Medium Term Plans for Mathematics (revised 2016) -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
- 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 and use 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 the doubles of multiples of 10 to 100 (e.g. double 50 is 100) and recall 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 this)

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** e.g. 56 = 50 + 6; 56 = 40 + 16; 56 = 30 + 26… Order a set of numbers between 0 and 100 and position them on a number line and/or a 100 square; 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. 45 > 54 True or false? How do you know? **Extend** by beginning to partition numbers beyond 100 e.g. 125 = 100 + 20 + 5; 145 = ☐ + 40 + 5, using practical resources to support e.g. Dienes, place value cards	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**	5	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 **(See Calculation Policy)** Show that multiplication of two numbers can be done in any order (e.g. 3 x 5 = 15 and 5 x 3 = 15) Rewrite addition statements as simplified multiplication statements e.g. 5 + 5 + 5 + 5 = 4 x 5 = 20 ; 10 + 10 + 5 + 5 = 10 + 10 + 10 = 3 x 10 = 30 Use the **inverse** relationship between multiplication and division to solve missing number problems e.g. 12 ÷ ☐ = 6; ☐ x 2 = 12 Solve one-step word problems involving multiplication and division using practical resources, informal written methods (including pictures and arrays), empty number lines and signs x, ÷ and = **NB** include division problems with **remainders** and multiplication 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 (remainders) Odd/even numbers
Number Addition & Subtraction **Week 3**	5	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 Mentally add two two-digit numbers with the use of jottings such as an **empty number line**- consider the use of a 100 square to support **(See Calculation Policy)** Mentally subtract two two-digit numbers within 100, initially where there is no regrouping required, using an **empty number line**; extend to examples where regrouping is required; consider the use of a 100 square to support **(See Calculation Policy)** Use **estimation** to check that answers are reasonable e.g. know that 34 + 25 = 58 is incorrect because 4 + 5 = 9; 40 + 50 < 100 because 50 + 50 =100; 60 + 50 > 100 because 50 + 50 =100; 84 - 32 = 62 is incorrect because 80 – 30 = 50	Addition,+, add, plus, more, put together, altogether, total =, equals, is the same as Empty number line, count on Subtraction,- , take away, subtract, minus, count back How many are left? Inverse Estimate, estimation

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Number Addition & Subtraction (solving problems) **Week 4**	5	Solve one- step word problems, which involve addition/subtraction including problems that involve money and measurement; **extend** with two-step problems for children 'working at greater depth' including questions that involve both addition and subtraction Solve missing number/empty box problems using addition/ subtraction and understanding of inverse operations e.g. 46 - ☐ = 41; 80 = ☐ + 30; ☐ + 24 = 76 **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 = 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? If you know that 24 + 27 = 51, what other facts do you know? Consider the problems **'Birds' eggs'** and **'Three Monkeys'**	Problem, answer/solution, calculate, calculation, inverse How do you know? Odd/even numbers
Measurement Length **Week 5**	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 6**	5	Interpret tally charts, simple tables, pictograms and block diagrams Ask and answer simple questions about totalling and comparing the data e.g. how many children altogether chose apples and bananas? How many more children chose cherries than pears? **Begin** to interpret simple ratios in pictograms, for example where one face represents two children/ one book represents five books **Begin** to interpret block diagrams with scales in divisions of two or five, where all numbers on the scale are given 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)

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Number Addition and subtraction **Week 7**	5	**Begin** to use the **partitioning method** to add two two-digit numbers with totals within 100, initially with calculations that do not bridge tens e.g. 34 + 25 and then with calculations that do bridge tens e.g. 38 + 24; consider the use of base ten materials to support **(See Calculation Policy)** Use complementary addition to find **small differences** using concrete objects and by counting up on a number line, e.g. the difference between 29 and 32 is 3; the difference between 79 and 81 is 2; 52 – 48 = 4 **(See Calculation Policy)** Use knowledge of place value and number facts to solve one -step word problems involving addition/ subtraction, including problems set in the context of money or measures 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. 24 children are called into the hall to have lunch. How many children are left on the playground?	Addition, +, add, plus, more, put together, altogether, total, sum of, count on =, equals, is the same as Empty number line Partition, tens, ones/units Subtraction,- , take away, subtract, minus, count back, difference How many are left? Problem, solution, calculate
Geometry Properties of shape & Position and direction **Week 8**		Identify and describe the properties of **2-D shapes**, including the number of sides, 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? Order and arrange combinations of shapes in patterns and sequences	All vocabulary relating to 2-D and 3-D shapes from previous terms Pattern, sequence

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Number Fractions **Week 9**	5	Recognise, name and write fractions 1/2, 1/4, 2/4, 3/4 and 1/3 using words and fraction notation; recognise the equivalence of 1/2 and 2/4 using diagrams to support **Consolidate** finding 1/2 and 1/4 of familiar shapes, lengths, sets of objects or quantity Find 1/3 of familiar shapes and a set of objects **in practical contexts using diagrams and resources to support** (connect unit fractions to equal sharing, division and arrays) Find 2/4 and 3/4 of familiar shapes and a set of objects **in practical contexts using diagrams and resources to support** Solve word problems, which involve fractions, using concrete objects and/or pictorial representations to support e.g. There are 12 bananas in a bunch. I give 1/3 of them to my friend. How many does he have and how many do I have? Reason about fractions e.g. Which would you rather have- 1/ 4 of £20 or 1/2 of £8? 1/3 of 15 bananas or 3/4 of 12 bananas?	Fraction Half, one quarter, two quarters, three quarters, one third 1/2, 1/4, 2/4, 3/4, 1/3
Measurement Time & **Geometry** Position and direction **Week 10**	3 2	**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 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? 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; consider using a clock face to show this Use the concept and language of angles to describe turns (clockwise and anti-clockwise)- whole turn, half turn, quarter turn, three-quarter turn Give instructions using the language of position, direction and movement **in practical contexts,** such as in P.E. or when programming a robot	O'clock, half past, quarter past, quarter to, five past, ten past, etc five to, ten to etc Analogue clock Minutes/hours Days/hours Forwards/backwards, left/right, between Turn, whole turn, half turn, quarter turn, three-quarter turn, right angle Clockwise/anti-clockwise

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 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 How did you work it out?

Additional weeks

To be used for:

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