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 (including x 0, x 1 and ÷ 1)
- 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 1,000 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 1,000 (e.g. 700 + 300 = 1,000)
- Given a number, identify the number that is 100 more or less within 1,000 (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 in tenths (fractions1/10, 2/10… and decimals 0.1, 0.2…)
- 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
- Opportunities for problem solving and reasoning related to all of the above

Areas of Study	No of days	Statutory requirements and non-statutory guidance	Suggested Key Vocabulary
Number Number and place value **Week 1**	3-5	**Year 3 conceptual prerequisite** ❖ Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10. ❖ Recognise the place value of each digit in three-digit numbers and compose and decompose three-digit numbers using standard and non-standard partitioning. ❖ Reason about the location of any three-digit number in the linear number system, including identifying the previous and next multiple of 10 and 100. **Year 4 curriculum** Read and write numbers to 1,000 in numerals and words; begin to read numbers beyond 1,000 in numerals and words Given a number, identify the number that is 100 more or less within 1,000 and then beyond 1,000 Order and compare numbers within 1,000 and then beyond 1,000 Round two- digit and three-digit numbers to the nearest 10; extend by rounding numbers to the nearest 100	Partition, Place value Digit, number Units/ones, Tens, Hundreds, Thousands Order Compare More than, greater than, less than, <, > Round Estimate

		Recognise the place value of each digit in a three-digit number; extend to four-digit numbers within 2,000 Partition three-digit numbers; extend to partitioning four-digit numbers within 2,000 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 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	
Number Decimals (and place value) **Week 2**	5	**Year 3 conceptual prerequisite** ❖ Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10. **Year 4 curriculum** 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) 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… Recognise that 0·5 (5/10) is equivalent to 1/2 Recognise the place value in numbers with one decimal place, identifying the value of the digits as hundreds, tens, units/ones and tenths Partition numbers with one decimal place e.g. 142·5 = 100 + 40 + 2 + 0·5 (use place value/arrow cards to support) Understand the effect of dividing one-digit whole numbers by 10 e.g. 4 ÷ 10 = 0.4 Order and compare (using < and >) numbers with up to one decimal place Begin to round numbers with one decimal place to the nearest whole number e.g. 4.3 rounds down to 4	Tenths Decimal notation Place value Round (up/down) Order Compare, <, >
Number Addition and Subtraction **Week 3**	5	**Year 3 conceptual prerequisite** ❖ Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10. ❖ Calculate small differences, for example: 74 - 72 = 2 ❖ Add more than 2 addends. **Year 4 curriculum** Use place value to add/subtract tens to a three-digit number; to add hundreds to a three digit number, including bridging 1,000 Solve word problems involving addition/subtraction of hundreds to three digit numbers e.g. 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?	Digit, hundreds, tens, ones/units Addition, plus, total, altogether, add, sum of, increase Subtraction, subtract, minus, less than, decrease Expanded written method, formal written method Estimate, inverse

		925 people are in the theatre. Another 100 people arrive. How many people are in the theatre now? 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 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 Written Calculation Policy, 2017)** Solve one-step and two-step word problems involving addition/subtraction using **the formal written methods** e.g. Jack has 84 marbles and Jill has 59 marbles. How many marbles do they have altogether? How many more marbles does Jack have than Jill? There are 148 boys and 227 girls in the playground. How many children altogether are there on the playground? If 148 children go in for lunch, how many children are left on the playground? Estimate answers to calculations; use inverse operations to check answers	Calculate, calculation
Geometry Properties of 2-D shape (and angles) **&** Position and direction (co-ordinates) **Week 4**	3 2	**Year 3 conceptual prerequisite** ❖ Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10. ❖ Draw polygons by joining marked points. ❖ Measure lines in centimetres and metres. **Year 4 curriculum** Compare, classify and sort 2-D 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** Extend to comparing and classifying **different triangles** (isosceles, equilateral, scalene and right-angled triangles) Reason about 2D shapes e.g. What's the same about these three shapes? What's different about them? Complete a simple symmetric figure or drawing with respect to a specific line of symmetry (horizontal or vertical), where the line of symmetry dissects the figure 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) Describe positions on a 2D grid as **co-ordinates** in the first quadrant; write and use pairs of co-ordinates e.g. (2,5); extend by plotting specified points using co-ordinates in the first quadrant.	Relevant vocabulary from previous years including: polygon, quadrilateral, right-angled triangle, line of symmetry, parallel, perpendicular (lines), acute, obtuse Extend with: isosceles, equilateral, scalene (triangles Regular, irregular Acute, obtuse (angles) Co-ordinates

Number Multiplication **Week 5**	5	**Year 3 conceptual prerequisite** ❖ Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10. ❖ Recall multiplication and division facts in the 5 and 10, and 2, 4 and 8 multiplication tables, and recognise products in these multiplication tables as multiples of the corresponding number. ❖ Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10), for example: 80 + 60 = 140, 140 – 60 = 80, 30 x 4 = 120, 120 ÷ 4 = 30 ❖ Multiply two-digit numbers by 10, and divide three-digit multiples of 10 by 10. ❖ Understand the inverse relationship between multiplication and division. ❖ Write and use multiplication table facts with the factors presented in either order. ❖ Recall multiplication table facts. **Year 4 curriculum** 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 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 (including x 0 and x 1); write and calculate mathematical statements for multiplication using the 6 times table; solve missing number problems e.g. ☐ x 6 = 30; 8 x 6 = ☐ Consolidate the **partitioning method** (using the distributive law) as a mental/informal method to multiply a teen number by a one-digit number e.g. 16 x 5 = 80; extend with other two-digit numbers multiplied by a one-digit number e.g. 24 x 6 = 144 **(See Mental Calculation Strategies, 2017)** Consolidate using the formal **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 **(See Written Calculation Policy, 2017)** 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? Solve problems involving **positive integer scaling** e.g. My sunflower is 16 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 Partition, value, tens, ones/units Grid method Partitioning method Formal written method Problem, calculation, solution

Number Division **Week 6**	5	**Year 3 conceptual prerequisite** ❖ Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10. ❖ Divide 100 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts. ❖ Use known division facts to solve division problems. **Year 4 curriculum** 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) 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 Write and calculate mathematical statements for division using the 6 times table (including dividing by 1); solve missing number problems (empty boxes); use the inverse operation to check answers Consolidate the **formal layout** for division using known times tables including examples with remainders **(See Written Calculation Policy, 2017)** 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 26 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? Solve problems involving multiplication and division- consider the problem **'**Suzie the snake' **(See 'Mathematical challenges for all pupils' booklet, 2016)**	Divide, division Inverse Formal layout) Remainder Problem, calculation, solution
Number Fractions **Week 7**	5	**Year 3 conceptual prerequisite** ❖ Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10. ❖ Reason about the location of fractions less than 1 in the linear number system. ❖ Add and subtract fractions with the same denominator, within 1 whole. **Year 4 curriculum** 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 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	Whole Unit fraction, non-unit fraction Numerator, denominator Equivalent fraction

		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 12m = 8 m; 2/5 of 30 children = 12 children 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 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? Reason about fractions e.g. would you rather have 1/3 of £21 or 2/5 of £20? Why? 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	
Measurement Time & Money **Week 8**	3 2	**Year 3 conceptual prerequisite** ❖ Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10. ❖ Calculate small differences, for example: 74 - 72 = 2 ❖ Add more than 2 addends. **Year 4 curriculum** Consolidate telling the time to the nearest minute using analogue clocks (including using clocks with Roman numerals) and digital clocks (12 hour); continue to use a.m. /p.m. Convert between analogue and digital clocks (12 hour) 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 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) 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 6 years old today. How many months old is she? Consolidate pound and pence and the relationship between them (£1 = 100p; £2 = 200p etc) Use decimal notation to record money e.g. 105p = £1·05, 245p = £2·45 Solve word problems by adding and subtracting amounts of money (including using decimal notation) 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: 24 hour digital clock Leap year Pound (£), pence (p) Decimal point Problem, investigation, solution

Measurement Length and Perimeter **Week 9**	3 2	**Year 3 conceptual prerequisite** ❖ Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10. ❖ Draw polygons by joining marked points. ❖ Measure lines in centimetres and metres. **Year 4 curriculum** 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 Use mixed units and decimal notation (with up to 2 decimal places) for length e.g. 215cm = 2m and 15cm = 2·15m; 15mm = 1cm and 5mm = 1·5 cm Estimate and measure, in practical contexts**,** using appropriate units and equipment, including mixed units of measurements, and record using decimal notation, when appropriate 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? Consolidate the understanding of **perimete**r as the distance all the way round the outside Measure the perimeter of rectangles (including squares) using cm and/or m Calculate the perimeter of rectangles (where the length of the sides is given) 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/height measure, ruler, tape measure, metre stick mm, millimetre, cm, centimetre, m, metre Perimeter Problem, solution(s)
Number Addition and Subtraction (Mental Methods) **Week 10**	5	**Year 3 conceptual prerequisite** ❖ Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10. ❖ Calculate small differences, for example: 74 - 72 = 2 ❖ Add more than 2 addends. **Year 4 curriculum** Derive addition and subtraction facts for **all pairs** of numbers that **total 100** (refer to 100 square) e.g. 48 + 52 = 100; 100 – 52 = 48 Derive addition and subtraction facts for **multiples of 100 to 1,000** e.g. 600 + 400 = 1000, 1000 – 400 = 600 Begin to derive addition and subtraction facts for **multiples of 50 to 1,000**	Inverse Digit Hundreds, tens, ones/units Addition, plus, altogether add, sum of, total, increase, more than Subtraction, subtract, minus, decrease, less than, difference Calculate, calculation

		e.g. 450 + 550 = 1,000, 1,000 - 750 = 250 Consolidate understanding that addition and subtraction are **inverse** operation Solve missing number problems using number facts and inverse operations e.g. ☐ + 67 = 100; 1000 - ☐ = 700; 850 + ☐ = 1,000 Mentally add/subtract numbers, including with the use of jottings such as a number line e.g. finding a small difference for subtraction/ the partitioning method for addition **(See Mental Calculation Strategies, 2017)**	
Statistics Data handling **Week 11**	5	**Year 3 conceptual prerequisite** ❖ Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10. **Year 4 curriculum** Interpret information presented in scaled bar charts (reading unmarked divisions), 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? Collect and present **discrete data** using tables, tallies and bar charts by following a line of enquiry; use a range of scales**,** such as units of 2, 5 and 10 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 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, pictogram Data Scale, interval Line graph/ time graph Temperature, degrees, Celsius, ° C
Number Multiplication and Division (Mental Methods) **Week 12**	5	**Year 3 conceptual prerequisite** ❖ Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10. ❖ Divide 100 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts. **Year 4 curriculum** Recognise and use the **inverse** relationships between multiplication and division and use this to solve missing number problems involving multiplication and division facts e.g. 6 x ☐ = 24; 24 ÷ ☐ = 6	Multiply, multiplied by, multiplication, product Divide, divided by, division Inverse operation Factors, factor pairs Place value, decimal place, place holder,

		Find **factor pairs** of numbers using known multiples e.g. A factor pair of 18 is 3 and 6 (because 3 x 6 = 18) Multiply numbers by ten (including numbers with one decimal place) e.g. 95 x 10 = 950; 4.2 x 10 = 42; describe the effect using the language of place value Divide numbers by ten (including answers with one decimal place) e.g. 820 ÷10 =82; 46 ÷ 10 = 4.6 ; describe the effect using the language of place value 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 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 **Reason** about multiplication and division e.g. If you know 4 x 6 = 24, what other facts can you give? **(See Mental Calculation Strategies, 2017)** 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 (Encourage children to work systematically and present results in an organised way; record using a table and look for patterns and rules)	decimal point Problem, solution, table, pattern, rule

Additional weeks

To be used for:

- Assessment (week commencing TBC), consolidation and responding to AfL
- additional using and applying activities
- Christmas maths activities