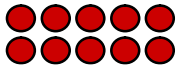
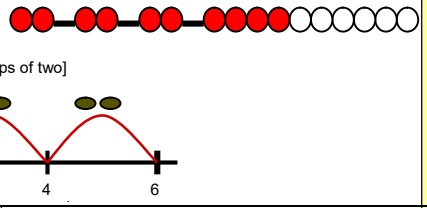
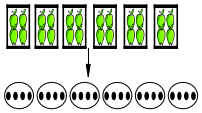
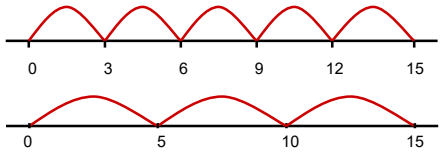
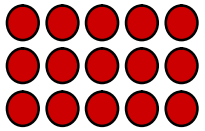
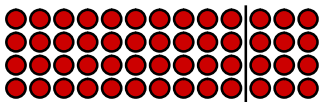
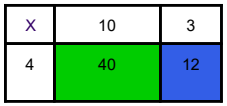
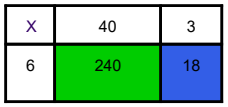
MULTIPLICATION — **AGE-RELATED EXPECTATIONS** — ← **Recording** → — Rapid Recall — Mental calculation

Estimate first ↓ ↑

YR	Count repeated groups of the same size (1s / 2s / 5s / 10s) Doubling	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 1 step problems that involve combining groups of 2, 5 or 10	**WITH CT SUPPORT** Arrays 5 x 2 or 2 x 5  Also **14 x 2** as (10 x 2 and 4 x 2)	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, three times] or [three groups of two]	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 	Arrays 5 x 3 or 3 x 5  Also **14 x 2** as (10 x 2 and 4 x 2)	Count in 2s,3s & 5s from 0 and 10s from any number Derive multiples of 2, 3, 4, 5 & 10 Relate to x facts (and derive related ÷ facts) Doubles of numbers to 20	Doubles of TU numbers
Y3	**Progressing to Formal Written Method** TU x U (eg 13 x 4)	Arrays 13 x 4  10 x 4 = 40 3 x 4 = 12	Partitioning (possible use of number line to record steps) 13 x 4 = 52 10 x 4 = 40 3 x 4 = 12	**Compact** grid method 13 x 4 	Count on in 4, 8, 50, 100 Derive / recall 3, 4, & 8 times tables (Derive related division facts) Recognise multiples of 2, 5 and 10 up to 1000	U / TU x 10 / 100 (describe the effect) TU x U Doubles of TU / HTU numbers
Y4	**Formal Written Layout** TU x U (eg 16 x 8; 43 x 6) HTU x U	**Compact** grid method 43 x 6 	**Expanded** vertical 43 x 6 18 (3 x 6) 240 (40 x 6) 258	**Compact** vertical 43 x 6 258 1	Count on in 6, 7, 9, 25, 1000 Derive / recall facts to 12 x 12 Multiples of numbers to 12 up to the 10th multiple	Numbers up to 1000 x 0/ 1/ 10 / 100 (whole number answers and understand the effect) Doubles of TU / HTU numbers and multiples of 10 / 100 Multiply 3 numbers
Y5	**Formal Written Method Long multiplication for 2 digit numbers** HTU x U TU x TU U.t x U HTU x TU ThHTU x U/ TU	Grid method 47 × 36 (estimate: 50 × 40 = 2000) × 40 7 30 1200 210 1410 6 240 42 282 1692	**Expanded** vertical 2327 x 8 (estimate: 2300 x 10 = 23 000) 2327 x 8 56 160 2400 16000 18616	**Compact** vertical 4.7 × 8 (estimate: 5 × 8 = 40) 4.7 × 8 37.6 5	Continue to recall quickly facts to 12 x 12 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
Y6	**Formal Written Method Long multiplication** ThHTU x TU Integer x U (eg 2307 x 8) Decimal x U (eg 31.6 x 7) TU x TU HTU x TU	**Compact** vertical 256 × 18 (estimate: 250 × 20 = 5000) 256 × 18 2560 2048 4608 1 Answer: 256 × 18 = 4608			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