Oral mental starters (ongoing, throughout the term):

- Identify multiples and count from (and back to) 0 in multiples of 3, 4, 6, 7, 8, 9, 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)
- Find **all** factor pairs of a given number; find all common factors for a pair of numbers
- Multiply and divide numbers mentally using known facts and a range of strategies **(See Mental calculation strategies, 2017)**
- Multiply numbers with up to two decimal places by 10, 100 and 1000 and divide corresponding numbers by 10, by 100 and by 1000
- Subtract larger numbers mentally by finding the difference (small differences), e.g. 8,004 – 6999 = 1,005 (consider empty number lines)
- Find doubles of numbers up to five digits (using knowledge of partitioning and place value) and find corresponding halves
- Count forwards and backwards with positive and negative whole numbers, including through zero; calculate intervals across zero (in context)
- Recognise, describe and extend linear number sequences, including those involving decimals, e.g. 0.7, 1.4, 2.1 ; find the term to term rule
- Compare and order fractions, decimals and percentages (using diagrams and resources to support)
- Name and write equivalent fractions of a given number, including tenths and hundredths (support understanding by using materials and diagrams)
- Recognise and use square numbers (up to 12 x 12) and the notation e.g. $9^2 = 81$
- Find percentages of whole number quantities using known fraction equivalences e.g. 10% of £84; 20% of 80; 50% of £248
- Know and use the vocabulary of prime numbers and begin to establish whether a number up to 100 is a prime number
- Read and write Roman numerals to at least 1000 (M)
- Count forwards and backwards in steps of powers of 10 (10,100,1000,10,000) from any given number

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 a **million**; recognise 1,000,000 as one million. Order and compare numbers within 1,000,000 Round numbers up to 1,000,000 to the nearest 10, 100, 1000, 10,000 and 100,000 Determine 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, if necessary Use knowledge of place value to solve number problems by adding and subtracting 10, 100, 1000, 10,000 to any number up to 1,000,000 e.g. I am buying a new flat. It was for sale for £315,000 but the price has gone up by £1,000. How much does it cost now? Last year it was £10,000 cheaper. How much was it then? **Reason** about numbers and place value e.g. a number rounded to the nearest 10,000 is 120,000. What's the smallest number it could be? What's the largest number it could be?	Partition, Place Value Digit, number Units/ones, Tens, Hundreds, Thousands, Ten thousands, Hundred thousands, (one million) Order Compare More than, Less than, <, > Round

Number Decimals/ place value & Addition/ Subtraction **Week 2**	2 3	Read and write numbers with up to three decimal places Order and compare numbers with up to three decimal places (including in the context of measures) Round decimal numbers with one or two decimal places to the nearest whole number Round decimal numbers with two decimal places to one decimal place Determine the place value of each digit in a decimal number with up to three decimal places Partition decimal numbers with up to three decimal places; use place value cards and charts to support, if necessary Consolidate using the **formal written method of addition** to add two four-digit or five-digit numbers and decimal numbers (with up to three-decimal places), including in the context of money and measures Consolidate the **formal written method of subtraction** to subtract two four-digit or five-digit numbers and decimal numbers (with up to three decimal places), including in the context of money and measures **(See Written Calculation Policy, 2017)** Solve addition and subtraction two-step and multi-step word problems (including money and measures problems, with up to 3 decimal places), deciding which operations to use; use rounding and inverse operations to estimate and check answers to calculations	Partition, Place value Digit, number, decimal, tenth, hundredth, thousandths Order, compare More than, greater than, less than, <, > Round Inverse operations Addition Subtraction Estimate, check, inverse, round
Measurement Length, perimeter, area and volume **Week 3**	5	Convert between different metric units of length, using knowledge of place value, multiplication and division- consider as mental/oral activities Estimate and measure **length/height/width** using appropriate units and equipment, including mixed units of measurement, and record using decimal notation, in practical contexts; measure and draw lines to the nearest Follow a line of enquiry related to length e.g. True or false? Your height is equal to 3x the circumference of your head. How will you find out? Consolidate understanding of **perimete**r and express the formula for finding the perimeter of a rectangle in words (and then letters); calculate the perimeter of rectilinear shapes and of composite rectilinear shapes; solve perimeter problems with missing measurements Consolidate understanding of **area** and relate finding area to arrays and to multiplication Find the area of rectangles using the formula in words (and then letters), using the notation for square centimetres (cm^2) and square metres (m^2); estimate the area of irregular shapes by counting squares **Reason** about area and perimeter e.g. draw a rectangle with an area of 36 cm^2 and a perimeter of 26cm. Can you find other rectangles with the same area? Consolidate understanding of **volume**; **begin** to estimate and calculate the volume of cubes and cuboids using standard units of cm^3 **(taken from Y6 Programmes of Study)**	Length, height, width, distance km, kilometre m, metre cm, centimetre mm, millimetre Perimeter Area Square centimetres, cm^2, square metres, m^2 Volume, cuboids Cubic centimetres, cm^3

Geometry Properties of Shape (2D & 3D) **Week 4**	3 2	Identify 3D shapes, including cubes and other cuboids, from 2D representations; describe the properties of 3D shapes using vocabulary from previous years; extend with 'pairs of parallel faces' Distinguish between regular and irregular polygons based on reasoning about equal sides and angles Identify **all** quadrilaterals and describe their properties, including regular/ irregular, symmetrical, pairs of parallel sides, types of angles; use conventional marking for parallel lines and right angles Solve problems/ reason about shapes e.g. Given the diagonals of a quadrilateral, draw the sides and identify the shape What's the same about a trapezium and a parallelogram? What's different about them? A cuboid is a prism. True or false? Convince me! Measure given angles to the nearest degree using a protractor Know that angles on a straight line and half a turn total 180°; know that angles at a point and a whole turn total 360°; use this knowledge to find missing angles on a line and at a point	Relevant vocabulary from previous terms/ years including **all** quadrilaterals, polygons, regular, irregular, parallel, pairs of parallel faces/sides Degrees (°) Protractor
Number Multiplication **Week 5**	2 3	Recognise and use **square numbers** up to 12 x 12 and the notation for squared number (^{2}) Introduce **cube numbers** and the notation e.g. $2^3 = 2 \times 2 \times 2 = 8$; relate to volume and cm^3 Use the formal written method of **short multiplication** to multiply a two-digit number, a three digit-number or a four- digit number by a single digit number **(See Calculation Policy)** Consolidate the formal written method of **long multiplication** to multiply a two-digit number by a two-digit number; extend with multiplication of a three digit number by a two-digit number **(See Written Calculation Policy, 2017)** Solve word problems, which involve short and long multiplication e.g. How many hours are there in 8 weeks? There are 245 paper clips in a box. I buy 6 boxes. How many paper clips do I have? Tom is 15 years old today. How many months has he been alive? At the cinema there are 36 seats in a row and 28 rows. How many seats are there altogether? Notebooks cost £4.75 each. I buy 28 notebooks for my class. How much do I spend?	Square numbers (^{2}) Cube numbers (^{3}) Multiply, multiplication, times, product Thousands, hundreds, tens, ones/units, digit Formal method of short multiplication Formal method of long multiplication

Number Division **Week 6**	2 3	Know and apply tests of divisibility by 2, 3, 4, 5 , 9, 10, 100 -consider as mental/oral starters Consolidate understanding of **prime numbers**; recall prime numbers up to 19; begin to establish whether a number up to 100 is prime, using knowledge of multiplication and division facts, factors and multiples; use the vocabulary of prime numbers, prime factors and introduce **composite (non-prime) numbers** Use the **formal method of short division** to divide numbers with up to four- digits by a single digit number with whole number answers or with remainders, including expressing the remainder as a fraction **(See Written Calculation Policy, 2017**) Solve word problems, which involve short division, with and without remainders; interpret remainders appropriately for the context e.g. For every 7 tokens I collect I can get a free book. I collect 156 tokens. How many books can I get? (round down) I collect 110 eggs from my hens. If I put them into boxes of six, how many boxes will I need? (round up)	Prime number, composite number, prime factor Divide, division, divisor, dividend, quotient Short division Formal layout) Round up/down, remainder
Number Fractions, decimals and percentages **Week 7**	5	Consolidate understanding of mixed numbers and improper fractions and convert from one form to the other Identify equivalent fractions of a given fraction using knowledge of multiplication and factors Find unit and non-unit fractions of whole number quantities e.g. 1/6 of 420; 5/6 of 72; relate to multiplication and division Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams e.g. 1/5 x 3 = 3/5; 2/5 x 4 = 8/5 (the answer can also be expressed as a mixed number); 1¼ x 3 = 3 ¾ ; 2¾ x 3 = 8 ¼ Solve problems and reason about fractions e.g. Would you rather have 5/6 of £42 or 4/5 of £45? Know decimal and percentage equivalents of 1/2, 1/4, 3/4, 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 (1/10, 2/10, 3/10 …) Compare simple decimal, fraction and percentage equivalents, e.g. Which is greater 25% or 1/5? 0.8 or 3/4? How do you know? Use materials and diagrams to support Find percentages of whole number quantities using known fraction equivalences e.g. 10% of 45 = 4.5; 20% of 80 = 16; 50% of £184 = £92 Solve word problems which involve percentages e.g. There are 80 children in the playground. 20% of them are girls. How many girls and how many boys are there?	Whole Unit fraction, non-unit fraction Numerator, denominator Equivalent fractions, mixed number, improper fraction Decimal, percentage, %, equivalence
		Convert between 12 hour digital clocks and 24 hour digital clocks e.g. What time on the 12 hour clock	All relevant vocabulary from

Measurement Units of measurement **Week 8**	2 3	is 19:55? What time on the 24 hour clock is 8:20 pm? Convert between units of time e.g. how many seconds in five minutes? How many seconds in an hour? How many days are there in 12 weeks? How many months (and days) have you been alive? How many days are there in the first four months of this year altogether? How many hours in 5 days? How many hours in a week? Make estimates of measurements (length, mass and capacity) choosing suitable units of measure e.g. Approximately how tall am I? What is the capacity of my flask? How much does one tea-bag weigh? Convert between different units of metric measures, using decimal notation, when appropriate e.g. I am 158cm tall. How many metres is this? What is 1.255 km expressed as metres? How many ml in a 2.5 jug of juice? My dog weighs 4.25 kg. How much does he weigh in grams? Understand and use **approximate** equivalences between metric units and **common imperial units**, such as feet and inches, pounds and pints; establish where we still see/ use imperial units e.g. a pint of milk, inches on some rulers, my new baby weighs about 7 pounds	previous years relating to measures (including time) Convert Units of measurement Decimal notation Metric measures, imperial measures
Geometry Position and Direction & **Statistics** **Week 9**	2 3	Consolidate describing positions on a 2D grid as **co-ordinates in the first quadrant**; plot specified points and draw sides to complete a given polygon Extend by introducing the **second quadrant** and the use of negative numbers to plot points and to draw sides to complete a given polygon Use co-ordinates to describe reflections and translations of polygons Use information presented in **timetables** using 12 hour digital time and 24 hour digital time Complete, read and interpret information in timetables Solve problems by interpreting timetables e.g. bus or train times Use information presented in **line graphs** (including time graphs) with a wide range of scales; interpret line graphs including solving sum and difference problems; understand that line graphs are used to present **continuous data** Use information presented in **bar charts** with a wide range of scales; interpret bar charts including solving sum and difference problems; understand that bar charts are used to present **discrete data** Interpret a straight line graph showing conversion from km to miles and answer related questions **(taken from Y6 Programme of Study)** Follow a line of enquiry by collecting and presenting data; decide which representations of data are most appropriate and why	Co-ordinates, first quadrant, second quadrant, negative numbers Timetable, 12 hour/ 24 hour digital time Line graphs, time graphs, bar charts, data
Number		Find **all** factor pairs of a given number; find all common factors of two numbers e.g. the common factors of 36 and 42 are 2, 3, 4, 6 and 8	Factors, factor pair, common factors

Multiplication and division (mental methods) **Week 10**	5	Multiply and divide numbers **mentally** using a range of strategies, drawing upon known facts, knowledge of place value, inverse operations, knowledge of factors and multiples e.g. Use inverse operations, place value and the known fact 7 x 8 = 56 to calculate: 56 ÷ 8 ; 70 x 8; 560 ÷ 70; 0.8 x 7; 80 x 70; 560 ÷ 8…… Partition and use the distributive law to calculate 47 x 5 = (40 x 5) + (7 x 5) = 200 + 35 = 235 Use partitioning to calculate 98 ÷ 7 = (70 + 28) ÷ 7 = 10 + 4 = 14 **(See Mental calculation Strategies, 2017)** Understand the meaning of the = sign to indicate equivalence, including missing number problems e.g. 54 ÷ 9 = □ ÷ 7 ; 8 x □ = 4 x 12 Consider the problem **'**Adam's Apples' **(See Mathematical challenges for all pupils, 2016)**	Multiply, multiplication, product Divide, division, divisor, dividend, quotient Inverse operation Partition Equivalence, equivalent Problem, solution
Number Addition and subtraction (mental methods) & Problem solving (all operations) **Week 11**		Add/subtract larger numbers and decimals **mentally**, using jottings (such as empty number lines) where necessary, for example: Use partitioning and jottings to add two numbers together e.g. 8,465 + 3,328 Find sums and differences of decimals using an empty number line e.g. 8.5 + 2.8; 17.8 – 1.4 Add 999 by adding 1,000 and adjusting; subtract 999 by subtracting 1,000 and adjusting Find a **small difference** between near multiples of 1,000 by counting on using an empty number line e.g. 8,006 – 6,997 Solve two-step or multi-step word problem involving addition, subtraction, multiplication and division; use **mental methods** with jottings or **formal written methods**; decide which operations and methods to use; use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy e.g. I moved into my house in April 1998. How many years have I lived in this house? What will the year be when I have lived there for 25 years? There are 7,546 people at the theme park. 998 more people arrive. How many are there now? What if 1,001 people leave- how many will be left in the theme park? I buy a punnet of strawberries that cost £2.99 and a tray of peaches that cost £3.99. How much do I spend? How much change do I get from a ten pound note? I buy three trays of peaches and two punnets of strawberries. How much change will I get from £20? How many trays of peaches could I buy with £30? How much change would I get? Consider the problem 'Peter's Primes'**(See Mathematical challenges for all pupils, 2016)**	Addition, total, sum Subtraction, difference Calculate, calculation Operation, method
Measurement		Solve problems involving length, mass, capacity, e.g. A bottle of salad dressing holds 399ml. A tablespoon holds 15ml. How many tablespoons of dressing	Weight, mass, measure Kilograms, kg, grams, g

Length, Mass and Capacity **Week 12**	5	are in the bottle? I have a piece of rope 2.5 metres long. I cut off 65 cm. How much is left? There is 2.2kg of flour in a bag. How much flour is in 10 bags? If I use 500g of flour from a bag, how much will be left? A full bucket holds 5 ½ litres of water. A jug holds 500ml of water. How many jugs full of water will fill the bucket? Solve integer scaling problems e.g. Change this recipe for 4 people to a recipe for 12 people, for 6 people… (in preparation for ratio in Year 6)	Capacity, measure Litre, l, millilitre, ml Length, height, distance, km, kilometres, cm, centimetre, m, metre, mm, millimetre Problem, solution Investigate, investigation

Additional weeks

To be used for:

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