



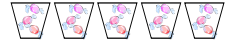
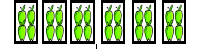

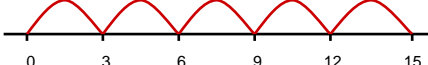

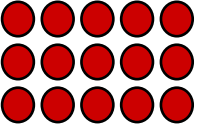
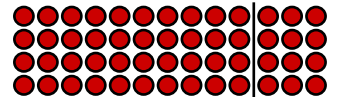
MULTIPLICATION

AGE-RELATED EXPECTATIONS

Recording

Rapid Recall

Mental calculation

YR	Count repeated groups of the same size (1s / 2s / 5s / 10s) <i>ref Overview of learning 5</i>	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: 	Counting on in 1s and 2s	(see recording)																																													
Y1	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? 	Counting with money in 5ps, 2ps, 10ps Real life counting activities e.g. pairs of shoes, pairs of socks, groups of fingers/toes, legs on a dog etc.	Count on / back in 1s, 2s, 5s and 10s Doubles of numbers to 10	(see recording)																																													
Y2	Multiplication as repeated addition and arrays	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 	Count in 2s, 5s and 10s Derive multiples of 2, 5 & 10 Relate to x facts (and derive related ÷ facts) Doubles of numbers to 20	Doubles of TU numbers																																													
Y3	TU x U (eg 13 x 4)	Arrays / partitioning the TU number 13 x 4  10 x 4 = 40 3 x 4 = 12	Grid method 13 x 4 <table border="1"><tr><td>X</td><td>10</td><td>3</td></tr><tr><td>4</td><td>40</td><td>12</td></tr></table> 40 + 12 52	X	10	3	4	40	12	Derive / recall 2, 3, 4, 5, 6 and 10 times tables (Derive related division facts) Recognise multiples of 2, 5 and 10 up to 1000	U / TU x 10 / 100 (describe the effect) Doubles of TU / HTU numbers																																								
X	10	3																																																	
4	40	12																																																	
Y4	Record, support and explain: TU x U (eg 16 x 8; 43 x 6)	Partitioning to support a mental calculation 43 x 6 (estimate: 40 x 6 = 240) 40 x 6 = 240 3 x 6 = 18	Grid method 43 x 6 <table border="1"><tr><td>X</td><td>40</td><td>3</td></tr><tr><td>6</td><td>240</td><td>18</td></tr></table> Use appropriate method of addition to calculate : 240 + 18 = 258 240 + 18 258	X	40	3	6	240	18	Derive / recall facts to 10 x 10 Multiples of numbers to 10 up to the 10 th multiple	Numbers up to 1000 x 10 / 100 (whole number answers and understand the effect) Doubles of TU / HTU numbers and multiples of 10 / 100																																								
X	40	3																																																	
6	240	18																																																	
Y5	Refine and use efficient methods: HTU x U TU x TU U.t x U	Grid method 47 x 36 (estimate: 50 x 40 = 2000) <table border="1"><tr><td>x</td><td>40</td><td>7</td></tr><tr><td>30</td><td>1200</td><td>210</td></tr><tr><td>6</td><td>240</td><td>42</td></tr><tr><td></td><td></td><td>1692</td></tr></table>	x	40	7	30	1200	210	6	240	42			1692	Expanded vertical 237 x 4 (estimate: 250 x 4 = 1000) <table border="1"><tr><td>237</td><td>x</td><td>4</td></tr><tr><td>28</td><td></td><td></td></tr><tr><td>120</td><td></td><td></td></tr><tr><td>800</td><td></td><td></td></tr><tr><td>948</td><td></td><td></td></tr></table>	237	x	4	28			120			800			948			Compact vertical 4.7 x 8 (estimate: 5 x 8 = 40) <table border="1"><tr><td>4.7</td><td>x</td><td>8</td></tr><tr><td>37.6</td><td></td><td></td></tr><tr><td>5</td><td></td><td></td></tr></table>	4.7	x	8	37.6			5			Recall quickly facts to 10 x 10 Use facts to multiply pairs of multiples of 10 / 100 Use known facts to derive other facts [Find common multiples of two numbers]	TU x U (eg 12 x 9) TU x TU (eg 16 x 25) Doubles of U.t / 0.th Multiply whole numbers / decimals by 10 / 100 / 1000									
x	40	7																																																	
30	1200	210																																																	
6	240	42																																																	
		1692																																																	
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948																																																			
4.7	x	8																																																	
37.6																																																			
5																																																			
Y6	Use efficient methods: Integer x U (eg 2307 x 8) Decimal x U (eg 31.6 x 7) TU x TU HTU x TU	Grid method 5.65 x 9 (estimate: 6 x 9 = 54) <table border="1"><tr><td>x</td><td>5</td><td>0.6</td><td>0.05</td></tr><tr><td>9</td><td>45</td><td>5.4</td><td>0.45</td></tr><tr><td></td><td></td><td></td><td>50.85</td></tr></table> Answer: 5.65 x 9 = 50.85	x	5	0.6	0.05	9	45	5.4	0.45				50.85	Expanded vertical 2327 x 8 (estimate: 2300 x 10 = 23 000) <table border="1"><tr><td>2327</td><td>x</td><td>8</td></tr><tr><td>56</td><td></td><td></td></tr><tr><td>160</td><td></td><td></td></tr><tr><td>2400</td><td></td><td></td></tr><tr><td>16000</td><td></td><td></td></tr><tr><td>18616</td><td></td><td></td></tr></table>	2327	x	8	56			160			2400			16000			18616			Compact vertical 256 x 18 (estimate: 250 x 20 = 5000) <table border="1"><tr><td>256</td><td>x</td><td>18</td></tr><tr><td>2560</td><td></td><td></td></tr><tr><td>2048</td><td></td><td></td></tr><tr><td>4608</td><td></td><td></td></tr><tr><td>1</td><td></td><td></td></tr></table> Answer: 256 x 18 = 4608	256	x	18	2560			2048			4608			1			Use facts up to 10 x 10 to derive facts involving multiples of 10 / 100 (eg 80 x 30) and decimals (eg 0.8 x 7) Derive squares of numbers to 12 x 12 Derive corresponding squares of multiples of 10	TU x U U.t x U Integer x 1000 / 100 / 10 / 0.1 / 0.01
x	5	0.6	0.05																																																
9	45	5.4	0.45																																																
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Estimate first

