**Suggested oral mental starters (ongoing, throughout the term)**:

- Count from (and back to) 0 in multiples of 3, **6**, 4, 8, **25**, 50, 100
- Recall and use multiplication and division facts for the 2, 3, 4, 5, **6**, 8 and 10 times tables (up to the 12th multiple)
- Recognise and use inverse operations and commutativity to derive other related facts e.g. 4 x 6 = 24 to calculate 6 x 4 = 24; 24 ÷ 6 = 4; 24 ÷ 4 = 6
- Compare and order numbers up to 1000 and beyond
- Derive addition and subtraction facts for all pair of numbers that total 100 (refer to 100 square)
- Derive addition and subtraction facts for multiples of 100 to 1000 (e.g. 700 + 300 = 1000)
- Given a number, identify the number that is 100 more or less within 1000 (and beyond)
- Find doubles of all two-digit numbers and corresponding halves (using knowledge of place value and partitioning)
- Find doubles of three-digit multiples of ten and corresponding halves e.g. double 240 = 480; half of 480 = 240
- 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 hour digital clocks
- Convert between different units of measurement e.g. cm to m, minutes to hours
- Identify, name, describe and reason about 2D and 3D shapes, including shapes in different orientations

| Areas of Study | No of days | Statutory requirements and non-statutory guidance | Suggested Key Vocabulary |
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| **Number**<br><br>Number and place value<br><br>**Week 1** | 3-5 | Read and write numbers to 1,000; **begin** to read numbers beyond 1,000<br>Given a number, identify the number that is 100 more or less within 1,000 (and then beyond)<br>Order and compare numbers within 1,000 (and then beyond)<br>Round two- digit and three-digit numbers to the nearest 10; **extend** by rounding numbers to the nearest 100<br>Recognise the place value of each digit in a three-digit number; **extend** to four-digit numbers<br>Partition three-digit numbers; **extend** to partitioning four-digit numbers<br>Represent three-digit numbers (and **extend** to four-digit numbers) using different representations such as an empty number line, place value cards, Dienes or an abacus<br>Reason about numbers and place value e.g. If you wrote these numbers in order starting with the smallest, which number would be third? 750, 705, 985, 589, 895. Explain how you ordered these numbers | Partition, Place value<br>Digit, number<br>Units/ones, Tens, Hundreds, Thousands<br><br>Order<br>Compare<br>More than, greater than, less than, <, ><br><br>Round<br>Estimate |



Produced for Southwark Primary Schools by a working party led by Diane Andrews, maths consultant

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| **Number**<br><br>Decimals (and place value)<br><br>**Week 2** | 5 | Count up and down in tenths **(from Y3 programmes of study)**; count up and down in tenths starting from different starting points (consider using a counting stick)<br>Connect tenths to decimal fractions and use **decimal notation** to one decimal place i.e. 1/10 = 0·1, 2/10 = 0·2, 3/10 = 0·3…<br>Recognise that 0·5 is equivalent to 1/2<br>Recognise the place value in numbers with one decimal place, identifying the value of the digits as hundreds, tens, units/ones and tenths<br>Partition numbers with one decimal place e.g. 142·5 = 100 + 40 + 2 + 0·5 (use place value/arrow cards to support)<br>Order and compare (using < and >) numbers with up to one decimal place<br>Begin to round numbers with one decimal place to the nearest whole number | Tenths<br>Decimal notation<br>Place value<br><br>Round<br>Order<br>Compare, <, > |
| **Number**<br><br>Addition **and** Subtraction<br><br>**Week 3** | 5 | Use place value to add/subtract hundreds to a three digit number, including bridging 1,000<br>Solve word problems involving addition/subtraction of hundreds to three digit numbers e.g.<br>I have 845 ml of orange juice in a jug. I pour out 300ml of the juice into a beaker. How much juice is left in the jug?<br>925 people are in the theatre. Another 100 people arrive. How many people are in the theatre now?<br>**Consolidate the formal written method of addition** to add two two-digit numbers; a three-digit number and a two-digit number; two three-digit numbers **(See Calculation Policy)**<br>**Consolidate the formal written method of subtraction** to subtract two two-digit numbers; a two-digit number from a three-digit number; a three-digit number from a three- digit number **(See Calculation Policy)**<br>Solve one-step and two-step word problems involving addition/subtraction using **the formal written method;** estimate answers to calculations; use inverse operations to check answers | Digit, hundreds, tens, ones/units<br>Addition, plus, total, altogether, add, sum of, increase<br>Subtraction, subtract, minus, less than, decrease<br>Expanded written method, formal written method<br>Estimate, inverse<br>Calculate, calculation |
| **Geometry**<br><br>Properties of Shape (2D) and Angles<br><br>**Week 4** | 5 | Compare and classify 2D shapes (including in different orientations) using the names and properties learned in previous years, including lines of symmetry, right angles, obtuse/acute angles, parallel and perpendicular lines; introduce the terms **regular** and **irregular**<br>**Extend** to comparing and classifying **different triangles** (isosceles, equilateral, scalene and right-angled triangles) and **different quadrilaterals** (parallelogram, rhombus and trapezium)<br>Compare, classify and sort 2D shapes using Venn and Carroll diagrams e.g. regular/irregular polygons<br>Reason about 2D shapes e.g. What's the same about these three shapes? What's different about them?<br>Complete a simple symmetric figure or drawing with respect to a specific line of symmetry (horizontal or vertical)<br>Identify whether angles are greater or less than a right angle using the terms **acute** and **obtuse** (angles); identify angles in regular and irregular polygons as acute, obtuse or right angles: compare and order angles (up to two right angles by size) | Relevant vocabulary from previous years including: , polygon, quadrilateral, right-angled triangle, line of symmetry, parallel, perpendicular (lines), acute, obtuse<br>Extend with: isosceles, equilateral, scalene (triangles), parallelogram, rhombus, trapezium<br>Regular, irregular<br>Acute, obtuse (angles) |

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| **Number**<br><br>Multiplication<br><br>**Week 5** | 5 | Recall and use multiplication facts for the 2, 3, 4, 5, 8 and 10 times tables to the 12th multiple (consider as mental/oral starters)<br>Through doubling, connect the 3 and 6 times tables; count in multiples of 3 and 6, forwards and backwards; recall and use multiplication facts for the 6 times table<br>Write and calculate mathematical statements for multiplication using the 6 times table (and other known tables); solve missing number problems e.g. ☐ x 6 = 30; 8 x 6 = ☐<br>Consolidate the **partitioning method** (using the distributive law) as a **mental method** to multiply a teen number by a one-digit number e.g. 16 x 5 = 80 **(See Y3 in Calculation Policy)**; **extend** with other two-digit numbers multiplied by a one-digit number e.g. 24 x 6 = 144<br>Consolidate using the **standard written method of short multiplication** to multiply a teen number by a one-digit number; **extend** with other two-digit numbers multiplied by a single digit number e.g. 26 x 5 = 130<br>Solve word problems that involve multiplication e.g. There are 14 cherries in each bowl. I have six bowls of cherries. How many cherries do I have altogether? There are 26 children in each class. How many children in four classes?<br>Solve problems involving **positive integer scaling** e.g. My sunflower is 26 cm tall. My friend's sunflower is three times as tall. How tall is my friend's sunflower? I have 65 cherries but my brother has twice as many as me. How many does he have? | Multiply, multiplication, times<br><br>Partition, value, tens, ones/units<br><br>Grid method, expanded method<br><br>Problem, calculation, solution |
| **Number**<br><br>Division<br><br>**Week 6** | 5 | Recall and use division facts for the 2, 3, 4, 5, 8 and 10 times tables to the 12th multiple (consider as mental/oral starters)<br>Through doubling, connect the 3 and 6 times tables; count in multiples of 3 and 6, forwards and backwards; recall and use division facts for the 6 times table<br>Write and calculate mathematical statements for division using the 6 times table and other known tables; solve missing number problems (empty boxes); use the inverse operation to check answers<br>Consolidate the **formal layout** for division using known times tables **(See Calculation Policy)**<br>Introduce **remainders**, using the formal written layout, with known times tables e.g. 25 ÷ 8 = 3 r1; consider illustrating remainders using practical resources, diagrams or an empty number line to ensure understanding **(See Calculation Policy)**<br>Solve word problems, which involve division with and without remainders, using the formal written layout (using known multiples) e.g. I have 32 cherries and I share them equally between four friends. How many cherries do they each have? I collect 19 eggs from my hens and put them into boxes of six. How many full boxes of eggs do I have and how many eggs are left over?<br>Solve problems involving multiplication and division- consider the problem **'Suzie the snake'** | Divide, division<br>Formal layout )‾‾<br><br>Remainder<br>Inverse<br><br>Problem, calculation, solution |

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| **Number**<br><br>Fractions<br><br>**Week 7** | 5 | Continue to recognise fractions in the context of parts of a whole, of shapes, of numbers, of measurements, and of quantities; use the terms **numerator** and **denominator**; write fractions (unit fractions and non-unit fractions) using notation and words<br><br>Connect finding a unit fraction of a number with division e.g. one tenth of 80 is 8 because 80 ÷ 10 = 8; 1/6 of 18 is 3 because 18 ÷ 6 = 3; 1/8 of 32 = 4 because 32 ÷ 8 =4<br><br>Find non-unit fractions of numbers and quantities (where the answer is a whole number) **using diagrams and resources** to support e.g. 3/4 of 20 = 15; 2/3 of 12 = 8; 2/5 of 30 children = 12 children<br><br>Recognise and show, **using diagrams and fraction walls,** families of common equivalent fractions e.g. 1/ 2 = 2/4 = 4/8, 1/3 = 2/6 = 3/9<br><br>Solve problems involving unit and non-unit fractions e.g. There are 30 plums in a bowl and I eat 1/5 of them. How many plums are left in the bowl? I have 12 cherries and I give three quarters of them to my friend. How many do I give him? How many do I have left? There are 20 children at a party. 2/5 of them are boys. How many boys and how many girls are at the party?<br><br>Reason about fractions e.g. would you rather have 1/3 of £21 or 2/5 of £20? Why?<br><br>Consolidate addition **and** subtraction of fractions with the same denominator, within one and begin to give examples where the total is greater than one e.g. 2/5 + 4/5 = 6/5 | Whole<br>Unit fraction, non-unit fraction<br><br>Numerator, denominator<br>Equivalent fraction |
| **Measurement**<br><br>Time<br><br><br><br><br><br><br>Money<br><br><br>**Week 8** | 3<br><br><br><br><br><br><br>2 | **Consolidate** writing and telling the time to the nearest minute using an analogue clock (including using Roman numerals) and a digital clock (12 hour); continue to use a.m. /p.m.<br>Convert between analogue and digital clocks (12 hour)<br><br>Extend by introducing 24 hour digital clocks; convert between 12 hour digital clocks and 24 hour digital clocks using simple examples e.g. 1.30 PM = 13.30; 8.25 AM = 08.25<br><br>Know the number of seconds in a minute, minutes in an hour, hours in a day, days in a week, days in each month, months in a year; days in a year (including leap years)<br><br>Solve problems involving converting from one unit of time to another e.g. How many minutes are there in three hours? The swimming pool was closed for six weeks. For how many days was it closed? My niece is 3 years old today. How many months old is she?<br><br>Consolidate pound and pence and the relationship between them (£1 = 100p; £2 = 200p etc)<br>Use decimal notation to record money e.g. 105p = £1·05, 245p = £2·45<br><br>Add and subtract amounts of money in real life contexts (including using decimal notation)<br><br>Solve problems/investigations involving money e.g. I have five coins in my pocket and they total £1.25. What could those five coins be? Is there more than one solution? | All relevant vocabulary from previous years relating to time and money, including:<br><br>24 hour digital clock<br>Leap year<br><br><br><br><br>Pound (£), pence (p)<br>Decimal point<br><br>Problem, investigation, solution |

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| **Measurement**<br><br>Length and Perimeter<br><br>**Week 9** | 3<br><br>2 | Consolidate understanding of metres (m), centimetres (cm) and millimetres (mm) as units of measurement and the relationship between units; convert between units of length e.g. 3m = 300cm; 2cm = 20mm<br>Use mixed units and decimal notation for length e.g. 215cm = 2m and 15cm = 2·15m; 15mm = 1cm and 5mm = 1·5 cm<br>Estimate and measure, **in practical contexts,** using appropriate units and equipment, including mixed units of measurements, and record using decimal notation, when appropriate<br>Follow a line of enquiry relating to length e.g. my wrist measures less than my ankle. True or false? The total length of all my fingers is the same length as my arm. True or false? How will you find out? **(Possible link to Science curriculum)**<br>Consolidate the understanding of **perimete**r as the distance all the way round the outside<br>Measure the perimeter of rectangles (including squares) using cm and/or m<br>Calculate the perimeter of rectangles (where the length of the sides is given)<br>Solve problems relating to perimeter e.g. a square has a perimeter of 32cm. How long is each of the sides of this square? The perimeter of a rectangle is 12 cm. What are the lengths of the sides? Is there more than one solution? | Length<br>measure, ruler, tape measure<br>mm, millimetre, cm, centimetre, m, metre<br><br>Perimeter<br>Problem, solution (s) |
| **Number**<br><br>Addition and Subtraction (Mental Methods)<br><br>**Week 10** | 5 | Consolidate understanding that addition and subtraction are **inverse** operations<br>Derive addition and subtraction facts for **all pairs** of numbers that **total 100** (refer to 100 square)<br>e.g. 48 + 52 = 100; 100 – 52 = 48<br>Derive addition and subtraction facts for **multiples of 100 to 1000**<br>e.g. 600 + 400 = 1000, 1000 – 400 = 600<br>**Begin** to derive addition and subtraction facts for **multiples of 50 to 1000**<br>e.g. 450 + 550 = 1000, 1000 - 750 = 250<br>Solve missing number problems using number facts, inverse operations and place value<br>e.g. ☐ + 67 = 100; 1000 - ☐ = 700; 850 + ☐ = 1000<br>Mentally add/subtract a three-digit number and a two-digit number and two three-digit numbers, including with the use of jottings such as a number line e.g. 485 + 64; 564 + 201; 705 – 690 (use finding small differences by counting up for examples like this)<br>Solve word problems involving addition and subtraction, using **mental methods** (as above) and known facts | Inverse<br><br>Digit<br>Hundreds, tens, ones/units<br><br>Addition, plus, altogether add, sum of, total, increase, more than<br><br>Subtraction, subtract, minus, decrease, less than, difference<br><br>Calculate, calculation |

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| **Statistics**<br><br>Data handling<br><br>**Week 11** | 5 | Collect, present and interpret **discrete data** using tallies, bar charts and tables; use a **range of scales,** such as units of 2, 5 and 10<br>Solve problems using information presented in scaled bar charts, pictograms, tallies and tables including comparison, sum and difference problems e.g. How many more children in Year 4 walked to school than came by bus? How many children were asked altogether?<br>Collect, present and interpret **continuous data** to show changes over a period of time e.g. interpret a line/time graph showing the height of a bean stalk over a period of time<br>Follow a line of enquiry e.g. record the temperature, using a thermometer, at hourly intervals throughout the day. Are the mornings warmer or cooler than the afternoons? Present your findings using a line graph **(Possible link to Science Curriculum)** | Table, tally chart, bar chart,<br>pictogram<br>Data<br>Scale, interval<br><br>Line graph/ time graph<br><br>Temperature, degrees, Celsius,<br>° C |
| **Number**<br><br>Multiplication and Division (Mental Methods)<br><br>**Week 12** | 5 | Recognise and use the **inverse** relationships between multiplication and division and use this to solve missing number problems involving multiplication and division facts<br>e.g. 6 x ☐ = 24; 24 ÷ ☐ = 6<br>Find **factor pairs** of numbers using known multiples e.g. A factor pair of 18 is 3 and 6 (because 3 x 6 = 18)<br>Multiply numbers by ten (including numbers with one decimal place) e.g. 95 x 10 = 950;<br>4.2 x 10 = 42; describe the effect using the language of place value<br>Divide numbers by ten (including answers with one decimal place) e.g. 820 ÷10 =82; 46 ÷ 10 = 4.6 ;<br>describe the effect using the language of place value<br>Derive multiplication facts for multiples of ten times a one-digit number using mental methods and known facts e.g. 3 x 6 = 18; 30 x 6 = 180; 3 x 60 = 180<br>Derive division facts for multiples of ten times a one-digit number using mental methods and known facts e.g. 30 ÷ 6 = 5; 300 ÷ 6 = 50<br>**Reason** about multiplication and division e.g. If you know 4 x 6 = 24, what other facts can you give?<br>Solve **correspondence problems** (n objects are connected to m objects) e.g. I have red wrapping paper and red ribbon, and green wrapping paper and green ribbon. How many different combinations can you find so that I wrap each present differently? What if I also have silver wrapping paper and ribbon? Extend with a fourth colour (work systematically and present results in an organised way; record using a table and look for patterns and rules) | Multiply, multiplied by, multiplication, product<br><br>Divide, divided by, division<br><br>Inverse operation<br>Factors, factor pairs<br><br>Place value, decimal place, place holder, decimal point<br><br>Problem, solution, table, pattern, rule |

**Additional weeks**

To be used for:

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