Progression Of Mental Maths Knowledge – Hollybrook Schools

	EYFS	Year 1	Year 2	Year3	Year 4	Year 5	Year 6
Addition and Subtraction	Begin to use number bonds to solve addition and subtraction e.g. 3 + 4 = 7	Understand that if you add or subtract 0, nothing changes. See doubles/halves and number bonds. Recognise patterns when adding e.g. 14 + 2 = 16 25 + 5 = 30 60 + 10 = 70	Add and subtract mentally where no regrouping is required: • Two x 2-digit numbers e.g. 23 + 42 = 65 84 – 21 = 63 • 2-digit number and tens 67 + 20 = 87 86 – 40 = 26 • 2-digit number and ones 45 + 4 = 9 • 3 x 1 digit numbers.	Add and subtract mentally: • 3-digit number and ones • 3-digit number and tens • 3-digit number and hundreds • To add or subtract 10 or 100.	Add and subtract mentally: • 4-digit number and ones • 4-digit number and tens • 4-digit number and hundreds • To add or subtract 10, 100 or 1000.	Add and subtract mentally: • Multiples of 100 e.g. • 800 + 400 = 1200 • Multiples of 1000 e.g. 4000 + 5000 8000 – 3000 = 5000 Use knowledge to add decimals: 0.7 + 0.5 = 1.2 (not 0.12)	To perform a range of mental calculations, including with mixed operations and large numbers, including decimals and percentages.
Multiplication and Division	To recognise if a group is equal or not to understand if a number is odd or even.	Count in 10s, 5's and 2's from zero.	Count in steps of 2, 3, 5 and 10 from any number. Recall and use multiplication and division facts for 2, 5 and 10. Use the commutative method to solve multiplication calculations.	Recall and use multiplication and division facts for 3, 4 and 8. Multiply 2-digit numbers by 10. E.g. 24 x 10 = 240	Recall and use multiplication and division facts up to 12 x 12. Multiplying and dividing any 2 and 3-digit number by 10 and 100 e.g. 24 x 100 = 2400 136 x 100 = 136000 3600 ÷ 100 = 36 Use facts to multiply and divide e.g.	Multiplication based on number facts e.g. 40 x 40 = 1600 Multiply and divide by 10 and 100 e.g. 45 ÷ 100 = 0.45 Squares of all numbers to 12 Cubed numbers of 2, 3, 4 and 5	To identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places.

					3 x 200 = 600 600 ÷ 2 = 300 Multiply 3 numbers.		
Number bonds	Know number bonds to 5 by heart.	Know number bonds to 10 and within ten by heart. Begin to recall some number bonds to 20.	Know number bonds to 20 and related facts e.g. 4 + 6 = 10 6 + 4 = 10 10 – 4 = 6 10 – 6 = 4 Know number bonds to 100 using knowledge of bonds of ten. 20 + 80 = 100 70 + 30 = 100	To know number bonds to 100 e.g. 56 + 44 = 100 23 + 77 = 100 100 – 49 = 51	To recognise number bonds within 3-digit numbers e.g. 720 + 80 = 800 230 + 1 70 = 400 600 – 360 =240 Decimal bonds to a whole 0.1 + 0.9 = 1 0.2 + 0.8 = 1 0.3 + 0.7 = 1 0.4 + 0.6 = 1 0.5 + 0.5 = 1 0.6 + 0.4 = 1 0.7 + 0.3 = 1 0.8 + 0.2 = 1 0.9 + 0.1 = 1	Use decimal bonds to make the next whole number. Using ones and tenths e.g. 7.2 + 0.8 = 8 8.3 + 0.7 = 9 10 – 4.6 = 5.4	Recognise number bonds of larger numbers e.g. 1327 + 673 = 2000 5000 – 2465 = 2535
Doubles and Halves	Use Numicon to explore doubles e.g. 2 + 2 = 4 up to 5 + 5 (Extend to begin questioning about halving.)	Know doubles and halves to 5 + 5 and inverse.	Know doubles and halves to 10 + 10. They would also need to know how to add near doubles E.g. 5 + 4 = 9 (4 + 4 = 8, 8 + 1 or 5 + 5 = 10 and – 1)	Doubles and halves of any multiples of 10 e.g. double 60 =120 double 90 = 180 half of 160 = 80 Near doubles e.g. 50 + 40 = 90 (40 + 40 = 80, 80 + 10 = 90 or 50 + 50 = 100, 100 – 10 = 90)	Doubles of any even number to 100. Halves of any even number e.g. 36,	Halves of any number up to 100 e.g. half of 51 = 25.5	Doubles and halves of larger numbers, including the use of decimals.
Partitioning and recombining	Within the use of number bonds to 5 e.g. 2 + 2 = 4 so 2 + 3 = 5	To add 11 by adding 10 and then 1 e.g. 30 + 11 = 30 + 10 = 40 40 + 1 = 41	To add and subtract 9 and 11 to any number within 100 24 + 9 = 24 + 10 = 34 34 – 1 = 33	Add and subtract 9, 19, 11, 21 from any 2 digit number by adjusting. 12 + 9 = 21 34 – 11 = 23 42 + 19 = 61	Add and subtract two-digit numbers that end in 8, 9, 2 or 1 by adjusting. 39 + 22 = 61	Add and subtract any 2-digit number to another 3-digit using adjusting. 283 – 58 = 283 – 60 = 223 223 + 2 = 225	Rounding up to 100 or 1000 to add and subtract and adjust larger numbers.