

## Medium Term Plans for Mathematics (revised 2018) -Year Two (Summer Term)

### Oral mental starters (ongoing, throughout the term):

- Count forwards from 0, and backwards, in twos, fives and tens to the 12<sup>th</sup> multiple
- Recall multiplication and division facts for the 2, 5 and 10 times table, including  $\times 0$ , up to the 12th multiple
- Count forwards from 0, and backwards, in threes to the 12<sup>th</sup> 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.  $\frac{1}{2}$ , 1,  $1\frac{1}{2}$ , 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/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 this)
- Name 2-D and 3-D shapes and describe their properties; reason about shapes

Areas of Study	No of days	Statutory requirements and non-statutory guidance	Suggested Key Vocabulary
<p><b>Number</b></p> <p>Number and place value</p> <p><b>Week 1</b></p>	3 - 5	<p>Read and write numbers to at least 100 in numerals <b>and</b> words</p> <p>Given a number, identify the number that is 10 more or less within 100 (begin to bridge 100)</p> <p>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</p> <p>Partition numbers into tens and ones/units <b>and</b> partition two-digit numbers in different ways (into different combinations of tens and ones/units) e.g. <math>54 = 50 + 4</math>; <math>54 = 40 + 14</math>; <math>54 = 30 + 24</math>...(consider the use of base ten resources, such as Dienes, to support)</p> <p>Order a set of numbers between 0 and 100 and position them on a number line and/or a 100 square; complete a number line or 100 square with missing numbers</p> <p>Compare two numbers from 0 to 100; use <math>&lt;</math>, <math>&gt;</math> and <math>=</math> signs</p> <p>Use place value to solve problems, including missing number problems e.g. <math>50 + \square = 54</math>; <math>\square + 8 = 78</math>; <math>85 = \square + 5</math>; <math>64 = \square + 14</math>; <math>70 + \square = 86</math></p> <p>Reason about numbers e.g. <math>45 &gt; 54</math> True or false? How do you know?</p>	<p>Number, numerals</p> <p>Zero, one, two, three, four .....to one hundred</p> <p>Ten more, ten less</p> <p>Between, before, after</p> <p>Place value</p> <p>Digit, tens, ones/units</p> <p>Partition</p> <p>Order, compare</p> <p>Greater than (<math>&gt;</math>)</p> <p>Less than (<math>&lt;</math>)</p>

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<p><b>Number</b></p> <p>Multiplication and Division</p> <p><b>Week 2</b></p>	<p>5</p>	<p>Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including x 0; <b>extend</b> with 3 x table</p> <p>Represent multiplication and division using arrays and/or empty number lines using known multiples e.g. 2, 3, 5 and 10</p> <p>Use known multiplication and division facts to calculate outside known facts e.g. 14 x 5, for children 'working at greater depth'</p> <p>Show that multiplication of two numbers can be done in any order e.g. 3 x 5 = 15 and 5 x 3 = 15</p> <p>Use the <b>inverse</b> relationship between multiplication and division to solve missing number problems e.g. <math>12 \div \square = 6</math>; <math>\square \times 2 = 12</math></p> <p><b>(See Written Calculation Policy, 2017 and Mental Calculation Strategies, 2017)</b></p> <p>Solve one-step word problems involving multiplication and division using practical resources, informal written methods (including pictures, arrays and empty number lines) and signs x, <math>\div</math> and =; <b>extend</b> with two-step problems</p> <p><b>NB</b> include multiplication word problems with calculations outside known multiples (e.g. 15 x 5) for children 'working at greater depth'</p> <p>Recognise <b>odd and even</b> numbers up to 100 and relate to multiples/groups of two- use resources to support understanding e.g. Numicon</p> <p>Sort odd and even numbers using simple Venn diagrams/sorting circles</p>	<p>Lots of, groups of, repeated addition, times, multiply, multiplied by, multiplication, x, array, row, column</p> <p>Empty number line, count forwards</p> <p>Multiple</p> <p>Share, groups of, divide, divided by, shared equally, repeated subtraction, <math>\div</math>, count backwards</p> <p>Inverse</p> <p>Odd/even numbers</p> <p>Venn diagram</p>
<p><b>Number</b></p> <p>Fractions</p> <p><b>Week 3</b></p>	<p>5</p>	<p>Consolidate recognising, naming and writing fractions 1/2, 1/3, 1/4, 2/4 and 3/4 using words and fraction notation</p> <p>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</p> <p>Recognise the equivalence of 1/2 and 2/4, using diagrams to support</p> <p>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)</p> <p>Solve word problems, which involve fractions, using concrete objects and/or pictorial representations to support e.g.</p> <p>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?</p> <p>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?</p> <p>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?</p>	<p>Fraction</p> <p>Half, one quarter, two quarters, three quarters, one third, whole</p> <p>1/2, 1/4, 2/4, 3/4, 1/3</p>

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<p><b>Number</b></p> <p>Addition &amp; Subtraction</p> <p><b>Week 4</b></p>	<p>5</p>	<p>Recall and use all pairs of numbers with a total of 20 and all pairs of numbers within 20; give addition <b>and</b> subtraction facts</p> <p>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</p> <p>Recognise the <b>inverse</b> relationship between addition and subtraction; show that addition of two numbers can be done in any order e.g. <math>60 + 40 = 100</math>; <math>40 + 60 = 100</math>; <math>100 - 40 = 60</math>; <math>100 - 60 = 40</math></p> <p>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</p> <p>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</p> <p><b>(See Written Calculation Policy, 2017 and Mental Calculation Strategies, 2017)</b></p> <p>Use <b>estimation</b> to check that answers are reasonable e.g. know that <math>34 + 25 = 58</math> is incorrect because <math>4 + 5 = 9</math>; <math>60 + 50 &gt; 100</math> because <math>50 + 50 = 100</math></p>	<p>Addition,+, add, plus, more, put together, altogether, total, sum of, =, equals, is the same as</p> <p>Empty number line, count on</p> <p>Subtraction,- , take away, subtract, minus, count back</p> <p>How many are left?</p> <p>Inverse</p> <p>Estimate, estimation</p>
<p><b>Number</b></p> <p>Addition &amp; Subtraction (solving problems)</p> <p><b>Week 5</b></p>	<p>5</p>	<p>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?</p> <p><b>Extend</b> 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?</p> <p>Solve missing number/empty box problems using addition/ subtraction and understanding of inverse operations e.g. <math>46 - \square = 41</math>; <math>80 = \square + 30</math>; <math>\square + 24 = 56</math></p> <p><b>Extend</b> with more complex missing number problems for children ‘working at greater depth’ e.g. <math>24 + \square = 32 + 58</math></p> <p>Add three one-digit numbers, using knowledge of number pairs e.g. <math>8 + 6 + 2 = 8 + 2 + 6 = 10 + 6 = 16</math>; <b>extend</b> with e.g. <math>17 + 3 + 4 = 20 + 4 = 24</math></p> <p><b>Reason</b> 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?</p> <p>Consider the problems ‘Birds’ eggs’ and ‘Three Monkeys’</p> <p><b>(See Mathematical Challenges for all pupils booklet, 2016)</b></p>	<p>Problem, answer/solution, calculate, calculation, inverse</p> <p>Odd/even numbers</p>

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<p><b>Measurement</b></p> <p>Length</p> <p><b>Week 6</b></p>	<p>5</p>	<p>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</p> <p>Know that there are 100cm in a metre (100cm = 1m)</p> <p>Compare and order lengths and record results using &lt; and &gt; signs</p> <p>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?</p> <p>Solve simple word problems involving length/height using addition and subtraction; solve problems using simple multiples e.g. twice as tall; half as wide</p>	<p>Estimate, compare, measure metre(m), centimetre (cm)</p> <p>metre stick, ruler</p> <p>Longer than, shorter than, taller than</p> <p>Longest, tallest, shortest</p> <p>&lt; and &gt; signs</p> <p>Twice as (tall/ long)</p> <p>Half as (tall/long)</p>
<p><b>Statistics</b></p> <p>Data handling</p> <p><b>Week 7</b></p>	<p>5</p>	<p>Interpret tally charts, simple tables, pictograms and block diagrams</p> <p>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?</p> <p>Interpret simple ratios in pictograms, for example where one face represents two children/ one book represents five books</p> <p>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'</p> <p>Follow a simple line of enquiry e.g. How did children in our class get to school today? How will you find out?</p>	<p>Block diagram, pictogram</p> <p>Table, list, tally chart, scale</p> <p>Data</p> <p>Collect (data)</p>
<p><b>Number</b></p> <p>Addition and subtraction (number facts and mental methods)</p> <p><b>Week 8</b></p>	<p>5</p>	<p>Consolidate vocabulary related to addition/subtraction</p> <p>Recall/derive pairs of multiples of ten with a total of 100 and give addition/subtraction facts E.g. <math>70 + 30 = 100</math>; <math>100 - 30 = 70</math>...</p> <p>Add/subtract ten and multiples of ten to any one-digit or two-digit number</p> <p>Add/subtract 9 to any one-digit or two-digit number by adding/subtracting ten and adjusting (consider using a 100 square to support)</p> <p>Use complementary addition to find <b>small differences</b> 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; <math>51 - 48 = 3</math></p> <p>Recall/derive doubles of numbers up to double 12; recall/derive doubles of multiples of ten</p> <p>Use knowledge of doubles to add near doubles e.g. <math>6 + 7</math> is double 6 add 1; <math>11 + 12</math> is double 12 subtract 1</p> <p><b>(See Mental Calculation Strategies, 2017)</b></p>	<p>Addition, +, add, plus, more, put together, altogether, total, sum of, count on</p> <p>=, equals, is the same as</p> <p>Subtraction, -, take away, subtract, minus, count back, difference</p> <p>How many are left?</p>

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<p><b>Geometry</b></p> <p>Properties of shape</p> <p>&amp;</p> <p>Position and direction</p> <p><b>Week 9</b></p>	<p>4</p> <p>1</p>	<p>Identify and describe the properties of <b>2-D shapes</b>, including the number of sides, number of corners, number of right angles and line symmetry (in a vertical line)</p> <p>Reason about 2-D shapes e.g.</p> <p>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?'</p> <p>Is it always, sometimes or never true that when you fold a square in half you get a rectangle?</p> <p>Identify and describe the properties of <b>3-D shapes</b>, 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</p> <p>Reason about 3-D shapes e.g.</p> <p>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?'</p> <p>Order and arrange combinations of shapes in patterns and sequences</p>	<p>All vocabulary relating to 2-D and 3-D shapes from previous terms</p> <p>Pattern, sequence</p>
<p><b>Measurement</b></p> <p>Time</p> <p>&amp;</p> <p><b>Geometry</b></p> <p>Position and direction</p> <p><b>Week 10</b></p>	<p>3</p> <p>2</p>	<p><b>Consolidate</b> 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</p> <p><b>Extend</b> by telling and writing the time to <b>five minutes</b> on an analogue clock; show/draw the hands on a clock to show these times</p> <p>Use units of time (minutes &amp; hours) and know the relationships between them; know that there are 60 minutes in an hour and 24 hours in one day</p> <p>Solve problems relating to time e.g.</p> <p>I catch a train at half past nine in the morning to go on holiday. My journey lasts for three hours. At what time do I arrive?</p> <p>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?</p> <p>Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line</p> <p>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)</p> <p>Give instructions using the language of position, direction and movement <b>in practical contexts</b>, such as in P.E. or when programming a robot</p>	<p>O'clock, half past, quarter past, quarter to, five past, ten past... five to, ten to ...</p> <p>Analogue clock</p> <p>Minutes/hours</p> <p>Days/hours</p> <p>Forwards/backwards, left/right, between</p> <p>Turn, whole turn, half turn, quarter turn, three-quarter turn, right angle</p> <p>Clockwise/anti-clockwise</p>

