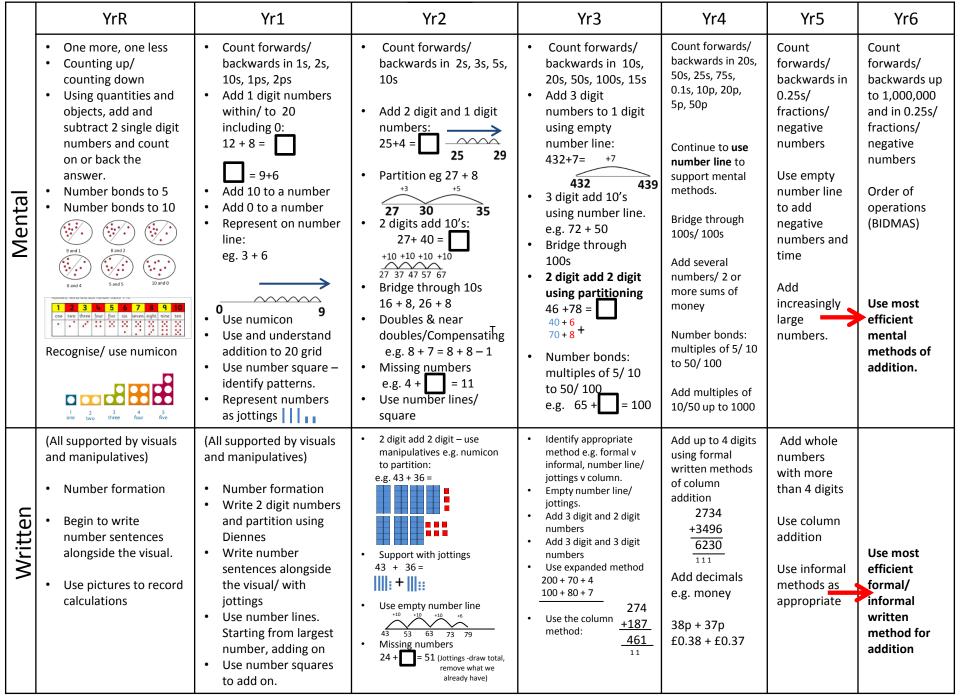
## Addition



## **Subtraction**

	<del></del>											
	YrR	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6					
Mental	One more, one less Using quantities and	backwards in 1s, 2s, 10s backwards in 2s, 3s, 5s, backwards in 10s, 10s backwards in 10s, 2os, 50s, 10os, 15s	Count forwards/ backwards in 20s, 50s, 25s, 75s, 0.1s, 10p, 20p, 5p, 50p	Count forwards/ backwards in 0.25s/ fractions/ negative	Count forwards/ backwards in 0.25s/							
	objects, add and subtract 2 single digit numbers and count on	Subtract 1 and 2 digit numbers to 20, incl. 0.	bonds (incl. for checking)	bonds Subtract 3 digits and	Continue to use number	numbers	fractions/ negative					
	or back to find the answer.	Inverses of number bonds to 10/ 20	Subtract 2 digit numbers and ones. 24 – 6 =	1's 437 – 5 =	line to support mental methods.	Subtract mentally with increasingly	numbers Order of					
	Take 2 away	9-5=	-6	Subtract 3 digits and 10's	Bridging through 100s/ 1000s.	large numbers	operations (BIDMAS)					
	Recognise/ use numicon	Teacher modelling number line as visual representation	18 24 (Begin to be more efficient 24 – 4 – 2)	273 – 30 = Subtract 3 digits and 100's 437 – 300 =	Subtract several numbers  Subtract multiples of 100/ 10 from 4 digit number	12462 – 2300 = 10162 (Using place value)	Subtract negative numbers					
	one to thee Gur Dy	4 9	Subtract 2 digit numbers and 10's	Use empty number line, counting back	Subtracting involving negative numbers representing on number line	Find differences of time (number line)	e.g4 6 = 2, 4—6 = 10					
	Use number line to count back -5	Recognise and use the inverse 9 - 5 =	36 - 20 =	in efficient jumps.  Find a difference by adding on:	e.g. 3°C – 9°C (vertical number line) Find a difference by adding on: incl. decimals	Subtract fractions	Use most efficient mental					
	4 9	9 - 4 =  Board games/ 100 square games	16 26 36 Missing numbers - 12 = 24	50 – 48 = +2	and money.		method of subtraction.					
Written	(All supported by visuals and manipulatives)	(All supported by visuals and manipulatives)	Use of number lines	Expanded column method (with	Compact column subtraction up to 4	Subtract whole numbers and	Use most efficient					
	Number formation	Correct number formation	Bridging through 10s	exchanging)  20  400 30 12	digits (with exchange)  6 18 9	decimals with more than 4	written method of					
	Begin to write     number sentences	Write numbers sentences (1 number, 1 symbol per square)	Partitioning  Draw jottings and	200 10 7	-4692 2097	digits	subtraction.					
	alongside the visual.  • Use pictures to	Visual support: Numicon and pegs Used marked number line, number square	cross out. 32 - 11	Compact column subtraction with exchange	Use efficient informal	Choose most appropriate formal/	Use mental method if appropriate.					
	record calculations	Physical/ pictorial representations	For confident ch: (exchange using jottings/ manipulatives)	4 <mark>\$</mark> 12 - 2 1 7 	methods if appropriate e.g. 3003- 2998 using number line.	informal method.	appropriate.					
		Jottings: 9-5 =	32 - 17 =         Then remove	Cont. use empty number lines								

Multiplication

	Multiplication											
	YrR	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6					
Mental	Count forwards/backwards in 2s, 5s, 10s  Using concrete objects solve problems using doubling, and grouping.  Two 2 Four 4 Six 6  Use numicon for doubling halving	Count forwards/ backwards in 2s, 5s, 10s  Concrete objects to show grouping.  Use numicon for doubling halving  Spot number patterns on a 100 square or groups of  Recognising odds and evens	Count forwards/ backwards in 2s, 3s, 5s, 10s  2, 3, 5, 10 times tables.  Use concrete objects and jottings  Repeated addition  Make links e.g. 3 x 2 = 6 6 ÷ 3 = 2 2 = 6 ÷ 3 30 x 2 = 60 (use numicon and balances)  Dice pattern jottings:	<ul> <li>Count forwards/backwards in 10s, 20s, 50s, 100s, 15s</li> <li>3, 4, 8 times tables (use 'Multiplication in a flash')</li> <li>x 10, x 100 (incl decimals)</li> <li>Instant recall of x facts</li> <li>square numbers</li> <li>X by 0/1</li> <li>1 digit x 1 digit x 1 digit</li> <li>2 digit x 1 digit.</li> <li>Partition:</li> <li>24 x 3</li> <li>20 x 3 = 60</li> <li>4 x 3 = 12</li> <li>60 + 12 = 72</li> </ul>	Count forwards/ backwards in 20s, 50s, 25s, 75s, 0.1s, 10p, 20p, 5p, 50p  6, 7, 9, 11, 12 times tables (use 'Multiplication in a flash')  x 10, x 100,1000 (incl decimals)  3 x 15 = 3x3x5 = 9 x 5  = 45 Using factor & multiple pairs Square/ prime numbers  Partitioning 39 x 7 = 30 x 7 + 9 x 7  (2x3)x4=2x(3x4) Distribution law Associative law  1 digit x 1 digit x 1 digit Use lang. of multiplication	Count forwards/ backwards in 0.25s/ fractions/ negative numbers  Reinforce times tables ('Multiplication in a flash')  Use knowledge of factors x10, x100, 1000 Including decimals.  Using factor & multiple pairs Square/ prime numbers  Round number and estimate to check written answers	Count forwards/backwards up to 1,000,000 and in 0.25s/fractions/negative numbers  Reinforce times tables ('Multiplication in a flash')  Order of operations (BIDMAS)  Perform mental calculations including mixed operations and large numbers.					
Written	Use practical/ pictorial resources to begin to write simple number sentences using repeated addition.  2 + 2 = 4 4 = 2 + 2	Use concrete objects to write arrays  OOOOO  2, 4, 6, 8, 10  2 lots of 5, 5 groups of 2 etc  Write as repeat addition  OOOOO  Counting in 2's 5's and 10's on a number line with the support of teacher.	Write multiplication number sentences  Write arrays with multiplication symbol 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Grid method:  24 x 3 = 72  x   20   4  3   60   12  60 + 12 = 72  Expanded method:  20 + 4  x3  12 (4 x 3)  60 (20 x 3)  72  Find missing values using inverse	Grid method: $26 \times 25 = \frac{x \mid 20 \mid 6}{20 \mid 400 \mid 120} + \frac{400}{120} = \frac{30}{50} = \frac{30}{100} = \frac{30}{650} = \frac{30}{650} = \frac{276}{36 \mid (6\times6)} = \frac{276}{36 \mid (6\times6)} = \frac{1200}{1656} = \frac{1200}{1656} = \frac{276}{43} = \frac{x \mid 6}{1656} = \frac{1656}{43} = $	Standard method  276 x 6 1656 43  Long multiplication 2754 x 28 22032 55080 77112  2 x 2 digits 2 x 3 digit 2 x 4 digit  Incl decimals e.g 2.63 x 3 money/ measures 2/3 step problems	Multiplying fractions  Multiplying 2 lecimals  Multiplying 2 decimals less than 1 e.g. 0.4 x 0.5					

Division Yr4 YrR Yr1 Yr3 Yr6 Yr2 Yr5 (Counting/ forwards (Counting/ forwards (Counting/ forwards (Counting/ forwards backwards (Counting/ forwards (Counting/ forwards (Counting/ forwards as per multiplication) backwards as per Calculate mathematical multiplication) multiplication) multiplication) multiplication) multiplication) multiplication) statements for ÷ within the Multiply (and divide) 2 Divide numbers up to Write and calculate Divide numbers up to multiplication tables (2.3.5, 10s) 4 digits by a two-digit digit and 3 digit numbers Solve one step problems mathematical 4 digits by a one-digit Solve problems, including by a 1 digit number using and write them using symbols whole number using using concrete objects, number using the statements for ÷ using a formal written layout. the efficient written halving and sharing. formal written pictorial reps and arrays with the x tables they know (short division by 1 digit method of short & long Grouping Grouping concrete objects support (of teacher). Four eggs fit in a box. How (including 2 digit divided with exact answers.) method of short division, and interpret Sharing equally in contexts many boxes would you need to by 1 digit mentally  $348 \div 4 = 87$ remainders as whole division and interpret pack 20 eggs? number remainders. 80 x 4 7 x 4 progressing.) remainders fractions, decimals or 6 cakes shared between 2 How many apples in each appropriately for the 22 22 22 22 by rounding, as Menta bowl if I share 12 apples e.g.  $24 \div 4 =$ context. appropriate for the 320 348 between 3 bowls? context Know factors and Grouping (efficient) Also sharing: 20 eggs in 5 25.6 + 8 Partitioning (multiples of multiples Number line to boxes, how many in each (estimate: 24 + 8 = 3) the divisor) mentally support as box? 8)25.6 Number lines (start from appropriate -24.0 $(8 \times 3.0)$  $177 \div 4 = 44 \text{ r } 1$ zero and count up in ••••••••••••• 1.6 6 cakes put into groups of 2  $(8 \times 0.2)$ -1.6 jumps) Reinforce Partitioning mentally 40 x 4 = 160 Use concrete objects/ language of 'groups of'  $4 \times 4 = 16$  (176) Odds and evens (using Answer: 25.6 + 8 = 3.2 represent pictorially Also in contexts with  $247 \div 7 = 35 \text{ r}2$ practical resources) 432 + 15 becomes remainders, rounding Understanding division appropriately. Share equally as repeated subtraction  $30 \times 7 = 210$ Inverses 1 5 4 3 2 Halves and quarters of  $33 \div 5 = 6 \text{ r}$  $5 \times 7 = 35$ (245) $20 \div 5 = 4$ Know factors and objects, numbers and  $20 \div 4 = 5$ 1 3 2 multiples  $\sim\sim\sim$ 1 2 0 quantities Missing numbers using the 1 2 0 5 10 15 20 25 30 33 inverse Fractions of a number =  $\frac{1}{2}$ , 4: 4 Missing numbers using ¼ of 12 the inverse Answer: 28 5 6 cakes shared between 2 Number tracks / Number line Write division number Number lines (start from Partitioning (multiples Short division by Order of operations chunking zero) using known facts of the divisor) mentally (BIDMAS) Counting up sentences (modelled using bead strings)  $8 \div 2 = 4$ for efficiency e.g. 947 Short' division with Number lines / Number multiples of 10, 5, 2  $177 \div 4 = 44 \text{ r}$ Begin to write number 5682 **00-00-00-00** bigger numbers and strings/ Arrays  $96 \div 6 = 16$  $40 \times 4 = 160$ 5400 (900x6) sentences alongside the decimals e.g.  $15 \div 5$ (How many 6s can we  $4 \times 4 = 16$  (176) 282 visual. E.g. 6 r2 take from 96?) Also in contexts with 00000 00000 00000 240 (40x6) Written Share into 4 groups etc remainders, rounding 42 5 4 3 2 6 cakes put into groups of 2 15 42 (7x6) 10 x 6 6 x 6 appropriately. Number stories Long division incl. Move onto short Short division (up to 4 decimals, fractions division (by chunking) 2 + 2 + 2 = 6digit by 1 digit) 432 ÷ 15 becomes Partitioning Partitioning (early - 2 digit by 1 digit, with 28 ÷ 2 chunking) using multiples and without remainder 291 ÷ 3 (estimate: 270 2 8 . 8 Use jottings/pictorial  $\div 3 = 90$ ) 1 5 4 3 2 . 0  $20 \div 2 = 10$ of the divisor) 22 r 3 3 0 ↓ representations 4 91  $8 \div 2 = 4$  $50 \div 4 = 12 \text{ r2}$ 1 3 2 40 (10 x 4)  $\frac{97}{3}$ Also in contexts with  $10 \times 4 = 40$ 1 2 0 51 remainders  $2 \times 4 = 8$ 1 2 0 40 (10 x 4) 1 2 0 11 Use concrete objects/ Also in contexts with 8 (2 x 4) iottings to support remainders, rounding appropriately. Answer: 28-8