



Tenacres First School

Mental Maths Progression



At Tenacres, being mentally fluent in Maths underpins everything we do. In addition to their usual Maths lessons, children have at least 5 additional mental maths sessions a fortnight to build on the skills detailed below. Parents & Carers are encouraged to build on these skills and knowledge at home too.

	<u>Rapid Recall</u>	<u>Mental Strategies</u>	<u>Mental Calculation</u>
<u>EYFS</u>	<ul style="list-style-type: none"> Find one more or one less than a number from 1 to 20. Developing number facts including doubling and halving. Number pairs 5 and 10. 	<ul style="list-style-type: none"> say and use number names in order in familiar contexts; know that numbers identify how many objects are in a set; count reliably up to 10 everyday objects; estimate how many objects they can see and check by counting; count aloud in ones, twos, fives or tens; use language such as 'more' or 'less' to compare two numbers; use ordinal numbers in different contexts; recognise numerals 1 to 9. 	
<u>Year 1</u>	<ul style="list-style-type: none"> Derive and recall all pairs of numbers with a total of 10 and addition facts for totals to at least 5; work out the corresponding subtraction facts Count on or back in ones, twos, fives and tens and use this knowledge to derive the multiples of 2, 5 and 10 to the tenth multiple Recall the doubles of all numbers to at least 10 	<ul style="list-style-type: none"> count on or back in ones; reorder numbers in a calculation; begin to bridge through 10, and later 20, when adding a single-digit number; count back to subtract; find a small difference by counting up from the smaller to the larger number; use known number facts and place value to add or subtract pairs of single-digit numbers; use patterns of similar calculations. 	<ul style="list-style-type: none"> add or subtract a single-digit to or from a single-digit, without crossing 10, e.g. $4 + 5$, $8 - 3$; add or subtract a single-digit to or from 10; add or subtract a single-digit to or from a 'teens' number, without crossing 20 or 10, e.g. $13 + 5$, $17 - 3$; doubles of all numbers to 5 + 5, e.g. $8 + 8$, double 6.
<u>Year 2</u>	<ul style="list-style-type: none"> Derive and recall all addition and subtraction facts for each number to at least 10, all pairs with totals to 20 and all pairs of 	<ul style="list-style-type: none"> count on or back in tens or ones; reorder numbers in a calculation; add three small numbers by putting the largest number first and/or find a pair totalling 10; partition additions into tens and 	<ul style="list-style-type: none"> add or subtract any single-digit to or from any two-digit number, without crossing the tens boundary, e.g. $62 + 4$, $38 - 7$; add or subtract any single-digit to or from a multiple of 10, e.g. $60 + 5$, $80 - 7$;

	<p>multiples of 10 with totals up to 100+</p> <ul style="list-style-type: none"> Understand that halving is the inverse of doubling and derive and recall doubles of all numbers to 20, and the corresponding halves Derive and recall multiplication facts for the 2, 5 and 10 timestables and the related division facts; recognise multiples of 2, 5 and 10 Use knowledge of number facts and operations to estimate and check answers to calculations 	<p>units then recombines; bridge through 10 or 20;</p> <ul style="list-style-type: none"> use known number facts and place value to add or subtract pairs of numbers; add 9 to single-digit numbers by adding 10 then subtracting 1 by rounding and compensating; use patterns of similar calculations; use the relationship between addition and subtraction; use knowledge of number facts and place value to multiply or divide by 2, 5 or 10; identify near doubles, using doubles already known; use doubles and halves and halving as the inverse of doubling. 	<ul style="list-style-type: none"> add or subtract any 'teens' number to any two-digit number, without crossing the tens boundary, e.g. $23 + 14$, $48 - 13$; find what must be added to any two-digit multiple of 10 to make 100, e.g. $70 + ? = 100$; add or subtract a multiple of 10 to or from any two-digit number, without crossing 100, e.g., $47 + 30$, $82 - 50$; subtract any two-digit number from any two-digit number when the difference is less than 10, e.g. $78 - 71$, or $52 - 48$; doubles of all numbers to at least 15, e.g. double 14; double any multiple of 5 up to 50, e.g. double 35; halve any multiple of 10 up to 100, e.g. halve 50.
<u>Year 3</u>	<ul style="list-style-type: none"> Derive and recall all addition and subtraction facts for each number to 20, sums and differences of multiples of 10 and number pairs that total 100 Derive and recall multiplication facts for the 2, 3, 4, 5, 8 and 10 times-tables and the corresponding division facts; recognise multiples of 2, 5 or 10 up to 1000 Use knowledge of number operations and corresponding inverses, including doubling and halving, to estimate and check calculations Count in 4s, 8s, 100s and 50s. 	<ul style="list-style-type: none"> add three or four small numbers by putting the largest number first and/or by finding pairs totalling 9, 10 or 11; partition into tens and units then recombines; bridge through a multiple of 10, then adjust; use knowledge of number facts and place value to add or subtract pairs of numbers; add or subtract mentally a 'near multiple of 10' to or from a two-digit number, e.g. 9, 11, 19, 21, etc; identify near doubles; use patterns of similar calculations; say or write a subtraction statement corresponding to a given addition statement; to multiply a number by 10/100, shift its digits one/two places to the left; use knowledge of number facts and place value to multiply or divide by 2, 5, 10, 100; 	<ul style="list-style-type: none"> find what must be added to any multiple of 100 to make 1000, e.g. $300 + ? = 1000$; add or subtract any pair of two-digit numbers, without crossing a tens boundary or 100, e.g. $33 + 45$, $87 - 2$; add or subtract any single-digit to any two-digit number, including crossing the tens boundary, e.g. $67 + 5$, $82 - 7$; find what must be added to/subtracted from any two-digit number to make the next higher/lower multiple of 10, e.g. $64 + ? = 70$, $56 - ? = 50$; find complements to 100, e.g. $36 + ? = 100$; subtract any three-digit number from any three-digit number when the difference is less than 10, e.g. $458 - 451$, or $603 - 597$;

		<ul style="list-style-type: none"> • use doubling or halving; • say or write a division statement corresponding to a given multiplication statement. 	<ul style="list-style-type: none"> • find what must be added to/subtracted from any three-digit number to make the next higher/lower multiple of 10, e.g. $647 + ? = 650$, $246 - ? = 240$; • doubles:- <ul style="list-style-type: none"> - double any number to at least 20, e.g. double 18, and corresponding halves, e.g. halve 36; - double 60, halve 120; - double 35, halve 70; - double 450, halve 900; • multiply single-digit numbers by 10 or 100, e.g. 6×100; • divide any multiple of 10 by 10, e.g. $60 \div 10$, and any multiple of 100 by 100, e.g. $700 \div 100$.
<u>Year 4</u>	<ul style="list-style-type: none"> • Use knowledge of addition and subtraction facts and place value to derive sums and differences of pairs of multiples of 10, 100 or 1000 • Identify the doubles of two-digit numbers; use these to calculate doubles of multiples of 10 and 100 and derive the corresponding halves • Derive and recall multiplication facts up to 12, the corresponding division facts and multiples of numbers to 10 up to the tenth multiple • Use knowledge of rounding, number operations and inverses to estimate and check calculations • Count in 6s, 7s, 9s, 100s, 1000s & 25s. • Find 1000 more or less than a number. 	<ul style="list-style-type: none"> • count on or back in repeated steps of 1, 10 and 100; • count up through the next multiple of 10, 100 or 1000; • reorder numbers in a calculation; • add 3 or 4 small numbers, finding pairs totalling 10; • add three two-digit multiples of 10; • partition into tens and units, adding the tens first; bridge through 100; • use knowledge of number facts and place value to add or subtract any pair of two-digit numbers; • add or subtract 9, 19, 29, 11, 21 or 31 by rounding and compensating; • add or subtract the nearest multiple of 10 then adjust; • identify near doubles; • continue to use the relationship between addition and subtraction; • double any two-digit number by doubling tens first; • use known number facts and place value to multiply or divide, including multiplying 	<ul style="list-style-type: none"> • find what must be added to any two-digit number to make 100, e.g. $37 + ? = 100$; • add or subtract any pair of two-digit numbers, e.g. $38 + 85$, $92 - 47$; • find out what must be added to/subtracted from any two- or three-digit number to make the next higher/lower multiple of 100, e.g. $374 + ? = 400$, $826 - ? = 800$; • subtract any four-digit number from any four-digit number when the difference is small, e.g. $3641 - 3628$, $6002 - 5991$; • doubles and halves: <ul style="list-style-type: none"> - double any whole number -from 1 to 50, e.g. double 36, and find all the corresponding halves, e.g. $96 \div 2$; - double any multiple of 10 to 500, e.g. 380×2, and find all the corresponding halves, e.g. $760 \div 2$, $130 \div 2$; - double any multiple of 5 to 100, e.g. 65×2;

		<p>and dividing by 10 and then 100;</p> <ul style="list-style-type: none">• partition to carry out multiplication;• use doubling or halving;• use closely related facts to carry out multiplication and division;• use the relationship between multiplication and division	<ul style="list-style-type: none">• multiply any two-digit number by 10, e.g. 26×10;• divide a multiple of 100 by 10, e.g. $600 \div 10$;• multiply any two-digit multiple of 10 by 2, 3, 4 or 5, e.g. 60×4, 80×3.
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