


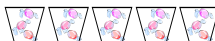
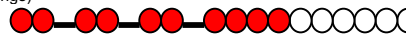
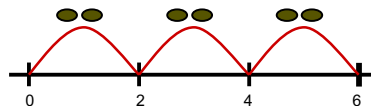
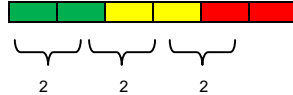
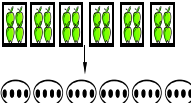
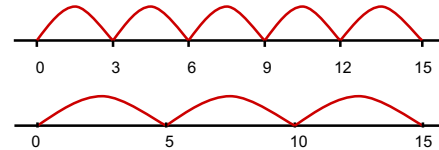
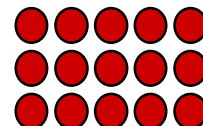
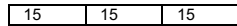
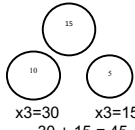
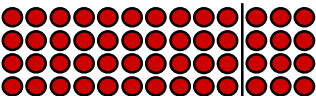

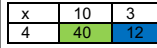
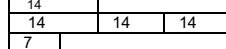
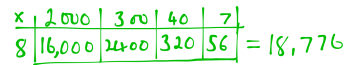
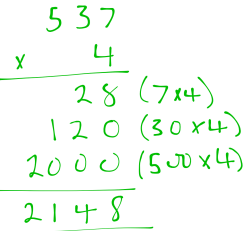
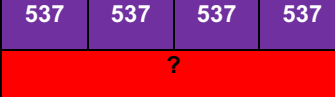


EXPECTATIONS															
YR	Count repeated groups of the same size (1s / 2s / 5s / 10s) ref Overview of learning 5	Practical / recorded using ICT (eg digital photos / pictures on IWB)	Pictures / Objects 3 plates, 2 cakes on each plate: 		Symbols 3 plates, 2 cakes on each plate: 		 2 + 2 + 2	Counting on in 1s and 2s	Counting 2s						
KS1	Solve (practical) problems that involve combining groups of 2, 5 or 10	Practical / recorded using ICT	Pictures / Symbols There are three sweets in one bag. How many sweets are there in five bags? 	Number tracks / Number line (modelled using bead strings)  2 x 3 or 3 x 2 [two groups of three] or [three groups of two] 		 3 x 2 =		Count on / back in 1s, 2s, 5s and 10s Doubles of all numbers to 10 + corresponding halves (see division)	Counting 2s, 5s and 10s						
	Multiplication as repeated addition and arrays Multiplication is commutative (any order)	Pictures / Symbols There are four apples in each box. How many apples in six boxes? 	Repeated addition 5 x 3 or 3 x 5  [ref Multiplication facts ITP]		Arrays 5 x 3 or 3 x 5  Also 14 x 2 as (10 x 2 and 4 x 2)		If three children have 15p each how much money do they have altogether?   x3=30 x3=15 30 + 15 = 45		Count in 2s, 5s and 10s Doubles of numbers to 20	Doubles of TU numbers Derive multiples 2, 5 & 10 Relate to facts (and derive related ÷ facts)					
Lower KS2	TU x U (eg 13 x 4)	Arrays 13 x 4  10 x 4 = 40 3 x 4 = 12 [ref Arrays spreadsheet]		Expanded grid method 13 x 4 		Compact grid method 13 x 4  <table><tr><td>x</td><td>10</td><td>3</td></tr><tr><td>4</td><td>40</td><td>12</td></tr></table>	x	10	3	4	40	12	Partitioning 13 x 4 = 52 10 x 4 = 40 3 x 4 = 12	Recall 2, 3, 4, 8 and 10 times tables (Derive related division facts) Recognise multiples of 2, 5 and 10 up to 1000 Doubles of multiples of 50 to 500	U / TU x / 100 (describe the effect) Doubles of TU / HTU numbers Derive times tables Multiply by 10/1
	x	10	3												
4	40	12													
Record, support and explain: TU x U (eg 16 x 8; 43 x 6)	Partitioning 43 x 6 (estimate: 40 x 6 = 240) 40 x 6 = 240 3 x 6 = 18	Compact grid method 43 x 6 <table><tr><td>x</td><td>40</td><td>3</td></tr><tr><td>6</td><td>240</td><td>18</td></tr></table>	x	40	3	6	240	18	Expanded vertical $\begin{array}{r} 43 \\ \times 6 \\ \hline 18 \quad (3 \times 6) \\ 240 \quad (40 \times 6) \\ \hline 258 \end{array}$	Compact vertical $\begin{array}{r} 43 \\ \times 6 \\ \hline 258 \end{array}$	Joe has 14 sweets. Andy has 3 times as many as Joe. Fred has half as many as Andy. How many do they have altogether?  14 x 4 = + 7 = Method as needed	Derive / recall all facts to 12 x 12 Recognise and use factor pairs			
x	40	3													
6	240	18													
Y5	Refine and use efficient methods: ThHTU x U (e.g 2347 x 8) ThHTU x TU Decimal (1dp) x U (e.g 3.6 x 7)	Grid method  N.B. some children may need to use column addition to total the answer		Expanded vertical 		Compact vertical 4.7 x 8 (estimate: 5 x 8 = 40) $\begin{array}{r} 4.7 \\ \times 8 \\ \hline 37.6 \\ \hline \end{array}$		Bar Visualisation 		Revise facts to 12 x 12 Square numbers Cube numbers Deduce primes to 100 Whole numbers x 10, 100, 1000	Multiply numbers using known facts				

Estimate first



Y6	Use efficient methods: Large Integer x U (e.g 2347 x 28) Large Integer x T U (e.g 2347 x 84) Decimal (upto2dp) x U (e.g 3.62 x 7)	Grid method $\begin{array}{r rrrr} \times & 2000 & 300 & 40 & 7 \\ \hline 20 & 40,000 & 6000 & 800 & 140 \\ 8 & 16,000 & 2400 & 320 & 56 \\ \hline & & & & 46,940 \\ & & & & 18,776 \\ \hline & & & & 65,716 \end{array}$	Expanded vertical $\begin{array}{r} 2347 \\ \times 84 \\ \hline 9408 \\ 18780 \\ \hline 197148 \end{array}$ $\begin{array}{r} 2347 \\ \times 84 \\ \hline 9408 \quad (7 \times 4) \\ 18780 \quad (40 \times 4) \\ \hline 18780 \quad (300 \times 4) \\ 94080 \quad (2000 \times 4) \\ \hline 197148 \end{array}$	Compact vertical 256×18 (estimate: $250 \times 20 = 5000$) $\begin{array}{r} 256 \\ \times 18 \\ \hline 2048 \\ 4608 \\ \hline 4608 \end{array}$ Answer: $256 \times 18 = 4608$ $\begin{array}{r} 3.62 \\ \times 7 \\ \hline 25.34 \end{array}$	Bar method is not an efficient visualisation method in these examples	Rapid recall facts to 12 x 12 Square numbers Cube numbers Identify common primes, factor and multiples	Mental calculation including mixed operation and large numbers
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