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

Oral mental starters (ongoing, throughout the term):

- Count forwards from 0, and backwards, in twos, fives and tens to the 12th multiple
- Recall multiplication and division facts for the 2, 5 and 10 times table, including x 0, up to the 12th multiple
- Count forwards from 0, and backwards, in threes to the 12th multiple **(See Multiplication Tables guidance, 2020)**
- Say the number that is 10 more/less than any number within 100, beginning to bridge 100 (refer to the 100 square/200 grid)
- Count on and back in 10s from any one or two digit number (refer to the 100 square) beginning to bridge 100 (refer to 200 grid)
- Count in fractions up to 10 e.g. ½, 1, 1 ½ , 2 …
- Recall all pairs of numbers with a total of 20 and all pairs of numbers within 20; give addition and subtraction facts for the pair of numbers
- Derive pairs of multiples of 10 with totals up to 100 and give related addition and subtraction facts (e.g. 60 + 40 = 100, 100 – 40 = 60)
- Add three one-digit numbers, using knowledge of number pairs e.g. 8 + 2 + 6 = 10 + 6 = 16
- Make estimates of quantities within 100 by grouping objects into 2s, 5s or 10s
- Recall/derive the doubles of multiples of 10 to 100 (e.g. double 50 is 100) and recall/derive the related halves (e.g. half of 100 is 50)
- Recognise odd/even numbers within 100
- Read the time to the nearest five minutes, including to the hour, the half hour and the quarter hour (past and to) using an analogue clock (use daily routines to support telling the time)

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 100 in numerals and words Given a number, identify the number that is 10 more or less within 100 (begin to bridge 100) Recognise the place value of each digit in a two-digit number to 100 including with the use of practical apparatus e.g. straws, cubes, ten sticks and ones/units, Dienes, Unifix, arrow/ place value cards Partition numbers into tens and ones/units and partition two-digit numbers in **different ways** (into different combinations of tens and ones/units) e.g. 54 = 50 + 4; 54 = 40 + 14; 54 = 30 + 24…(consider the use of base ten resources, such as Dienes, to support) Order a set of numbers between 0 and 100 and position them on a number line; complete a number line or 100 square with missing numbers; estimate missing numbers on a number line where not all numbers are given Compare two numbers from 0 to 100; use <, > and = signs Use place value to solve problems, including missing number problems e.g. 50 + □ = 54; □ + 8 = 78; 85 = □ + 5; 64 = □ + 14; 70 + □ = 86 **Reason** about numbers e.g. 95 > 59 True or false? How do you know?	Number, numerals Zero, one, two, three, four ……to one hundred Ten more, ten less Between, before, after Place value Digit, tens, ones/units Partition Order, compare Greater than (>) Less than (<)

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Number Multiplication and Division **Week 2**	4 1	Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including x 0; extend with 3 x table Represent multiplication and division using arrays and/or empty number lines using known multiples e.g. 2, 3, 5 and 10 Recall and use multiplication and division facts to calculate outside known facts, for children **'working at greater depth'** e.g. 14 x 5 (by partitioning 14) Show that multiplication of two numbers can be done in any order e.g. 3 x 5 = 15 and 5 x 3 = 15 (consider arrays to support understanding) Use the **inverse** relationship between multiplication and division to solve missing number problems e.g. 12 ÷ ☐ = 6; ☐ x 2 = 12 **(See Written Calculation Policy 2017, Mental Calculation Strategies 2017 and Multiplication Tables Guidance 2020)** Solve one-step word problems involving multiplication and division using informal written methods (including pictures, arrays and empty number lines) and signs x, ÷ and = **NB** include multiplication word problems with calculations outside known multiples (e.g.15 x 5) for children 'working at greater depth' Recognise **odd and even** numbers up to 100 and relate to multiples/groups of two- use resources to support understanding e.g. Numicon Sort odd and even numbers using simple Venn diagrams/sorting circles	Lots of, groups of, repeated addition, times, multiply, multiplied by, multiplication, x, array, row, column Empty number line, count forwards Multiple Share, groups of, divide, divided by, shared equally, repeated subtraction, ÷, count backwards Inverse Odd/even numbers Venn diagram
Number Fractions **Week 3**	5	Consolidate recognising, naming and writing fractions 1/2, 1/3, 1/4, 2/4 and 3/4 using words and fraction notation Find 1/2, 1/3, 1/4, 2/4 and 3/4 of familiar shapes and know that all parts must be equal parts of the whole shape Recognise the equivalence of 1/2 and 2/4, using diagrams to support Find 1/2, 1/3, 1/4 and 3/4 of lengths, sets of objects or quantities using pictures and diagrams to support (connect unit fractions to equal sharing, division and arrays) Solve word problems, which involve fractions, using concrete objects and/or pictorial representations to support e.g. I have £8. I give one quarter of my money to my brother. How much do I give him? How much do I have left? There are 12 bananas in a bunch. I give 1/3 of them to my friend. How many bananas does he have and how many do I have? **Reason** about fractions e.g. would you rather have half of 24 sweets or quarter of 40 sweets? Would you rather have 1/3 of 15 bananas or 3/4 of 12 bananas? Why?	Fraction Half, one quarter, two quarters, three quarters, one third, whole 1/2, 1/4, 2/4, 3/4, 1/3

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Number Addition & Subtraction **Week 4**	5	Recall and use all pairs of numbers with a total of 20 and all pairs of numbers within 20; give addition **and** subtraction facts Derive pairs of multiples of 10 with totals up to 100, using place value and knowledge of number pairs that total ten; give addition and subtraction facts Recognise the **inverse** relationship between addition and subtraction; show that addition of two numbers can be done in any order e.g. 60 + 40 = 100; 40 + 60 = 100; 100 – 40 = 60; 100 – 60 = 40 Solve missing number problems using known facts e.g. 70 + ☐ = 100 Add any two two-digit numbers with the use of jottings such as an empty number line or partitioning**;** consider the use of a 100 square to support Subtract any two two-digit numbers within 100, using jottings such as an empty number line or partitioning; consider the use of a 100 square to support **(See Written Calculation Policy, 2017 and Mental Calculation Strategies, 2017)** Use estimation to check that answers are reasonable e.g. know that 34 + 25 = 58 is incorrect because 4 + 5 = 9; 60 + 50 > 100 because 50 + 50 =100	Addition,+, add, plus, more, put together, altogether, total, sum of, =, equals, is the same as Empty number line, count on Subtraction,- , take away, subtract, minus, count back How many are left? Inverse Estimate, estimation
Number Addition & Subtraction (solving problems) **Week 5**	5	Solve one- step word problems, which involve addition/subtraction including problems that involve money and measurement e.g. Tom buys an apple costing 28p and a drink costing 45p. How much does he spend altogether? Extend with two-step problems for children **'working at greater depth'** including questions that involve both addition and subtraction e.g. There are 28 girls and 45 boys in the playground. 14 children are called into the hall to have lunch. How many children are left on the playground? Solve missing number/empty box problems using addition/ subtraction and understanding of inverse operations e.g. 46 - ☐ = 41; 80 = ☐ + 30; ☐ + 24 = 56 Extend with more complex missing number problems for children **'working at greater depth'** e.g. 24 + ☐ = 32 + 58 Add three one-digit numbers, using knowledge of number pairs e.g. 8 + 6 + 2 = 8 + 2 + 6 = 10 + 6 = 16; extend with e.g. 17 + 3 + 4 = 20 + 4 = 24 **Reason** about addition and subtraction e.g. The sum of two odd numbers will always be even. True or false? How do you know? The sum of three odd numbers will always be odd. True or false? How do you know? Consider the problems 'Birds' eggs' and 'Three Monkeys' **(See Mathematical Challenges for all pupils booklet, 2016)**	Problem, answer/solution, calculate, calculation, inverse Odd/even numbers

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Measurement Length **Week 6**	5	Choose and use appropriate standard units to estimate and measure length/ height in any direction (m/cm) of everyday objects to the nearest appropriate unit, using rulers and metre sticks; read scales in divisions of ones, twos, fives and tens in practical situations Know that there are 100cm in a metre (100cm = 1m) Compare and order lengths and record results using < and > signs Follow a line of enquiry relating to length e.g. Is this true or false? All Y2 children can jump more than one metre; our classroom is more than 8 metres in length. How will you find out? Solve simple word problems involving length/height using addition and subtraction; solve problems using simple multiples e.g. twice as tall; half as wide	Estimate, compare, measure metre(m), centimetre (cm) metre stick, ruler Longer than, shorter than, taller than Longest, tallest, shortest < and > signs Twice as (tall/ long) Half as (tall/long)
Statistics Data handling **Week 7**	5	Interpret tally charts, simple tables, pictograms and block diagrams Ask and answer simple questions involving totalling and comparing the data e.g. how many children altogether chose apples and bananas? How many more children chose cherries than pears? Interpret simple ratios in pictograms, for example where one face represents two children/ one book represents five books Interpret block diagrams with scales in divisions of one, two or five, where all numbers on the scale are given; extend with scales where not all the numbers are given for children **'working at greater depth'** Follow a simple line of enquiry e.g. How did children in our class get to school today? How will you find out?	Block diagram, pictogram Table, list, tally chart, scale Data Collect (data)
Number Addition and subtraction (number facts and mental methods) **Week 8**	5	Consolidate vocabulary related to addition/subtraction Recall/derive pairs of multiples of ten with a total of 100 and give addition/subtraction facts e.g. 70 + 30 = 100; 100 – 30 = 70… Add/subtract ten and multiples of ten to any one-digit or two-digit number Add/subtract 9 to any one-digit or two-digit number by adding/subtracting ten and adjusting (consider using a 100 square to support) Use complementary addition to find **small differences** using concrete objects and by counting up on a number line, e.g. the difference between 39 and 43 is 4; the difference between 79 and 81 is 2; 51 – 48 = 3 Recall/derive doubles of numbers up to double 12; recall/derive doubles of multiples of ten Use knowledge of doubles to add near doubles e.g. 6 + 7 is double 6 add 1; 11 + 12 is double 12 subtract 1 **(See Mental Calculation Strategies, 2017)**	Addition, +, add, plus, more, put together, altogether, total, sum of, count on =, equals, is the same as Subtraction,- , take away, subtract, minus, count back, difference How many are left?

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Geometry Properties of shape & Position and direction **Week 9**	4	Identify and describe the properties of **2-D shapes**, including the number of sides, number of corners, number of right angles and line symmetry (in a vertical line) Reason about 2-D shapes e.g. What is the same about these two shapes? What is different about these two shapes? Show three different shapes and ask 'Which shape is the odd one out? Why?' Is it always, sometimes or never true that when you fold a square in half you get a rectangle? Identify and describe the properties of **3-D shapes**, including the number of edges, vertices and faces; identify 2D shapes on the surface of 3D shapes and use 'circular', 'rectangular', 'triangular' to describe faces Reason about 3-D shapes e.g. What is the same about these two shapes; what is different about these two shapes? Show three different shapes and ask 'Which shape is the odd one out? Why?	All vocabulary relating to 2-D and 3-D shapes from previous terms
	1	Order and arrange combinations of shapes in patterns and sequences	Pattern, sequence
Measurement Time & **Geometry** Position and direction **Week 10**	3	Consolidate telling the time using an analogue clock: o'clock, half past, quarter past/quarter to; show/ draw the hands on a clock to show these times Extend by telling and writing the time to five minutes on an analogue clock; show/draw the hands on a clock to show these times (consider counting in fives around the clock face) Use units of time (minutes & hours) and know the relationships between them; know that there are 60 minutes in an hour and 24 hours in one day Solve problems relating to time e.g. I catch a train at half past nine in the in the morning to go on holiday. My journey lasts for three hours. At what time do I arrive? The film starts at half past two and ends at half past four. How long does the film last? How many hours in two days? How many minutes in half an hour? How many minutes in two hours?	O'clock, half past, quarter past, quarter to, five past, ten past… five to, ten to … Analogue clock Minutes/hours Days/hours
	2	Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line Recognise that a quarter turn is the same as a right angle; use the concept and language of angles to describe turns (clockwise and anti-clockwise)- whole turn, half turn, quarter turn, three-quarter turn (link to the clock face) Give instructions using the language of position, direction and movement **in practical contexts,** such as in P.E. or when programming a robot	Forwards/backwards, left/right, between Turn, whole turn, half turn, quarter turn, three-quarter turn, right angle Clockwise/anti-clockwise

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Measurement Money **Week 11**	5	Consolidate recognising different coins (including £2) and notes (£5, £10, £20) and understand their value; use the symbols (£) and pence (p); know relationship between pounds and pence (£1 = 100p) Find different combinations of coins that equal the same amount of money e.g. I have 7p in my pocket. What coins do I have? How many different ways can you find? I want to buy this apple for 55p. How can I pay for it just using silver coins? Is there more than one solution? Have you found all of the solutions? How do you know? I have five coins in my purse and they total 45p. What are the five coins? Find all of the possibilities Solve word problems involving addition, subtraction, multiplication and division, halving & doubling in contexts of money (to £1and **extend** by crossing £1) including giving change e.g. in the context of shopping or a café **NB** Include 2-step problems for children 'working at greater depth'	Coins Pence (p), penny Pound (£) Buy, spend, change, pay, costs How much? Calculate, calculation Problem, answer/solution, possibilities How did you work it out?
Additional weeks To be used for: • assessment, consolidation and responding to AfL • additional using and applying activities			