less than, half, half full, quarter).</li> <li>- time (for example, quicker, slower, earlier, later).</li> </ul> </li> <li>- Recognise and use language relating to dates, including days of the week, weeks, months and years.</li> <li>- Sequence events in chronological order using language (for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening).</li> <li>- Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.</li> <li>- Recognise and know the value of different denominations of coins and notes.</li> </ul> | <ul style="list-style-type: none"> <li>- solve simple problems in a practical context involving addition and subtraction using the same unit, including giving change</li> <li>- compare and sequence intervals</li> <li>- tell and write the time to five minutes past/to the hour and draw the hands on a clock face to show these times</li> <li>- know the number of minutes in an hour and the number of hours in a day.</li> </ul>             | <ul style="list-style-type: none"> <li>- Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks.</li> <li>- Estimate/read time with increasing accuracy to the nearest minute.</li> <li>- Record/compare time in terms of seconds, minutes, hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon, midnight.</li> <li>- Know the number of seconds in a minute and the number of days in each month, year and leap year.</li> <li>- Compare durations of events [for example to calculate the time taken by particular events or tasks].</li> <li>- Continue to recognise and use the symbols for pounds (£) and pence (p) and understand that the decimal point separates pounds/pence.</li> <li>- Recognise that ten 10p coins equal £1 and that each coin is <math>\frac{1}{10}</math> of £1.</li> <li>- Add and subtract amounts of money to give change, using both £ and p in practical contexts.</li> <li>- Solve problems involving money and measures and simple problems involving passage of time.</li> </ul> | <ul style="list-style-type: none"> <li>- measures, including money in pounds and pence</li> <li>- read, write and convert time between analogue and digital 12 and 24-hour clocks</li> <li>- solve problems involving conversion between hours to minutes; minutes to hours; weeks to days.</li> </ul>  | <ul style="list-style-type: none"> <li>- Convert between different units of metric measure.</li> <li>- Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.</li> <li>- Measure/calculate the perimeter of composite rectilinear shapes.</li> <li>- Calculate and compare the area of rectangle, use standard units square centimetres (cm<sup>2</sup>) and square metres (m<sup>2</sup>) and estimate the area of irregular shapes.</li> <li>- Continue to read, write and convert time between analogue and digital 12 and 24-hour clocks.</li> <li>- Solve problems involving converting between units of time.</li> <li>- Use all four operations to solve problems in</li> </ul> | <ul style="list-style-type: none"> <li>- decimal notation to three decimal places</li> <li>- convert between miles and kilometres</li> <li>- recognise that shapes with the same areas can have different perimeters and vice versa</li> <li>- calculate the area of parallelograms and triangles</li> <li>- recognise when it is necessary to use the formulae for area and volume of shapes</li> <li>- calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm<sup>3</sup>) and cubic metres (m<sup>3</sup>) and extending to other units, such as mm<sup>3</sup> and km<sup>3</sup>.</li> </ul> |
| <p><b>Geometry (Properties of shapes)</b></p>     | <ul style="list-style-type: none"> <li>- Select, rotate and manipulate shapes in order to develop spatial reasoning skills.</li> <li>- Selects a particular named shape.</li> <li>- Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can.</li> </ul> | <p>Recognise and name common 2-D shapes, including rectangles (including squares), circles and triangles.</p> <ul style="list-style-type: none"> <li>- Recognise and name common 3-D shapes, including cuboids (including cubes), pyramids and spheres.</li> </ul>   | <ul style="list-style-type: none"> <li>- identify and describe the properties of shapes, including the number of sides and angles in a vertical line</li> <li>- identify and describe the properties of shapes, including the number of edges, faces</li> <li>- identify 2-D shapes on the surface of a cylinder [for example, a circle on a cylinder, a square on a pyramid]</li> <li>- compare and sort common 2-D and everyday objects</li> </ul> | <p>Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them.</p> <ul style="list-style-type: none"> <li>- Recognise angles as a property of shape or a description of a turn.</li> <li>- Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle.</li> <li>- Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.</li> </ul>   | <ul style="list-style-type: none"> <li>- compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes</li> <li>- identify acute and obtuse angles and compare and order angles up to two right angles by size</li> <li>- identify lines of symmetry in 2-D shapes presented in different orientations</li> <li>- complete a simple symmetric figure with respect to a specific line of symmetry.</li> </ul> | <p>Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.</p> <ul style="list-style-type: none"> <li>- Use the properties of rectangles to deduce related facts and find missing lengths and angles.</li> <li>- Identify 3-D shapes from 2-D representations.</li> <li>- Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles.</li> <li>- Draw given angles, and measure them in degrees (°).</li> <li>- Identify: <ul style="list-style-type: none"> <li>- angles at a point and one whole turn (total 360°).</li> <li>- angles at a point on a straight line and half a turn (total 180°).</li> <li>- other multiples of 90°.</li> </ul> </li> </ul>                     | <ul style="list-style-type: none"> <li>- Draw 2D shapes using given dimensions and angles</li> <li>- recognise, describe and build simple 3-D shapes, including making nets</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</li> <li>- recognise angles where they meet at a point, are on a straight line, and are vertically opposite and find missing angles</li> </ul>  |
| <p><b>Geometry (Position &amp; Direction)</b></p> | <ul style="list-style-type: none"> <li>- continue, copy and creates repeating patterns.</li> <li>- uses everyday language to</li> </ul>  | <p>Describe movement, including whole, half, quarter and</p>   | <ul style="list-style-type: none"> <li>- order and arrange combinations of objects in patterns and sequences</li> <li>- use mathematical vocabulary to</li> </ul>  | <p>Describe positions on a square grid labelled with letters and</p>  | <ul style="list-style-type: none"> <li>- describe positions on a 2-D grid as coordinates in the first quadrant</li> </ul>   | <p>Describe positions on the first quadrant of a coordinate grid.</p>  | <ul style="list-style-type: none"> <li>- describe positions on the full coordinate grid (all four quadrants)</li> </ul>   |

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|                               | talk about position and distance. | three-quarter turns.<br><ul style="list-style-type: none"> <li>Recognise and create repeating patterns with objects and shapes.</li> <li>Describe position and direction</li> </ul>   | direction and movement, including straight line and distinguishing it as a turn and in terms of right angle half and three-quarter turns (clockwise and anticlockwise).   | numbers.  | <ul style="list-style-type: none"> <li>describe movements between positions as translations of a given unit to the left/right and up/down</li> <li>plot specified points and draw sides to complete a given polygon.</li> </ul>   | <ul style="list-style-type: none"> <li>Plot specified points and complete shapes.</li> <li>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.</li> </ul>   | <ul style="list-style-type: none"> <li>draw and translate simple shapes on the coordinate plane, and reflect them in the axes.</li> </ul>  |
| <b>Statistics</b>             |                                   | Sort objects, numbers and shapes to a given criterion and their own.<br><ul style="list-style-type: none"> <li>Present and interpret data in block diagrams using practical equipment.</li> <li>Ask and answer simple questions by counting the number of objects in each category.</li> <li>Ask and answer questions by comparing categorical data.</li> </ul> | <ul style="list-style-type: none"> <li>interpret and construct simple pie charts, block diagrams and simple bar charts</li> <li>ask and answer simple questions about the number of objects in each category</li> <li>ask and answer questions about comparing categorical data.</li> </ul> | Use sorting diagrams to compare and sort objects, numbers and common 2-D and 3-D shapes and everyday objects.<br><ul style="list-style-type: none"> <li>Interpret and present data using bar charts, pictograms and tables.</li> <li>Solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables.</li> </ul> | <ul style="list-style-type: none"> <li>interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs</li> <li>solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.</li> </ul> | Complete and interpret information in a variety of sorting diagrams (including those used to sort properties of numbers and shapes).<br><ul style="list-style-type: none"> <li>Complete, read and interpret information in tables and timetables.</li> <li>Solve comparison, sum and difference problems using information presented in all types of graph including a line graph.</li> <li>Calculate and interpret the mode, median and range.</li> </ul> | <ul style="list-style-type: none"> <li>interpret and construct pie charts and line graphs and use these to solve problems</li> <li>calculate and interpret the mean and average</li> </ul>   |
| <b>Ratio &amp; Proportion</b> |                                   |   |   |   |   |  | <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 the calculation of percentages e.g. of measures and such as 15% of 360 and the use of percentages for comparison</li> <li>solve problems involving similar shapes where the scale factor is known or can be found</li> <li>solve problems involving unequal sharing and grouping using knowledge and multiples</li> </ul> |
| <b>Algebra</b>                |                                   |   |   |   |   |  | <ul style="list-style-type: none"> <li>express missing number problems algebraically</li> <li>use simple formulae expressed in words</li> <li>generate and describe linear number sequences</li> <li>find pairs of numbers that satisfy number sentences involving two unknowns.</li> <li>Enumerate all possibilities of combinations of two variables</li> </ul>  |