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

- 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 12th multiple) **(See Multiplication Tables Guidance, 2020)**
- 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 x 8 = 56; 7 x 0.8 = 5.6; 560 ÷ 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. 2,014 – 1,995 = 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. 0.6 and 0.4= 1; 0.83 and 0.17 = 1
- Convert between different units of metric measurement using decimal notation
- Compare and order fractions, decimals and percentages (using diagrams and resources to support)
- Recognise square numbers (up to 12 x 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 (within 500,000)

Areas of Study	No of days	Statutory requirements and non-statutory guidance	Suggested Key Vocabulary
Number Number and place value **Week 1**	3 - 5	Read and write numbers to at least 500,000 Given a number, identify the number that is ten, one hundred, one thousand or one hundred thousand more or less within 500,000 Order and compare numbers within 500,000 Round any number up to 500,000 to the nearest 10, 100, 1000 10,000 or 100,000 Recognise the place value of each digit in a six-digit number 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 Solve problems using knowledge of place value, including empty box questions and word problems **Reason** about numbers e.g. a number rounded to the nearest 1,000 is 45,000. What is the smallest/ largest number it could be?	Partition, Place value Digit, number Units/ones, Tens, Hundreds, Thousands Ten thousands, Hundred thousands Order Compare More than, greater than, less than, <, > Round

Number Negative Numbers & Roman Numerals **Week 2**	3 2	Interpret and use negative numbers in context, e.g. temperature or depth below sea level Count forwards and backwards in steps through zero to include positive and negative whole numbers, e.g. 4, 2, 0, -2, -4; 7, 3, -1, -5 (describe the term to term rule) 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 -1°C, 4°C, 0°C, -3°C, -5°C Begin to calculate intervals across zero, e.g. the temperature falls from 10° C to -2° C. How many degrees colder is it? (taken from Y6 programmes of study)- consider using a number line to support Consolidate reading Roman numerals I, V, X, L, C e.g. CIV = 104 Read and write Roman numerals to 500 (D) and 1,000 (M) e.g. DC= 600 Recognise some years written in Roman numerals, e.g. How do you write this year in Roman Numerals? How do you write the year of your birth in Roman numerals? The Battle of Hastings was in 1066 (MLXVI) Where do we see years written in Roman numerals?	Positive, negative (numbers) Temperature, interval, depth ° C, degrees Celsius Roman numerals I, V, X, L, C, D, M
Number Addition and Subtraction **Week 3**	5	Consolidate using the **formal written method of addition** to add two four-digit numbers, including decimal numbers in the context of money and measures **(See Written Calculation Policy, 2017)** Use rounding to estimate and check answers to calculations Consolidate the **formal written method of subtraction** to subtract two four-digit numbers, including decimal numbers in the context of money and measures **(See Written Calculation Policy, 2017)** Use rounding to estimate and check answers to calculations 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 1,428 km on Monday and 1,354km on Tuesday. How far does it travel altogether? How much further does it travel on Monday than on Tuesday?	Digit Thousands, hundreds, tens, ones/units Addition, plus, altogether, add, sum of, total, more than, increase Subtraction, subtract, minus, less than, decrease Round, estimate, check
Geometry Properties of Shape (2D) (including angles) **Week 4**	5	Consolidate acute, obtuse, reflex and right angles Know that angles on a straight line total 180º or half a turn; know that angles at a point total 360º or one whole turn Calculate missing angles on a straight line Measure angles using a protractor to the nearest 5 º and then extend to measuring to the nearest 1 º Know the properties of rectangles, i.e. all four angles are right angles, opposite sides are equal and parallel and the diagonals bisect one another; understand that a square is a regular rectangle; use conventional markings for parallel lines and right angles **Investigate** diagonals of other quadrilaterals, e.g. Which other quadrilaterals have diagonals that bisect each other (cut each other in half); which do not? Which quadrilaterals have perpendicular diagonals (meet at right angles); which do not?	Acute, obtuse, right angle, reflex Degrees º Half turn, Whole turn Protractor Quadrilateral, square, rectangle, parallelogram, rhombus, kite, trapezium, diagonal, bisect, perpendicular, parallel

Number Multiplication **Week 5**	5	Consolidate all mathematical vocabulary related to multiplication; use the term product e.g. What is the product of 12 and 5? Calculate mathematical statements for all multiplication tables up to 12 x 12; include multiplying by 0; solve missing number problems Recognise all square numbers up to 12 x 12 and the notation for square number (^{2}) e.g. $9^2 = 9 \times 9 = 81$ **(See Multiplication Tables Guidance, 2020)** Find **all** factor pairs of a given number Find all common factors of two given numbers Consolidate the **formal written method of short multiplication** to multiply a two or three digit-number by a single digit number Introduce **long multiplication** to multiply a two-digit number by a two-digit number **(See Written Calculation Policy, 2017)** Solve word problems, which involve short and long multiplication e.g. There are 325 paper clips in a box. How many paper clips are there in six boxes? There are 26 chairs in a row. There are 18 rows of chairs. How many chairs are there altogether?	Multiply, multiplication, times, product Square numbers, (^{2}) Factor, factor pair, common factors Formal method of short multiplication, long multiplication
Number Division **Week 6**	5	Consolidate all mathematical vocabulary related to division; introduce the terms **divisor, dividend, quotient** e.g. In this calculation, what is the divisor, the dividend and the quotient? 56 ÷ 7 = 8 Consolidate tests of divisibility by 2, 3, 4, 5, 9, 10 ,100 Introduce **prime numbers**; know that a prime number has only two factors, itself and 1; identify prime numbers up to 19 using knowledge of multiples and factors; extend by finding prime numbers greater than 19 Consolidate the **formal method of short division** to divide a two- digit number or a three-digit number by a single-digit number with whole number answers or with remainders Express the remainder as a fraction, (the remainder divided by the divisor) **(See Written Calculation Policy, 2017)** Solve word problems, which involve division with remainders, using the **formal written method of short division**; interpret remainders in context using rounding or fractions e.g. Four children share 67 apples equally. How many do they get each? (remainder as a fraction) 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)	Divide, division, divisor, dividend, quotient, prime number, factor, multiple Formal written method Formal layout $\overline{)}$ Remainder, fraction, round up, round down

Number Fractions **Week 7**	5	Consolidate mixed numbers and improper fractions using diagrams to support; convert from one form to the other Recognise patterns in equivalent fractions (consider using a times table grid to support), e.g.1/3 = 2/6 = 3/9 = 4/12 Convert a pair of fractions to make fractions with a **common denominator**, e.g. 1/2 and 3/4 converts to 2/4 and 3/4; 3/10 and 4/5 converts to 3/10 and 8/10 Find unit and non-unit fractions of whole number quantities; relate to multiplication and division e.g. 1/5 of 40 cm; 3/5 of 40cm; 1/3 of £150; 2/3 of £150 Add and subtract fractions with the same denominator or denominators that are multiples of the same number, supported by materials and diagrams e.g. 2/3 + 2/3 = 4/3 = 1⅓ ; 3/4 - 1/2 = 3/4 - 2/4 = 1/ 4; 3/5 + 3/15 = 9/15 + 3/15 = 12/15; **Multiply** proper fractions by whole numbers supported by materials and diagrams, e.g. 1/3 x 2 = 2/3; 2/3 x 2 = 4/3 = 1⅓ ; 2/5 x 3 = 6/5 = 1 1/5 Solve word problems using addition, subtraction and multiplication of fractions, using the above	Whole Numerator, denominator, mixed number, improper fraction, unit fraction, non-unit fraction common denominator, equivalent fraction, simplify
Number Fractions, Decimals & Percentages **Week 8**	3 2	Consolidate understanding of decimal numbers (with one and two decimal places) and convert decimal numbers to fractions e.g. 0.25 = 1/4; 0.5 = 1/2; 0.75 = 3/4; 0.1 = 1/10; 2/10 = 0.2; 1/100 = 0.01; 0.71 = 71/100 (consider using 100 square and/or a calculator to support) Round decimal numbers with two decimal places to the nearest whole number (and then extend rounding to one decimal place) Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents e.g. 245/1000 = 0.245; relate to mass and capacity Recognise the place value of each digit in decimal numbers with up to three decimal places Order a set of decimal numbers with up to three decimal places e.g. 0.35, 0.4, 0.125, 0.04 Consolidate understanding of **per cent** as number of parts per hundred and record fraction and decimal equivalents of 1%, 10%, 20%, 25%, 50% Solve problems and reason using knowledge of percentage and fraction equivalents e.g. There are 68 questions in a test. I get 50% of them right. How many questions do I get right? How many questions do I get wrong? The coat I want to buy usually sells for £80. In the sale it has a reduction of 10%. How much is the coat now? How did you work it out? Would you rather have 25% of £200 or 10% of £450?	decimal place, tenth, hundredth, thousandth, equivalent, round per cent, %

Measurement Length, Perimeter**,** Area, Volume **Week 9**	5	Consolidate understanding of kilometres (km), metres (m), centimetres (cm) and millimetres (mm) as units of length/height and the relationship between units; use decimal notation for length/height; convert between units of length/height e.g. 4m = 400cm; 625 cm = 6.25m; 100mm = 10cm; 1,000mm =1m; 2km = 2,000m; 2.5 km = 2,500 m Consolidate understanding of **perimeter** and express the formula for finding the perimeter of a rectangle in words; calculate the perimeter of rectilinear shapes where the lengths of the sides are given 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? Calculate the perimeter of **composite rectilinear shapes**, where the lengths of the sides are given, using cm and/or m; extend by including examples where the length of some of the sides are not given Consolidate understanding of **area** and relate finding area to arrays and to multiplication Calculate the area of rectangles, using the formula in words, using standard units for square centimetres (cm²) and square metres (m^2) e.g. 7m x 6m = 42m² Investigate using area and perimeter, e.g. Draw a rectangle with a perimeter of 24cm. Is there more than one way to do this? What are the length of the sides of the rectangle with the largest area? Recognise some **common imperial units** of length still in use today (miles, feet, inches) and begin to use approximate equivalence between metric and imperial units	Length, height, distance, metre (m), centimetre (cm), millimetre (mm), kilometre (km) Perimeter Area Square centimetres, cm², square metres, m^2 Imperial units of measurement, miles, feet, inches
Statistics **Week 10**	5	Solve comparison, sum and difference problems using information presented in a **line graph** e.g. Examine a line graph showing the number of people at the zoo on the hour every hour during the day. How many people were in the zoo at 10 am? How many more people had arrived by 11 am? What was the busiest time at the zoo? What was the least busy time at the zoo? Why do you think this time was least busy? What is the difference in number of people between the busiest and least busy part of the day? Read a **range of scales** on the axes of different graphs (for example line graphs and bar charts); answer questions about data presented in these graphs Complete, read and interpret information in tables; ask and answer questions about the data in the table Follow a line of enquiry by collecting data in a table or a tally chart. Using the information in the table or tally, decide the best way to represent it - in a line graph, bar chart or pictogram and explain their decision **(Possible link to Science curriculum)**	Line graph, continuous data, bar chart, discrete data, axis, scale, table, tally

Number Addition and Subtraction (Mental Methods and problem solving) **Week 11**	5	Add/subtract whole numbers and decimals **mentally**, using jottings such as empty number lines, for example: finding a small difference for subtraction; reordering when adding several numbers; using number lines and partitioning to add/subtract; adding/subtracting 999 by adding/subtracting1,000 and adjusting **(See Mental Calculation Strategies, 2017)** Solve addition and subtraction word problems using **mental methods** with jottings, deciding which operations and mental 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 2022? What is the total of 80,175, 400 and 120? The car park has spaces for 2,000 cars. There are 1,898 cars in the car park now. How many more cars can fit in? Last week there was a house for sale in my road for £455,000. This week it has increased in value by £1,500. What is the price of the house now? Solve a mathematical problem by working systematically and recording results in a clear and organised way- consider the problems **'**Three digits' and 'Nadia's new number plate' **(See mathematical Challenges for all pupils, 2016)**	Digit Thousands, hundreds, tens, ones/units Addition, plus, altogether add, sum of, total, increase, more than Subtraction, subtract, minus, difference (between), decrease, less than Empty number line Calculate, calculation Problem, solution
Number Written Calculation methods **Week 12**	5	Consolidate formal written methods for addition, subtraction, multiplication and division **(See Written Calculation Policy, 2017)** Solve one-step, two-step and multi-step word problems e.g. A coach travels 2,429 km on Saturday and 1,852km on Sunday. How far does it travel altogether? How much further does it travel on Sunday than on Saturday? There are 36 seats in each row in the theatre. There are 15 rows of seats. How many seats are there altogether? If 368 people arrive at the theatre, how many empty seats will there be? **Reason** about addition/subtraction e.g. Two four-digit whole numbers total 14,843. What numbers could they be? Convince me! **Reason** about multiplication/division e.g. how would you use this fact, 56 ÷ 7 = 8, to solve 112 ÷ 7 Explain how you worked it out	Relevant vocabulary relating to addition, subtraction, multiplication and division from earlier in the term

Additional weeks

To be used for:

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