

Improve Maths Progression in mental Calculation Skills in Key Stage 1

Year 1

Year 1			
	Recall Children should be able to recall or derive:	Mental calculation skills Working mentally, perhaps with jottings, children should be able to:	Teach these mental strategies Move children beyond simple counting by encouraging strategies such as these:
Addition and subtraction	<p>one more and one less than a given number</p> <p>different pairs of numbers which combine to make any whole number up to 10</p> <p>addition doubles for all doubles to at least 10 e.g. $8 + 8$</p>	<p>count on from and back to any given number, up to and across 100</p> <p>add a set of single-digit numbers, e.g. $2 + 3 + 3$, $1 + 5 + 2$</p> <p>subtract a pair of single-digit numbers, e.g. $9 - 3$</p> <p>add or subtract one-digit and two-digit numbers to 20, including zero e.g. $13 + 5$, $15 - 6$, $14 + 0$</p> <p>add or subtract a single-digit to or from 10, and add a multiple of 10 to a single-digit number, e.g. $10 + 7$, $8 + 30$</p> <p>add near doubles, e.g. $6 + 7$</p>	<p>reorder numbers when adding to make the calculation easier, e.g. $2 + 3 + 8 = 2 + 8 + 3$</p> <p>Use partitioning to make use of number bonds:</p> <ul style="list-style-type: none"> - for small numbers, e.g. $8 + 3 = 8 + 2 + 1$ $12 - 5 = 12 - 2 - 3$ - for two-digit numbers, e.g. $13 + 5 = 10 + 3 + 5$ $17 - 4 = 10 + 7 - 4$ <p>Use partitioning to make use of knowledge of doubles, e.g. $5 + 6 = 5 + 5 + 1$</p>
Multiplication and division	<p>doubles of all numbers to 10 and the corresponding halves, e.g. double 6, halve 12</p> <p>odd and even numbers to 20</p>	<p>count in multiples of twos, fives and tens</p>	<p>use patterns of last digits, e.g. 0 and 5 when counting in fives</p>

Year 2

Year 2			
	Recall Children should be able to recall or derive:	Mental calculation skills Working mentally, perhaps with jottings, children should be able to:	Teach these mental strategies Move children beyond simple counting by encouraging strategies such as these:
Addition and subtraction	<p>addition and subtraction facts for all numbers up to 20, e.g. $3 + 4$, $15 - 7$</p> <p>add any single-digit number to or from a multiple of 10, e.g. $60 + 5$</p> <p>all pairs of multiples of 10 with totals up to 100, e.g. $30 + 70$, or $60 + \square = 100$</p> <p>what must be added to any two-digit number to make the next multiple of 10, e.g. $52 + \square = 60$</p> <p>addition doubles for all numbers to 15, e.g. $14 + 14$</p> <p>addition of multiples of 10 to 50, e.g. $40 + 40$</p>	<p>count on in tens from any number</p> <p>add any 3 single-digit numbers</p> <p>subtract any single-digit number from a multiple of 10, e.g. $80 - 7$</p> <p>add or subtract a one-digit number to or from a two-digit number, (e.g. $23 + 5$, $57 - 3$), then crossing the tens boundary, (e.g. $28 + 5$, $52 - 7$)</p> <p>add or subtract a multiple of 10 to or from any two-digit number, e.g. $27 + 60$, $72 - 50$</p> <p>addition doubles for all numbers to 20, e.g. $17 + 17$</p> <p>add two two-digit numbers within 100, e.g. $35 + 56$</p>	<p>reorder numbers to make adding easier</p> <p>partitioning one or both of the numbers so that the calculation is made easier to do mentally e.g. $34 + 8 = 34 + 6 + 2$ $23 + 46 = 20 + 40 + 3 + 6$ $23 + 46 = 23 + 40 + 6$ $67 - 23 = 67 - 20 - 3$</p> <p>adding a near multiple of 10 by adding the multiple of 10 and adjusting e.g. $7 + 19 = 7 + 20 - 1$</p> <p>adding a near double by doubling and adjusting e.g. $15 + 16 = \text{double } 15, \text{ add } 1$</p>
Multiplication and division	<p>doubles of all numbers to 20 and the corresponding halves e.g. double 13, halve 26</p> <p>doubles of multiples of 10 to 50 and the corresponding halves e.g. double 40, halve 80</p> <p>multiplication facts for the 2, 10 and 5 times-tables, and corresponding division facts</p> <p>numbers which are odd and even up to 100</p>	<p>count on from and back to zero in twos, threes, fives and tens</p> <p>organise sets of objects into equal groups in order to find the total e.g. into groups of 5</p> <p>show that multiplying by 5 is the same as multiplying by 10 and halving</p> <p>double and halve multiples of 10 to 100 and multiples of 100 to 1000 (e.g. double 70 is double 50 plus double 20, half of 700 is half of 600 plus half of 100)</p> <p>double any multiple of 5 up to 50, e.g. double 35</p> <p>find half of even numbers to 100</p>	<p>Use partitioning to double two-digit numbers e.g. double 26 is double 20 plus double 6</p> <p>reorder numbers to make multiplication easier e.g. $7 \times 5 = 5 \times 7$</p>