



Mental Maths and Arithmetic Overview

Year 1		
Rapid Recall / Times Tables	Mental Strategies	Mental Calculations
<ul style="list-style-type: none"> • All pairs of numbers with a total to 10 e.g. 3+7 • Addition and subtraction facts for all numbers to any number to 10 • 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 	<ul style="list-style-type: none"> • Count on or back in ones, twos, fives and tens • Reorder numbers in calculation • 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 • Add 9 to single-digit numbers by adding 10 then subtracting 1 • Subtract 9 by subtracting 10 then adding 1 • Identify near doubles using doubles already known 	<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 • Double of all numbers to 10 e.g. 8+8, double 6



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Year 2		
Rapid Recall / Times Tables	Mental Strategies	Mental Calculations
<ul style="list-style-type: none"> • Addition and subtraction facts for all numbers to at least 10 • 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 • Multiplication facts up to 5x5 e.g. 4x3 • Know 10x, 2x, 5x tables • Count forwards and backwards in 3's to 36 • Know inverse \div for 10, 2 and 5 	<ul style="list-style-type: none"> • Count on or back in tens or ones • Find a small difference by counting up from the smaller to the larger number • Reorder numbers in a calculation • 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 • Use known number facts and place value to add or subtract pairs of numbers • Partition into '5 and a bit' when adding 6, 7, 8 or 9 • Add or subtract 9, 19, 11 or 21 by rounding and compensating • Identify near doubles • Use patterns of similar calculations • Use the relationship between addition/subtraction • 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 	<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 • 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



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Year 3		
Rapid Recall / Times Tables	Mental Strategies	Mental Calculations
<ul style="list-style-type: none"> • Addition and subtraction facts for all numbers to 20 • All pairs of multiples of 100 with a total of 1000 • All pairs of multiples of 5 with a total of 100 • Multiplication facts of the 2,5 and 10 times table and corresponding division facts • Multiplication facts 3, 4 and 8 times tables 	<ul style="list-style-type: none"> • Count on or back in tens or ones • Find a small difference by counting up from the smaller to the larger number • Reorder numbers in calculations • Add three or four small number by putting the largest number first and/or by finding pairs totalling 9, 10 or 11 • Partition into tens and units then recombine • 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 • 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 it's digits one/two places to the left • Use knowledge of number facts and place value to multiply or divide by 2,5,10 and 100 • Use doubling and halving 	<ul style="list-style-type: none"> • Find out 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 to 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. $64 + ? = 70$, $56 - ? = 50$ • Subtract any three-digit number from any three digit number when the difference is less than 10, e.g. $458 - 451$, $603 - 597$ • Find what must be added to/subtracted from any three digit number to make the next higher/lower multiple of 10 e.g. $647 + ? = 650$, $246 - ? = 240$ • Doubles - 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. $60/10$ and any multiple of 100 by 100 e.g. $700/100$



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Year 4		
Rapid Recall / Times Tables	Mental Strategies	Mental Calculations
<ul style="list-style-type: none"> • Multiplication facts of the 2,3,4,5, 6, 7, 8, 9, 10,11 and 12 times tables • Division facts corresponding to tables of 2,3,4,5, 6, 7, 8, 9, 10,11 and 12 	<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 calculations • Add 3 or 4 small numbers , finding pairs totalling 10 • Add 3 or 4 2 digit numbers, finding pairs totalling 100/ use near doubles • Add three two-digit multiples of ten • Partition in to tens and units, adding the tens first • Bridge through 100 and 1000 • 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 the 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 • Use doubling and halving • Use closely related facts to carry out multiplication and division 	<ul style="list-style-type: none"> • Find what must be added to any two-digit number to make 100 e.g. $37 + ? = 100$ and to make 1000 • 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: - 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. 380×2, and find all the corresponding halves e.g. $760/2$, $130/2$ - Double any multiple of 5 to 100 e.g. 65×2, then to 1000 • Multiply any two-digit number by 10, e.g. 26×10 • Divide a multiple of 100 by 10 e.g. $600/10$ • Multiply any two-digit multiple of 10 by 2,3,4 or 5 e.g. 60×4, 80×3.



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Year 5		
Rapid Recall / Times Tables	Mental Strategies	Mental Calculations
<ul style="list-style-type: none"> • Multiplication facts to 12 x 12 • Division facts corresponding to tables up to 12 x 12 • Other 2 digit tables to support long division 	<ul style="list-style-type: none"> • Count through the next multiple of 10, 100, 1000 or 10,000 • 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 • Use factors • Use doubling and halving • Use closely related facts to carry out multiplication and division • Use knowledge of number facts and place value to multiply or divide 	<ul style="list-style-type: none"> • 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. $5.7 + 2.5$, $0.63 - 0.48$ • Multiply any two or three-digit number by 10 or 100 e.g. 79×100, 363×100 • Divide a multiple of 100 by 10 or 100 e.g. $4000/10$, $3600/100$ • Multiply any two-digit multiple of 10 by a single digit e.g. 60×7, 90×6 • Double any whole number from 1 to 100, multiples of 10 to 1000 and find corresponding halves • Find 50%, 25%, 10% of a small whole number or quantities e.g. 25% of £8



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Year 6		
Rapid Recall / Times Tables	Mental Strategies	Mental Calculations
	<p style="text-align: center;">Consolidate all strategies from previous years</p> <ul style="list-style-type: none"> • 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 multiples of 10, 100 or 1000 and then adjust • Use factors • Use knowledge of number facts and place value to multiple or divide. 	<ul style="list-style-type: none"> • Multiply any two-digit number by 50 e.g. 23×50 • 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.