

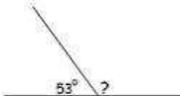
**Oral mental starters (ongoing, throughout the term):**

- Identify multiples and count from (and back to) 0 in multiples of 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 25, 50, 100 and 1000
- Recall and use multiplication and division facts for the 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 times tables (up to the 12<sup>th</sup> multiple)
- Find all factor pairs of a given number; find all common factors for a pair of numbers
- Multiply and divide numbers mentally drawing upon known facts e.g.  $7 \times 8 = 56$ ;  $7 \times 0.8 = 5.6$ ;  $560 \div 7 = 80$
- Multiply whole numbers and numbers with up to two decimal places by 10, 100 and 1000 and divide corresponding numbers by 10, by 100 and by 1000
- Read, write, compare and order whole numbers up to 500,000
- Read, write, compare and order numbers with up to three decimal places
- Subtract larger numbers mentally by finding the difference, e.g.  $2014 - 1995 = 19$  (consider using empty number lines)
- Use knowledge of place value to derive doubles and halves of decimal numbers
- Count forwards and backwards with positive and negative whole numbers, including through zero (refer to number line)
- Recognise, describe and extend linear number sequences including those involving fractions, e.g. 3, 3½, 4, 4½...; find the term to term rule
- Find complements of 1 e.g.  $0.83 + 0.17 = 1$
- Convert between different units of measurement using decimal notation e.g. 3.75 km to m, 6.8 cm to mm, 1350 ml to l, 2.25 kg to g
- Compare and order fractions, decimals and percentages (using diagrams and resources to support)
- Know and use the vocabulary of prime numbers and establish whether a number up to 50 is a prime number (using knowledge of factors and multiples)
- Recognise and use square numbers (up to  $12 \times 12$ ) and the notation e.g.  $4^2 = 16$
- Count forwards and backwards in steps of powers of 10 (10, 100, 1000, 10,000) from any given number up to 100,000 (then 500,000)

**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 to 500,000</p> <p>Count forwards or backwards in steps of powers of 10 (10, 100, 1000, 10 000), from any given number up to 500,000</p> <p>Order and compare numbers within 500,000</p> <p>Round any number up to 500,000 to the nearest 10, 100, 1000 10,000 or 100,000</p> <p>Recognise the place value of each digit in a six-digit number</p> <p>Partition six-digit numbers into hundred thousands, ten thousands, thousands, hundreds, tens and ones/units; continue to use place value cards and charts to support</p>	<p>Partition, Place value</p> <p>Digit, number</p> <p>Units/ones, Tens, Hundreds, Thousands Ten thousands, Hundred thousands.</p> <p>Order</p> <p>Compare</p> <p>More than, greater than, less than, &lt;, &gt;</p> <p>Round</p>

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<p><b>Number</b></p> <p>Negative Numbers &amp; Roman Numerals</p>	<p>3</p> <p>2</p>	<p>Interpret and use negative numbers in context, eg temperature or depth below sea level 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>Count forwards and backwards in steps through zero to include positive and negative whole numbers, e.g. 7, 3, -1, -5 (describe the term to term rule)</p> <p><b>Begin</b> to calculate intervals across zero, e.g. the temperature falls from 11° C to -2° C. How many degrees colder is it? <b>(taken from Y6 programmes of study)</b></p> <p>Read and write Roman numerals to 500 (D) and 1000 (M); recognise years written in Roman numerals, e.g. The Battle of Hastings was in 1066 (MLXVI); How do you write the year of your birth in Roman numerals?</p>	<p>Positive, negative (numbers) Temperature, interval, depth</p> <p>Roman numerals I, V, X, L, C, D, M</p>
<p><b>Number</b></p> <p>Addition and Subtraction</p>	<p>5</p>	<p>Consolidate using the <b>formal written method of addition</b> to add two four-digit numbers, decimal numbers, including in the context of money and measures <b>(See Calculation Policy)</b></p> <p>Consolidate the <b>formal written method of subtraction</b> to subtract two four-digit numbers, decimal numbers, including in the context of money and measures <b>(See Calculation Policy)</b> Use rounding to estimate and check answers to calculations</p> <p>Solve addition and subtraction one-step, two-step and multi-step word problems (including money and measures problems), deciding which operation to use e.g. A train travels 1428 km on Monday and 1354km on Tuesday. How far does it travel altogether? How much further does it travel on Monday than on Tuesday?</p>	<p>Digit Thousands, hundreds, tens, ones/units</p> <p>Addition, plus, altogether, add, sum of, total, more than, increase</p> <p>Subtraction, subtract, minus, less than, decrease Round, estimate, check</p>
<p><b>Geometry</b></p> <p>Properties of Shape (2D)</p> <p>(including angles)</p>	<p>5</p>	<p>Consolidate acute, obtuse and right angles; introduce <b>reflex angles</b> Know that angles in a straight line total 180° or half a turn; know that angles at a point total 360° or one whole turn; three quarters of a turn is 270 °</p> <p>Calculate missing angles in a straight line, e.g. Use a protractor to check the missing angle</p>  <p>Use the properties of rectangles, i.e. all four angles are right angles, opposite sides are equal and parallel and the diagonals bisect one another, to deduce related facts and find missing lengths and angles; use conventional markings for parallel lines and right angles</p> <p><b>Investigate</b> diagonals of other quadrilaterals, e.g. which quadrilaterals have perpendicular diagonals (meet at right angles); which do not? Which quadrilaterals have diagonals that bisect each other (cut each other in half); which do not?</p>	<p>Acute, obtuse, right angle, reflex</p> <p>Degrees °</p> <p>Half turn, Whole turn Quadrilateral, rhombus, square, rectangle, kite, trapezium, parallelogram</p> <p>diagonal, bisect, perpendicular, parallel</p>

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<p><b>Number</b></p> <p>Multiplication</p>	<p>5</p>	<p>Consolidate all mathematical vocabulary related to multiplication; use the term <b>product</b> e.g. What is the product of 12 and 5?</p> <p>Write and calculate mathematical statements for all multiplication tables; include multiplying by 0; solve missing number problems</p> <p>Consolidate the <b>formal written method of short multiplication</b> to multiply a two or three digit-number by a single digit number <b>(See Calculation Policy for guidance on progression in methods)</b></p> <p>Introduce <b>long multiplication</b> to multiply a two-digit number by a two-digit number <b>(See Calculation Policy for guidance on progression in methods)</b></p> <p>Solve word problems, which involve multiplication e.g. There are 26 chairs in a row. There are 18 rows of chairs. How many chairs are there altogether?</p>	<p>Multiply, multiplication, times, product</p> <p>Partition, value, tens, ones/units</p> <p>Grid method, expanded method, formal method of short multiplication, long multiplication</p>
<p><b>Number</b></p> <p>Division</p>	<p>5</p>	<p>Consolidate all mathematical vocabulary related to division; introduce the terms <b>divisor, dividend, quotient</b> e.g. In this calculation, what is the divisor, the dividend and the quotient? <math>56 \div 7 = 8</math></p> <p>Consolidate tests of divisibility by 2, 3, 4, 5, 10, 100 Know and apply tests of divisibility by 9</p> <p>Consolidate the <b>formal method of short division</b> to divide a two- digit number or a three-digit number by a single-digit number with whole number answers or with remainders <b>(See Calculation Policy)</b></p> <p>Express the remainder as a fraction, (the remainder divided by the divisor) <b>(See Calculation Policy)</b></p> <p>Solve word problems, which involve division with remainders, using the <b>formal written method of short division</b>; interpret remainders in context using rounding or fractions e.g. The farmer collects 140 eggs from his hens and puts them into boxes of six. How many boxes does he need to ensure that all eggs are in boxes? (rounding) Four children share 98 grapes equally. How many grapes do they have each? (remainder as a fraction)</p>	<p>Divide, division, divisor, dividend, quotient, remainder, fraction, round up, round down</p> <p>Formal written method Formal layout <math>\overline{)}</math></p>

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<p><b>Number</b></p> <p>Fractions</p>	<p>5</p>	<p>Consolidate mixed numbers and improper fractions in context and/or using diagrams; convert from one form to the other</p> <p>Recognise patterns in equivalent fractions (consider using a times table grid to support), e.g. <math>1/3 = 2/6 = 3/9 = 4/12</math></p> <p>Convert a pair of fractions to make equivalent fractions with a <b>common denominator</b>, e.g. <math>1/2</math> and <math>3/4</math> converts to <math>2/4</math> and <math>3/4</math>; <math>3/10</math> and <math>4/5</math> converts to <math>3/10</math> and <math>8/10</math></p> <p>Add and subtract fractions with the same denominator or denominators that are multiples of the same number e.g. <math>2/3 + 2/3 = 4/3 (= 1\frac{1}{3})</math>; <math>3/5 + 3/15 = 9/15 + 3/15 = 12/15</math> (the answer could be simplified to <math>4/5</math>); <math>3/4 - 1/2 = 3/4 - 2/4 = 1/4</math> (<b>supported by materials and diagrams</b>)</p> <p>Multiply proper fractions by whole numbers <b>supported by materials and diagrams</b>, e.g. <math>1/3 \times 2 = 2/3</math>; <math>2/3 \times 2 = 4/3 = 1\frac{1}{3}</math>; <math>2/5 \times 3 = 6/5 = 1\frac{1}{5}</math></p>	<p>Whole Numerator, denominator, mixed number, improper fraction, common denominator, equivalent fraction</p>
<p><b>Number</b></p> <p>Decimals and Percentages</p>	<p>5</p>	<p>Round decimal numbers with two decimal places- to whole numbers and to one decimal place</p> <p>Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents – relate to measures</p> <p>Order a set of decimal numbers with up to three decimal places and position them on a number line</p> <p>Consolidate understanding of <b>per cent</b> as number of parts per hundred and record fraction and decimal equivalents of 1%, 10%, 20%, 25%, 50%</p> <p>Compare simple decimal, fraction and percentage equivalents, e.g. which is greater 25% or <math>1/5</math>? 0.8 or <math>3/4</math>? How do you know? <b>Use materials and diagrams to support</b></p> <p>Solve problems using knowledge of percentage and decimal equivalents of <math>1/2</math>, <math>1/4</math>, <math>1/5</math>, and fractions with a denominator of a multiple of 10 (<math>1/10</math>, <math>2/10</math> etc) e.g. There are 48 questions in a test. I get 50% of them right. How many questions do I get right? How many questions do I get wrong? A coat sells for £80. In the sale it has a reduction of 10%. How much is the coat now? How do you know?</p>	<p>decimal place, tenth, hundredth, thousandth, equivalent, round</p> <p>per cent, %</p>

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<p><b>Measurement</b></p> <p>Perimeter, Area, Volume</p>	<p>5</p>	<p>Consolidate understanding of perimeter and express the formula for finding the perimeter of a rectangle in words (and then letters); calculate the perimeter of rectilinear shapes, including some examples from scaled drawings</p> <p>Solve perimeter problems with missing measurements, e.g. the perimeter of a rectangle is 72cm. The shortest side is 9cm. What is the length of the longest side?</p> <p>Measure and calculate the perimeter of composite rectilinear shapes using cm and m</p> <p>Consolidate understanding of area and relate finding area to arrays and to multiplication. Calculate the area of rectangles, including some examples from scaled drawings, using the formula in words and letters, using standard units for square centimetres (cm<sup>2</sup>) and square metres (m<sup>2</sup>)</p> <p>Investigate using area and perimeter, e.g. Draw rectangles with a perimeter of 24cm. What is the rectangle with the largest area with a perimeter of 24cm?</p> <p>Introduce <b>volume</b> by investigating using 1cm<sup>3</sup> blocks to build different cuboids (introduce the terms cubic centimetres, cm<sup>3</sup>)</p>	<p>Perimeter Area</p> <p>Square centimetres, cm<sup>2</sup>, square metres, m<sup>2</sup></p> <p>Volume, cuboids Cubic centimetres, cm<sup>3</sup></p>
<p><b>Statistics</b></p>	<p>5</p>	<p>Solve comparison, sum and difference problems using information presented in a <b>line graph</b>, e.g. examine a line graph showing the level of water in a barrel during a week in March. Describe the pattern of rainfall through the week. Which day had the greatest rainfall? Explain how you know. How much rain fell in total during the week? How much more rain fell on the Wednesday than on Thursday?</p> <p>Read a range of scales on the axes of graphs and charts</p> <p>Complete, read and interpret information in tables, e.g. using the line graph showing the level of water in a barrel during a week in March, create a table. Ask and answer questions about the data in the table</p> <p>Collect data and present it in a table. Using the information presented in a table, decide the best way to represent it - in a line graph, bar chart or pictogram and explain their decision <b>(Possible link to Science curriculum)</b></p>	<p>line graph, continuous data, axis, scale, table, interpret</p>

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<p><b>Number</b></p> <p>Addition and Subtraction</p> <p>(Mental Methods)</p>	<p>5</p>	<p>Add/subtract larger numbers and decimals <b>mentally</b>, using jottings where necessary (<b>See Mental Maths Policy</b>) e.g.</p> <p>Find sums and differences of decimals, e.g. <math>6.5 + 2.7</math>; <math>7.8 - 1.3</math> (consider using an empty number line and relate to whole numbers)</p> <p>Find a <b>small difference</b> between near multiples of 1000, e.g. <math>6007 - 5987</math> (consider using a number line)</p> <p>Derive the number that must be added to any four digit number, to make the next multiple of 1000, e.g. <math>4087 + ? = 5000</math>; use inverse operations to check</p> <p>Solve addition and subtraction word problems using <b>mental methods</b> with jottings, deciding which operations and methods to use e.g. My niece was born in 1994. How old is she now? My nephew was born in 1989. How old will he be in 2020?</p> <p>The car park has spaces for 2000 cars. There are 1,898 cars in the car park now. How many more cars can fit in?</p> <p><b>Investigate-</b> Use the following decimal numbers 1.7, 4.6, 2.3, 5.4, 3.6. Write as many different addition and subtraction statements as you can and solve them using a <b>mental method</b> of your choice. What is the smallest difference you can find? What is the closest answer to 10 you can make? What is the largest total you can find? How many whole number answers can you make?</p>	<p>Digit</p> <p>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</p> <p>Problem, solution</p>
<p><b>Additional weeks</b></p> <p>To be used for:</p> <ul style="list-style-type: none"> <li>• assessment, consolidation and responding to AfL</li> <li>• additional using and applying activities</li> </ul>			