

**Oral mental starters (ongoing, throughout the term):**

- Count from (and back to) 0 in multiples of 3, 6, 4, 8, 7, 9, 25, 50, 100
- Recall and use multiplication and division facts for the 2, 3, 4, 5, 6, 7, 8, 9, 10 times tables (up to the 12<sup>th</sup> multiple)
- Find factor pairs of numbers (using known multiples) e.g. 6 and 4 are factor pairs of 24
- Recognise and use inverse operations and commutativity to derive other related facts e.g.  $4 \times 6 = 24$  to calculate  $6 \times 4 = 24$ ;  $24 \div 6 = 4$ ;  $24 \div 4 = 6$
- Use known multiplication and division facts and place value to derive other related facts e.g.  $4 \times 9 = 36$  to calculate  $4 \times 90 = 360$ ;  $40 \times 9 = 360$
- Multiply and divide numbers by 10 (including numbers with one decimal place)
- Compare and order numbers up to 10,000
- Derive addition and subtraction facts for pairs of numbers that total 100 (refer to 100 square)
- Derive addition and subtraction facts for multiples of 50 to 1000 (e.g.  $450 + 550 = 1000$ ,  $1000 - 750 = 250$ )
- Given a number, say/identify the number that is 100 more or less within 1000 (and beyond)
- Given a number, say/identify the number that is 1000 more or less within 10,000
- Find doubles of three-digit numbers (using knowledge of partitioning and place value); find the corresponding halves
- Begin to count backwards through zero to include negative whole numbers (refer to number line)
- Count forwards and backwards using simple fractions going beyond one
- Tell the time to the nearest minute on an analogue clock (including using Roman numerals I-XII) and relate to 12/24 hour digital clocks
- Convert between different units of measurement e.g. cm to m, ml to l, kg to g, minutes to hours, weeks to days

**NB** Also see the **Mental Maths Policy** for further guidance

Areas of Study	No of days	Statutory requirements and non-statutory guidance	Suggested Key Vocabulary
<p><b>Number</b></p> <p>Number and place value</p>	<p>3 - 5</p>	<p>Read and write numbers up to 10,000                      Given a number, say/identify the number that is 100/ 1000 more or less within 10,000                      Order and compare numbers within 10,000                      Round numbers to the nearest 10, 100 or 1000</p> <p>Recognise the place value of each digit in a four-digit number                      Partition four-digit numbers into thousands, hundreds, tens and ones/units; continue to use place value cards and Diennes apparatus to support</p> <p>Partition numbers <b>in different ways</b> (to support understanding of calculation methods) e.g. <math>65 = 60 + 5 = 50 + 15</math>; <math>145 = 100 + 40 + 5 = 100 + 30 + 15</math>; <math>525 = 500 + 20 + 5 = 400 + 120 + 5</math></p>	<p>Partition, Place value                      Digit, number                      Units/ones, Tens, Hundreds, Thousands                      Order                      Compare                      More than, greater than, less than, &lt;, &gt;                      Round</p>

## Medium Term Plans for Mathematics (aligned with the 2014 National Curriculum) - Year Four (Spring Term)



<p><b>Number</b></p> <p>Negative Numbers and Roman Numerals</p>	<p>2</p> <p>3</p>	<p>Count backwards through zero to include positive and <b>negative whole numbers</b></p> <p>Use negative numbers in context e.g. link to temperature (today the temperature is - 2 ° C)</p> <p>Respond to questions about negative numbers e.g. fill in the missing numbers on the number line; put these temperatures in order, from coldest to warmest</p> <p>Consolidate reading and writing <b>Roman numerals</b> to 12 (XII) and relate to analogue clocks</p> <p>Read and write Roman numerals to 100 (C); identify where we see Roman numerals in everyday life e.g. on clocks, on buildings, after the name of a king or queen; know that, over time, the numeral system changed to include the concept of zero and place value</p> <p><b>(Possible link to History topic)</b></p>	<p>Positive, negative (numbers)</p> <p>Temperature</p> <p>Roman numerals</p> <p>I, V, X, L, C</p>
<p><b>Number</b></p> <p>Addition and Subtraction</p>	<p>5</p>	<p><b>Consolidate using the formal written method of addition</b> to add two two-digit numbers; a three-digit number and a two-digit number; two three-digit numbers <b>(See Calculation Policy)</b></p> <p><b>Consolidate using formal written method of subtraction</b> to subtract two two-digit numbers; a two-digit number from a three-digit number; a three-digit number from a three-digit number <b>(See Calculation Policy)</b></p> <p>Solve addition and subtraction one-step and two-step word problems (including money problems), deciding which operations to use e.g. There are 235 girls on the playground and 228 boys. How many children are on the playground altogether? 125 children were called into the classroom. How many children are on the playground now?</p>	<p>Digit</p> <p>Hundreds, tens, ones/units</p> <p>Addition, plus, altogether add, sum of, total, more than, increase</p> <p>Subtraction, subtract, minus, less than, decrease</p> <p>Calculate, calculation</p> <p>Problem, solution</p>
<p><b>Geometry</b></p> <p>Properties of Shape (2D) and Position and Direction</p>	<p>3</p> <p>2</p>	<p>Consolidate names and properties of 2D shapes; sort, compare and classify 2D shapes (including regular/ irregular, acute/obtuse/right angle))</p> <p>Identify lines of symmetry in 2D shapes presented in different orientations; identify lines of symmetry in other images e.g. designs, logos, flags</p> <p>Complete a simple symmetric figure with respect to a specific line of symmetry including where the shape/figure does not touch the line of symmetry</p> <p>Describe positions on a 2D grid as <b>co-ordinates</b> in the first quadrant; write and use pairs of co-ordinates e.g. (2,5)</p> <p>Plot specified points using co-ordinates in the first quadrant; draw sides to complete a given polygon</p>	<p>Vocabulary from previous term/year including:</p> <p>regular, irregular, polygon, isosceles, equilateral, scalene, right-angled (triangles), parallelogram, rhombus, trapezium</p> <p>Symmetry, lines of symmetry, symmetric/symmetrical</p> <p>Co-ordinates, first quadrant</p>

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<p><b>Number</b></p> <p>Multiplication</p>	<p>5</p>	<p>Count in multiples of 9 and multiples of 7, forwards and backwards                  Recall and use multiplication facts for the 9 times table; look at patterns in the 9 times table                  Recall and use multiplication facts for the 7 times table</p> <p>Write and calculate mathematical statements for multiplication using 7 and 9 times tables (and other known tables); solve missing number problems (empty boxes)</p> <p>Find factor pairs of numbers</p> <p>Use the <b>formal written method of short multiplication</b> to multiply a teen number by a single digit number; extend with other two-digit numbers multiplied by a single digit number e.g. <math>34 \times 7 = 238</math>  <b>(See Calculation Policy)</b></p> <p>Solve word problems, which involve multiplication e.g. How many days are there in 15 weeks? There are 25 biscuits in a packet. I have 9 packets of biscuits. How many biscuits do I have altogether?</p>	<p>Multiply, multiplication, times, product</p> <p>Factor pairs</p> <p>Partition, value, tens, ones/units                  Grid method, expanded method, formal method of short multiplication</p> <p>Calculation                  Problem, solution</p>
<p><b>Number</b></p> <p>Division</p>	<p>5</p>	<p>Count in multiples of 9 and multiples of 7, forwards and backwards                  Recall and use division facts for the 9 times table                  Recall and use division facts for the 7 times table</p> <p>Write and calculate mathematical statements for division using 7 and 9 times tables (and other known tables); solve missing number problems (empty boxes); use the inverse operation to check answers</p> <p>Use the <b>partitioning method</b> to divide two-digit numbers by a single-digit number (in preparation for formal method of short division)                  e.g. <math>48 \div 3 = 16</math>; <math>85 \div 5 = 17</math> <b>(See Calculation Policy)</b></p> <p>Solve word problems, which involve division, using the partitioning method e.g. I have 65 stickers and I share them equally between five friends. How many stickers do they each have?</p>	<p>Divide, division                  Partition, partitioning method                  Inverse</p> <p>Calculation                  Problem, solution</p>

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<b>Number</b> Fractions (including decimals)	3         2	<p>Continue to recognise fractions in the context of parts of a whole, of numbers, measurements, shapes and of quantities; use the terms numerator and denominator; write fractions (unit fractions and non-unit fractions) using notation and words; consolidate finding unit fractions of numbers</p> <p>Find non-unit fractions of numbers and quantities, <b>using diagrams and resources</b> to support, and understand the relationship between non-unit fractions and multiplication and division of quantities e.g. 7/10 of 90; 4/5 of 20; 2/3 of 27cm</p> <p>Solve problems involving non-unit fractions e.g. What is 2/3 of 90cm? There are 30 children in the class. 3/10 of them walk to school. How many children walk to school?</p> <p>Add and subtract fractions with the same denominator within one whole e.g. <math>3/5 + 1/5 = 4/5</math> and beyond one e.g. <math>4/5 + 3/5 = 8/5</math> (<b>using diagrams to support</b>); where appropriate refer to mixed numbers and improper fractions (taken from <b>Y5 programme of study</b>)</p> <p>Consolidate the connection between <b>tenths</b> and decimal fractions and use <b>decimal notation</b> (to one decimal place); recognise that <math>5/10 = 0.5 = 1/2</math></p> <p>Connect <b>hundredths</b> and decimal fractions and use decimal notation to two decimal places e.g. <math>1/100 = 0.01</math>, <math>2/100 = 0.02</math> etc; <math>0.25 = 25/100 = 2/10 + 5/100</math> (consider the use of a resources to support understanding e.g. 100 square, decimal place value cards and a place value chart); link decimal notation to money and length</p>	Whole Unit fraction, non-unit fraction Numerator, denominator mixed number, improper fraction        Tenths, hundredths Decimal notation
<b>Measurement</b> Time	5	<p>Consolidate writing and telling the time to the nearest 1 minute using an analogue clock (including using Roman numerals) and digital clock (12 hour); convert between analogue and digital clocks (12 hour); continue to use a.m. / p.m.</p> <p>Convert between 12 hour digital clocks and 24 hour digital clocks</p> <p>Solve word problems relating to time (consider using a time line to solve), e.g. I arrive at school at 9:00am and leave at 3:35pm. How long do I spend at school? The train leaves at 11:30 and arrives at 14:00. How long is my train journey? The plane takes off at 15:45 and lands at 17:10. How long is the flight?</p> <p>Know the number of days in a week, days in <b>each</b> month, months in a year; days in a year (including leap year)</p> <p>Use a calendar to solve problems relating to time, e.g. How many Wednesdays are there in March this year? Which months of the year have 31 days? How many days is it until the holidays start? What is the date on the 40<sup>th</sup> day of the year?</p>	All relevant vocabulary from previous years relating to time including: 24 hour digital clock Leap year       Calendar Problem, solution

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<p><b>Measurement</b></p> <p>Perimeter and Area</p>	<p>5</p>	<p>Measure the perimeter of rectilinear shapes using cm and m Calculate the perimeter of rectilinear shapes (where the length of the sides is given)</p> <p>Measure perimeter using metres and centimetres using mixed units and/or decimal notation e.g. the perimeter of the white board is 6.25m</p> <p>Solve problems relating to perimeter e.g. Draw a rectangle with a perimeter of 12cm. Is there more than one way to do this?</p> <p>Find the area of rectangles by counting squares; use the notation for square centimetres (cm<sup>2</sup>); relate finding area to arrays and to multiplication</p> <p>Solve problems relating to area e.g. draw a rectangle with an area of 24cm<sup>2</sup>. Is there more than one way to do this?</p>	<p>Perimeter Area</p> <p>Square centimetres, cm<sup>2</sup></p>
<p><b>Number</b></p> <p>Addition and Subtraction</p> <p>(Mental Methods)</p>	<p>5</p>	<p>Add/subtract 99 (then 98 etc) by adding/subtracting 100 and adjusting (within 1000 and beyond) e.g. record using an empty number line; extend with add/subtract 999 (within 10,000) <b>(See Mental Maths Policy)</b></p> <p>Find a <b>small difference</b> by counting up on an empty number line e.g. <math>906 - 885 = 21</math>; <math>1005 - 890 = 115</math> <b>(See Mental Maths Policy)</b></p> <p>Add mentally several small numbers e.g. <math>8 + 15 + 12 = 20 + 15 = 35</math></p> <p>Solve one-step and two-step addition and subtraction problems using <b>mental methods</b> with jottings, deciding which operations and methods to use</p>	<p>Digit Thousands, hundreds, tens, ones/units</p> <p>Addition, plus, altogether add, sum of, total, increase, more than</p> <p>Subtraction, subtract, minus, difference (between), decrease, less than</p> <p>Empty number line</p> <p>Calculate, calculation Problem, solution</p>

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<p><b>Measurement</b></p> <p>Mass and Capacity</p>	<p>5</p>	<p>Consolidate understanding of kilograms (kg) and grams (g) as units of measurement for <b>mass</b> using <b>practical</b> and <b>real life objects</b> e.g. Approximately, how much does an apple weigh? What unit of measurement would you use to weigh yourself?</p> <p>Know the relationship between units (<b>1kg = 1000g</b>) Convert between different units of measurement e.g. 3kg = 3000g; ½ kg = 500g</p> <p><b>Begin</b> to use decimal notation for mass e.g. an average cat weighs three and a half kilograms = 3kg and 500g = 3.5 kg</p> <p>Convert between different units of measurement using mixed units and <b>begin</b> to use decimal notation e.g. 3kg = 3,000g; 1,500g = 1kg and 500g = 1.5kg</p> <p>Estimate and measure mass using appropriate units and equipment, including mixed units of measurements, and record using decimal notation (when appropriate), <b>in practical contexts</b></p> <p>Consolidate understanding of litres (l) millilitres (ml) as a unit of measurement for <b>capacity</b> using <b>practical</b> and <b>real life containers</b> e.g. Approximately, what is the capacity of this bucket? What unit of measurement would you use to measure the capacity of this cup?</p> <p>Know the relationship between units (<b>1l = 1000ml</b>) Convert between different units of measurement e.g. 2 litres = 2000ml; ½ litre = 500 millilitres</p> <p><b>Begin</b> to use decimal notation for capacity e.g. This bottle contains one and a half litres/ one litre 500 millilitres; 1.5 litres</p> <p>Convert between different units of measurement using mixed units and <b>begin</b> to use decimal notation e.g. 2,500ml = 2l and 500g = 2.5litres</p> <p>Estimate and measure capacity using appropriate units and equipment, including mixed units of measurements, and record using decimal notation (when appropriate), <b>in practical contexts</b></p>	<p>Weight, mass, measure Kilograms, kg, grams, g</p> <p>Capacity, measure Litre, l, millilitre, ml</p> <p>Decimal notation</p>
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### Additional weeks

To be used for:

- assessment, consolidation and responding to AfL
- additional using and applying activities