Medium Term Plans for Mathematics (revised 2020) - Year Three (Summer Term)

Oral mental starters (ongoing, throughout the term):

- Count forwards and back in multiples of 2, 3, 4, 5, 8,10, 50 and 100 up to the 12th multiple
- Count on and back in 10s or 100s from any number within 1,000
- Recall and use multiplication and division facts for the 2, 3, 4, 5, 8 and 10 times tables up to the 12th multiple **(See Multiplication Tables Guidance, 2020)**
- Recall and use addition and subtraction facts for multiples of 100 to 1000 (e.g. 700 + 300 = 1000, 1000 – 300 = 700)
- Find ten more or one hundred more/less than a given number up to 1,000
- Read and write, order and compare numbers up to 1,000 in numerals and words
- Find doubles of all two-digit numbers and the corresponding halves
- Mentally add and subtract three-digit numbers and ones, tens **or** hundreds up to 1,000 e.g. 786 + 8; 542 – 50; 495 + 300
- Mentally add and subtract two numbers using a range of strategies and jottings to support **(See Mental Calculation Strategies, 2017)**
- Count in steps of halves, quarters or tenths, forwards and backwards
- Begin to relate tenths to decimal equivalents (1/10 = 0·1, 2/10 = 0·2, 3/10 = 0·3 …); count forwards and backwards in steps of 0.1 (Y4 objective)
- Find compliments of one whole using fractions with the same denominator e.g. 1/4 and 3/4 = 1; 7/10 and 3/10 =1

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, write, compare and order numbers to at least 1,000; recognise 1,000 as one thousand Read and write numbers in words and match them to corresponding numerals to 1,000 Given a number, identify the number that is 10 or 100 more or less within 1,000 (begin to bridge 1,000); identify the number that comes between two numbers within 1,000 Represent three-digit numbers using different representations, such as an empty number line; using place value cards; using Dienes; on an abacus Recognise the place value of each digit in a three-digit number (hundreds, tens and units/ones) and use this to solve empty box questions Partition numbers into hundreds, tens and units/ones **and** in different ways e.g. 756 = 700 + 50 + 6; 756 = 700 + 40 + 16: 756 = 600 + 150 + 6 **Reason** about numbers e.g. If you wrote these numbers in order starting with the largest, which number would be third? 850, 805, 385, 358, 508. Explain how you ordered these numbers	Order Partition, place value Digit, numeral, number Hundreds, tens, ones/units Thousand More than, greater than, less than < and > signs Reason

Number Addition **Week 2**	2	Add mentally a three-digit number and ones, a three-digit number and tens and a three-digit number and hundreds, using jottings to support e.g. an empty number line Add 99 by adding 100 to a three digit number and adjusting, using jottings to support e.g. an empty number line **(See Mental Calculation Strategies, 2017)** Solve word problems using the above mental methods of addition	Digit Hundreds, tens, ones/units Add, sum, total, addition, plus, altogether
	3	Use the **formal written method of addition** with two-digit numbers, initially where it is not necessary to bridge (‘carry’), and then where it is necessary to ‘carry’ ten from the units to the tens column**;** use base ten materials to support understanding Extend with addition of a three-digit number and a two-digit number and addition of two three-digit numbers; use base ten materials to support understanding **(See Written Calculation Policy, 2017)** Estimate answers to calculations Solve one-step and two- step word problems, involving addition using the formal written method	Column, carry Formal written method Estimate Calculate, calculation
Number Subtraction **Week 3**	2	Subtract mentally a three-digit number and ones, a three-digit number and tens and a three-digit number and hundreds, using jottings to support e.g. an empty number line Subtract 99 by subtracting 100 and adjusting, using jottings to support e.g. an empty number line **(See Mental Calculation Strategies, 2017)** Solve word problems using the above mental methods of subtraction	Digit Hundreds, tens, ones/units Subtract, minus, take away Subtraction
	3	Use the **formal written method of subtraction** with two-digit numbers**,** initially where it is not necessary to exchange and then examples where exchange is required; use base ten material to support understanding Extend with subtraction of a two-digit number from a three-digit number and a subtraction of two three-digit numbers; use base ten materials to support understanding **(See Written Calculation Policy, 2017)**; Estimate answers to calculations; use **inverse** operations to check answers Solve one-step and two- step word problems, involving addition and subtraction, using the formal written methods e.g. There are 125 cars on ground floor of the car park and 236 cars on the first floor of the car park. If 45 cars leave, how many cars are there in the car park now?	Column, exchange Formal written method Estimate Inverse Calculate, calculation

Geometry Properties of shape (2-D shapes) **Week 4**	5	Consolidate the understanding that angles can be a property of a shape or a description of a turn Consolidate work on right angles; reinforce the facts that two right angles make a half turn, three make three quarters of a turn and four make a complete turn Identify whether angles are greater or less than a right angle introducing the terms **acute** and **obtuse** to describe the angles Identify **horizontal** and **vertical** lines and **pairs of perpendicular and parallel lines** using known polygons Identify line symmetry in 2-D shapes; recognise whether a shape is symmetrical or non-symmetrical Describe the properties of 2-D shapes using accurate language e.g. the number of sides, lengths of sides, obtuse/acute/right angles, pairs of parallel sides, and whether a shape is symmetrical or non-symmetrical **Reason** about shape e.g. True or false? The only polygons which have right angles are rectangles. Explain your decision Solve problems involving shapes; consider the problem 'Polly's Polygons' **(See Mathematical Challenges for all pupils booklet, 2016)**	All vocabulary from previous terms including: polygon, right angle, whole, quarter and half turns Symmetrical, non-symmetrical, < and >, horizontal, vertical Extend with: acute, obtuse, perpendicular, parallel Reason Problem, solution
Number Multiplication and Division **Week 5**	5	Recall and use multiplication and division facts for the 2, 3, 4, 5, 8 and 10 times tables to the 12th multiple -consider as mental/oral activities **(See Multiplication Tables Guidance, 2020)** Derive multiplication and division facts for multiples of ten times a one-digit number, using mental methods e.g. 3 x 2 = 6; 30 x 2 = 60; 3 x 20 = 60 Use the **expanded short method of multiplication** to multiply a teen number by a one-digit number e.g. 18 x 5 Extend with the **formal written method of multiplication** to multiply a teen- number by a one-digit number Consolidate the **formal layout for division** using known times tables e.g. 32 divided by 4; include examples that involve remainders e.g.33 divided by 4 **(See Written Calculation Policy, 2017)** Solve problems, which involve multiplication or division, including examples that involve remainders Solve problems involving **positive integer scaling** e.g. My sunflower is 15cm tall. My friend's sunflower is four times as tall. How tall is my friend's sunflower?	Multiply, multiplication, times Partition, tens, ones/units Expanded method Formal written method Divide, division Remainder Formal layout) Scaling

Number Fractions **Week 6**	5	Introduce eighths (and notation 1/8) and relate to halves and quarters, using diagrams and fraction walls to support**;** introduce sixths (and notation 1/6) and relate to thirds, using diagrams and fraction walls to support Compare unit fractions using < and> e.g. 1/8 > 1/10, and non-unit fractions with the same denominators e.g. 3/5 < 4/5, using diagrams including a fraction wall to support Order a set of unit fractions; order a set of non-unit fractions with the same denominator; recognise fractions as ordered numbers and place on an empty number line (0 - 1) Recognise and show **simple** equivalent fractions, using diagrams including fraction walls to support e.g. 2/8 = 1/4; 4/8 =1/2; 2/6 = 1/3; 5/10 = 1/2 Find unit and non-unit fractions of a number or a quantity e.g. 1/5 of 40 cherries = 8 cherries; 2/5 of 40 = 16; link to division, using diagrams and resources to support Consolidate addition and subtraction of fractions with the same denominator, within one Solve problems involving fractions e.g. I have 30 small cakes. I eat 1/5 of these cakes. How many cakes are left? **Reason** about fractions e.g. Would you rather have 2/3 of £18 or 1/5 of £50? Why?	Half, third, quarter, fifth, sixth, eighth, tenth 1/2, 1/3, 1/4, 1/5, 1/6, 1/8, 1/10 Whole Divide, part, equal parts Numerator, denominator Equivalent fractions Compare,< >, order Problem, solution Reason
Measurement Time **Week 7**	5	Consolidate the numbers of days in a year (including a leap year), number of days in each month; the number of seconds in a minute, minutes in an hour and hours in a day Solve problems using units of time e.g. How many seconds in half a minute? How many minutes in three hours? How many hours in four days? My journey takes one and a half hours- how many minutes is this? How many days in two years? How many days altogether in the months beginning with M? Consolidate telling the time using analogue clocks (including clocks with Roman numerals) and 12 hour digital clocks to the **nearest five minutes**; convert between analogue and 12 hour digital time; continue to use noon/midday, midnight, a.m. and p.m. Write and tell the time to the **nearest one minute** using an analogue clock and 12 hour digital clock; convert between analogue and 12 hour digital time Solve word problems involving time e.g. My favourite TV programme starts at 4:25pm and lasts half an hour. What time does it finish? NB Use daily routines to support the learning of telling the time	Hours, minutes seconds, day Year, leap year, month Analogue clock, 12 hour digital clock O'clock, half past, quarter past, quarter to, five to, five past… a.m. p.m. noon, midday, midnight

Measurement Length and Perimeter **Week 8**	3 2	Consolidate understanding of metres (m), centimetres (cm) and millimetres (mm) as units of measurement and the relationship between units Know that: 10mm = 1cm; 100cm = 1m; 1,000mm = 1m Measure using appropriate units and equipment, including mixed units of measurement, in practical contexts Begin to use decimal notation for length e.g. 145cm = 1m 45cm = 1.45m **(from Y4 programmes of study)** Follow a simple line of enquiry relating to length e.g. My height measures the same as my reach. True or false? How will you find out? Consolidate understanding of the term **perimeter** Measure the perimeter of simple polygons using centimetres; measure perimeter using metres and mixed units of metres and centimetres e.g. the perimeter of the playground/classroom Solve problems involving perimeter e.g. Farmer Jean has 20m of fencing. She wants to make a rectangular pen for her pigs. Find all the possible solutions using the 20m of fencing	Length, measure, ruler, metre stick mm, cm, m Mixed units Decimal notation Perimeter, sides, total Distance all the way around Solution
Statistics Data Handling & **Measurement** Money **Week 9**	3 2	Use simple scales e.g. 2, 5 and 10 units per square, in bar charts with increasing accuracy Use information presented in scaled bar charts, pictograms (where one symbol represents 2, 5 or 10), tallies and tables to solve and pose one and two-step questions e.g. How many altogether? How many more? Follow a line of enquiry e.g. conduct a traffic survey to find out the most common colour of cars; collect and present data; answer questions about the data Classify, group, sort, compare and present data using sorting diagrams e.g. Venn and Carroll diagrams (possible link to the Science curriculum and/or other areas of the maths curriculum) Consolidate pounds and pence and the relationship between them (£1 = 100p; £2 = 200p…) Use decimal notation to record money e.g. 105p = £1.05; 255p = £2.55 **(from Y4 programme of study)** Add and subtract money within £10, including problems involving change e.g. I buy a sandwich for £2.50 and a drink for £2. How much do I spend? How much change will I get from £5? Which coins could I use if I pay for a comic costing £1.45?	Table, tally chart, bar chart, pictogram Data Scale, interval Sort, compare, classify, group Venn diagram, Carroll diagram Money, pound (£), pence (p), change Decimal notation

Number Addition & Subtraction **Week 10**	5	Use the **formal written method of addition** with 'carrying' to add two two-digit numbers; a three-digit number and a two-digit number ; two three-digit numbers Use the **formal written method of subtraction** with exchange to subtract two two-digit numbers; a two-digit number from a three-digit number; two three-digit numbers **(See Written Calculation Policy, 2017)** Estimate answers to calculations, use inverse operations to check answers Solve one and two-step word problems involving addition and/or subtraction using the formal written methods**,** including examples set in the context of money and/or other measures e.g. I have a bag of fruit and nuts. The fruit weighs 98g and the nuts weigh 142 g. How much does the bag of fruit and nuts weigh altogether? If I eat 25g of the fruit and nuts, how much will I have left? **Reason** about addition and subtraction e.g. What digits could go in the empty boxes? 9☐ - 2☐ = 68; Is there more than one possible answer? How do you know that you have found all of the solutions? Is it always, sometimes or never true that the difference between two odd numbers is odd?	Digit, hundreds, tens, ones/units Calculate, calculation Formal written method/column method 'Carry', exchange Inverse Estimate Reason Difference Odd/even
Number Multiplication & Division **Week 11**	2 2 1	Recall and use multiplication and division facts for the 2, 3, 4, 5, 8 and 10 times tables; begin to recognise and use multiples of 6 -consider as mental/oral starters **(See Multiplication Tables Guidance, 2020)** Use knowledge of multiples to recognise and complete number sequences e.g. 300, 250, __, 150, 100, __,0 **Reason** about multiplication facts e.g. True or false? There are no numbers in the 3 times table that are also in the 4 times table; multiples of four are always even numbers Consolidate the formal written method of short multiplication to multiply a teen number by a single digit number; extend by multiplying other two-digit numbers by a one-digit number e.g. 24 x 5 Consolidate the formal written layout for division using known division facts, including examples with remainders **(See Written Calculation Policy, 2017)** Solve word problems, which involve multiplication and division e.g. There are 5 rows of chairs in the hall. There are 16 chairs in each row. How many chairs are in the hall altogether? I have 37 marbles which I share equally between myself and three friends. How many marbles will we get each? How many will be left over?	Multiples Multiply, multiplication, times Formal written method Divide, division Remainder Formal layout $\overline{)\quad}$ Problem, solution

Problem solving (all operations) **Week 12**	5	Solve one-step and two-step word problems involving addition, subtraction, multiplication, division and fractions, including in the context of money and other measures Estimate answers to calculations Solve missing number problems using knowledge of number facts, inverse operations and place value Solve **integer scaling problems** e.g. I ran 65 metres on Monday. On Tuesday I ran twice as far? How far did I run on Tuesday? How far did I run altogether? Last week my beanstalk was 8 cm tall. Now it's ten times as tall. How tall is it now? How much has it grown in one week? I have got £15. My brother has got three times as much as me. How much money has he got? How much more than me has he got? Solve simple **correspondence problems** e.g. The kiosk sells apples, sandwiches, cartons of juice and crisps. You can choose two different items. Which will you choose? How many different combinations are there? How do you that you have found them all? What if you could choose three items? Will there be more combinations or fewer combinations? NB encourage children to work systematically, make predictions and record results in an organised way	Estimate Inverse operations Problem, solution Integer scaling Systematic recording Combinations Predict

Additional weeks

To be used for:
- assessment, consolidation and responding to AfL
- additional using and applying activities