OSMOTHERLEY **MENTAL MATHS** SEQUENTIAL POLICY <mark>*highlighted = ready to progress criteria (number facts)*</mark>

Updated September 2021

FOUNDATION SEQUENCE OF MENTAL MATHS SKILLS
• Count to ten, saying the numbers in order • Count beyond ten, firstly to 20 then beyond 20 (pausing at each multiple of 10 to draw out the structure) • Subitise to 5 without sequential counting • Automatically recall number bonds for numbers zero to ten (using hiding games with a number of objects in a box/real life situations e.g There are 6 of us but I only have 2 pencils, how many more do I need? Give insufficient amounts of equipment items to pose the question e.g: How many more do I need because for this group of 5?

YEAR GROUP	<mark>RECALL TO PRACTISE</mark>	MENTAL STRATEGIES	CALCULATIONS TO CARRY OUT MENTALLY
ONE	<mark>*develop fluency in addition and subtraction facts within ten*</mark> <mark>* All pairs of numbers with a total to 10 e.g. 3+7</mark> <mark>* Addition and subtraction facts for all numbers to any number to 10.</mark> * Addition doubles of all numbers to at least 10+10 * Halving facts of even numbers to 20. * One and two more/ less than any number up to 100. * 10 more/less of multiples of 10 * 5 more/ less of multiples of 5 <mark>*count forwards and backwards in multiples of 2,5,10 up to 10 multiples beginning with any multiple and count*</mark>	*Count on or back in ones, twos, fives and tens * Begin to bridge through 10, and later 20, when adding a single-digit number * Use known number facts and place value to add or subtract pairs of single-digit numbers *Identify near doubles using doubles already know	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 * Double of all numbers to 10 e.g. 8+8, double

	forwards and backwards through the odd numbers		
TWO	*secure fluency in addition and subtraction facts within ten through continued practice* * All pairs of numbers with a total of 20 e.g. 13 +7 *All pairs of multiples of 10 with a total of 100 e.g. 30+70 * Multiplication facts for the 2 and 10 times tables and corresponding division facts *Double of all numbers to ten and the corresponding halves *Know 10x, 2x, 5x tables *Count forwards and backwards in 3's to 36 * Know inverse ÷ for 10, 2 and 5	* count on or back in tens or ones * find a small difference by counting up from the smaller to the larger number * add three small numbers by putting the largest number first and/or finding a pair totalling 10 * partition additions into tens and units then recombine bridge through 10 or 20 * add or subtract 9, 19, 11 or 21 by rounding and compensating * identify near doubles * use knowledge of number facts and place value to multiply or divide by 2, 5 or 10 * use doubles and halves and halving as the inverse of doubling	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 /add or subtract any 'teens' number to any two-digit number, without crossing the tens boundary, e.g. 23 + 14, 48 – 13 * 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
THREE	*secure fluency in addition and subtraction facts that bridge 10 through continued practice* * addition and subtraction facts for each number to 20, e.g. 13 + 4 * sums and differences of multiples of 10, e.g. 70 + 20 or 80 – 30 * number pairs that total 100, e.g. 46 + 54 *recall multiplication facts and corresponding division facts in the 10 5 2 4*	*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 recombine *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 doubling or halving *say or write a division statement corresponding to a given multiplication statement	* 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 * subtract any three-digit number from any three-digit number when the

	and 8 multiplication tables and recognise products in these multiplication tables as multiples of the corresponding number	*apply place value knowledge to known additive and multiplicative number facts (scaling facts by ten)*	difference is less than 10, e.g. 458 – 451, or 603 – 597 * 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 *multiply single-digit numbers by 10 or 100, e.g. 6 x 100 ⬜ divide any multiple of 10 by 10, e.g. 60 ÷ 10, and any multiple of 100 by 100, e.g. 700 ÷ 100
FOUR	*recall multiplication and division facts up to 12 x 12 and recognise products in multiplication tables as multiples of the corresponding number*	*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 *double any two-digit number by doubling tens first * use known number facts and place value to multiply or divide, including multiplying and dividing by 10 and then 100 * partition to carry out multiplication *solve division problems with 2 digit dividends and one digit divisors that involve remainders and interpret remainders appropriately according to the context* *apply place value knowledge to known additive and multiplicative number facts (scaling facts by 100)*	* 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 * double any whole number from 1 to 50, e.g. double 36, and find all the corresponding halves, e.g. 96 ÷ 2 * double any multiple of 10 to 500, e.g. 380 x 2, and find all the corresponding halves, e.g. 760 ÷ 2, 130 ÷ 2 *double any multiple of 5 to 100, e.g. 65 x 2 *multiply any two-digit number by 10, e.g. 26 x 10 /divide a multiple of 100 by 10, e.g. 600 ÷ 10 /multiply any two-

			digit multiple of 10 by any single-digit number
FIVE	**** secure fluency in multiplication table facts up to 12 x 12 and corresponding division facts through continued practice*** *sums and differences of decimals to 1dp/ doubles and halves of decimals, e.g. half of 5.6	*count up through the next multiple of 10, 100 or 1000 *partition into hundreds, tens and units, adding the most significant digit first * use known number facts and place value to add or subtract pairs of three-digit multiples of 10 and two-digit numbers with one decimal place * add or subtract the nearest multiple of 10 or 100 then adjust *identify near doubles * add several numbers * use factors * partition to carry out multiplication use closely related facts to carry out multiplication and division *use knowledge of number facts and place value to multiply or divide ****apply place value knowledge to known additive and multiplicative number facts (scaling facts by 100)***	add or subtract any pair of three-digit multiples of 10, e.g. 570 + 250, 620 – 380 * find what must be added to a decimal fraction with units and tenths to make the next higher whole number, e.g. 4.3 + ? = 5 *add or subtract any pair of decimal fractions each with units and tenths, or each with tenths and hundredths, e.g. 5.7 + 2.5, 0.63 – 0.48 * subtract a four-digit number just less than a multiple of 1000 from a four-digit number just more than a multiple of 1000, e.g. 5001-1997 * multiply any two- or three-digit number by 10 or 100, e.g. 79 x 100, 363 x 100 / divide a multiple of 100 by 10 or 100, e.g. 4000 ÷ 10, 3600 ÷ 100 /multiply any two-digit multiple of 10 y a single-digit, e.g. 60 x 7, 90 x 6 * double any whole number from 1 to 100, multiples of 10 to 1000, and find corresponding halves * find 50%, 25%, 10% of small whole numbers or quantities by knowing fraction equivalent and dividing by denominator, e.g. 25% or £8
SIX	multiplication and division facts involving decimals, e.g. 0.8 x 7 and 4.8 ÷ 6	consolidate all strategies from previous years:	multiply any two-digit number by a single-digit, e.g. 34 x 6 (by partitioning and using times table knowledge)

* squares of numbers to 12 x 12 and the corresponding squares of multiples of 10	* use knowledge of number facts and place value to add or subtract pairs of three-digit multiples of 10 and two-digit numbers with one decimal place * add or subtract the nearest multiple of 10, 100 or 1000, then adjust *continue to use the relationship between addition and subtraction *use factors * partition to carry out multiplication * use doubling and halving *use closely related facts to carry out multiplication and division * use the relationship between multiplication and division * use knowledge of number facts and place value to multiply or divide	*multiply any two-digit number by 50 or 25, e.g. 23 x 50, 47 x 25 (by x by 100 then adjusting) * multiply or divide any whole number by 10 or 100, giving any remainder as a decimal, e.g. 47 ÷ 10 = 4.7, 1763 ÷ 100 = 17.63 *find squares of multiples of 10 to 100 * find any multiple of 10% of a whole number or quantity, e.g. 70% of £20, 50% of 5kg, 20% of 2 metres (by knowing LBH conversions of key percentages to fractions:1% 10% 20% 25% 75% 50%)