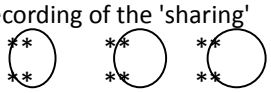
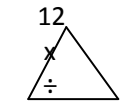
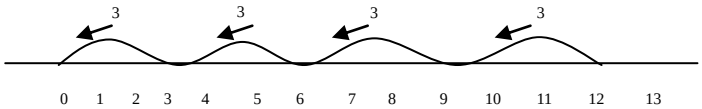
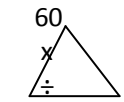
Wimborne First School

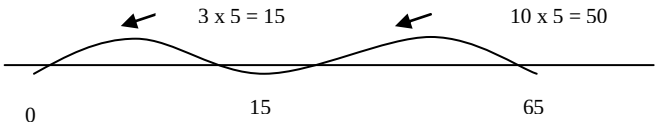
PROGRESSION IN DIVISION

As of September 2014 column headings will be read as HT1 alongside HTU

N.B - Numicon and its resources introduced January 2015 to support and enrich already established maths curriculum.

	Progression	Activities	Notes on vocabulary
0	Sharing objects equally	sharing objects between children, between teddies	shared between equal all have the same divide (informally)
1a	Pictorial recording of the 'sharing' 	practical problem solving	
1b	Move to subtracting groups e.g. 12 divided into groups of 3 ** ** ** ** * * * *	practical activities	groups of divide (formally)
1c	Introduce ÷ symbol 12 ÷ 3 = 4 Read: 12 divided into groups of 3; later 12 divided into 3s Make clear that this is DIFFERENT from 'sharing between'		Keep taking away 3s
2a	Make explicit that dividing is the same as repeated subtraction	How many pairs in 12 socks? (12 ÷ 2 = 6) How may octopi in 24 legs? (24 ÷ 8 = 3) *Calculator activity: repeatedly take away 3. Type 12 - 3 -3-3-3 = 0*	How many pairs in 12? 6 How many 8s in 24? 3 repeated take away repeated subtraction
2b	Arrays - link with multiplication 12 cubes: how many 3s? How many 4s? * * * * * * * * * * * * so 12 ÷ 3 = 4 and 12 ÷ 4 = 3		array rows columns
2c	Linked number sentences  3 x 4 = 12 4 x 3 = 12 12 ÷ 3 = 4 12 ÷ 4 = 3		
2d	Numberline hopping back 12 ÷ 3 =?  Rule: start on the first number: hop back in steps of '2nd no.' until you get to 0 (or as close as you can go)		Are all the jumps the same size? Have you got as close to 0 as you can?
2e	Know division facts in tables - 10s, 2s, 5s		How many 10s in 30?
2f	Link to halving 1/2 of 12 is 12 ÷ 2 Stage 1: cut pizza into half and share 12 cubes between the halves Stage 2: divide 12 into 2s		half halving

	Halving is 'dividing between 2' or/ and 'dividing into 2s'.		
2g	Know 'half' facts e.g. 1/2 of 2 is 1, to 1/2 of 24 is 12.		
3a	Know that multiplication calculations can be reversed (commutative) but division ones cannot. e.g. 3 x 4 = 4 x 3 but 12 ÷ 3 ≠ 3 ÷ 12 So we have halved the number of facts in our tables	arrays numberline jumps (3 jumps of 4 = 4 jumps of 3)	reversable
3b	One step problems and practical problem solving		
3c	Link to quarters 1/4 of 12 is 12 ÷ 4 Stage 1: cut pizza into quarters and share 12 cubes between the quarters Stage 2: divide 12 into 4s Cutting into quarters is 'dividing between 4' or/and 'dividing into 4s'.		quarter
3d	<u>Remainders</u> Practical activities 14 ÷ 3 (subtract 3 until you can't do any more) = 4 r 2 Numberline hopping 14 ÷ 3 (start on 14, hop back in jumps of 3 until you get as close to 0 as you can) = 4 hops, end on 2 = 4 r 2	One step problems	remainder some left over
3e	Harder linked number sentences  60 x ÷ 6 10 10 x 6 = 60 6 x 10 = 60 60 ÷ 6 = 10 60 ÷ 10 = 6		
4a	Know multiplication and division are inverse operations i.e. after a multiplication, if you divide again, you get back to the first number e.g. 12 x 4 = 48, 48 ÷ 4 = 12 function machine In x4 ÷ 4 Out 12 → 48 → 12 ? → ? → 3	Calculator Investigation: is this (the statement on the left) ALWAYS true? E.g. 1345 x 345 =? ? ÷ 345 = 1345 2 Function machines	inverse
4b	Begin to know division facts for 3, 4, 6 times tables (Maybe inc. focus on the 'square' numbers. How many 4s in 16?)		How many 6s in 36?
4c	Change to recording in a 'box' - <u>work out answer practically or with table facts</u> 4 4 r 2 3 ⟌12 or 3 ⟌14		How many 3s in 12?
4d	Problems involving division - solved practically or with table facts		

4e	TU ÷ U CHUNKING - no remainders e.g. 65 ÷ 5 1 3 5 6 5 - 5 0 (10 x5) 1 5 - 1 5 (3 x 5) 0 0 (13 x 5) altogether Might make link with numberline division  		take away as big a chunk as you know from your tables remember to put the answer on the top
4f	Know x ÷ 1 = x e.g. 14 ÷ 1 = 14, 123 ÷ 1 = 123	Calculator investigation: Is it always true that if you divide by 1 the number stays the same? (Try HUGE numbers)	
4g	Multiplication and division by 10, 100 (1000) 32 x 10 = 320 4200 ÷ 100 = 42 Note: the number of 'jumps' = the number of zeros	Human numbers- all jump one / two (three) place to left (x) or right (÷), use zeros as place holders where necessary	
4h	Harder linked number sentences 72 x ÷ 8 9 8 x 9 = 72 9 x 8 = 72 72 ÷ 9 = 8 72 ÷ 8 = 9		
4i	Multiplication and division by 10, 100 (1000) using decimals 43 ÷ 10 = 4.3 123.4 x 100 = 12340	as above	
4j	Link to fractions 1/10, 1/5, 1/3, then 3/10, 3/5 etc. RULE: to find one 'anything', you divide by the bottom number 1/5 of 35 = 35 ÷ 5 = 7 1/10 of 50 = 50 ÷ 10 = 5 RULE: if you want more than one 'anything' you then multiply by the top number 2/5 of 35 = 7 x 2 = 14; 6/10 of 50 = 5 x 6 = 30, 7/8 of 64 = 8x7=56		denominator numerator
4k	Link tenths to decimals 1/10 = 0.1 so 0.1 of 50 = 50 ÷ 10 = 5 and 0.6 of 50 = 5 x 6 = 30 Then 5/10 = 1/2; so quick way of finding 5/10 is divide by 2.		decimal point
4l	Problems involving division		
4m	Begin to know division facts for rest of tables		

4n	Find 1/100, 7/100 of a number Stage 1: using multiples of 100 (i.e. whole number answer) Stage 2: any number > 10 (i.e. answer might have 1dp) Stage3: (more able only) any number (i.e. answer might have 2 or even 3)		
4o	CHUNKING with remainders TU ÷ U e.g. 72 ÷ 5 1 4 r 2 5 7 2 - 5 0 (10 x 5) 2 2 - 2 0 (4 x 5) 0 2 (14 x 5) altogether		can't take away anymore chunks of 5 so the 2 becomes 'left over' - the remainder
4p	Standard short division method Stage 1: no remainders 1 3 5 6 ⟌5 Stage 2: with remainders 1 2 r2 7 8 ⟌6		
4q	Extension HTU ÷ U by CHUNKING Possibly Standard short division for TU ÷ U no remainders		