

Calculation Policy

Multiplication

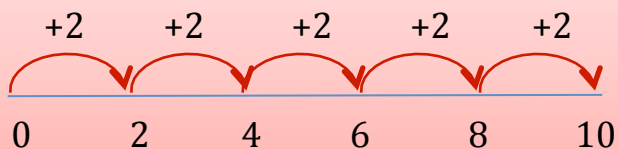
Stage 1 – Multiplication as ‘groups of’ in a practical context

Activities might include:

- Counting in twos by jumping along a numberline.
- Counting the wheels on the bikes in the playground.
- Counting pairs of objects.
- Counting fingers in tens.
- Counting sweets in bags of five.

Stage 2

Use multiplication as repeated addition by counting in multiples using a numberline or 100 square.



Stage 3 – Describe an array



Stage 4

Multiply 1-digit numbers by 1-digit numbers using:

- Known multiplication facts
- A multiplication grid

Stage 5

Multiply one, two and three digit numbers by 10 using a place value slider:

$$4 \times 10 = 40$$

$$23 \times 10 = 230$$

Stage 6

Multiply single digit numbers by multiples of 10 using known facts:

$$5 \times 3 = 15$$

$$50 \times 3 = 150$$

Stage 7

Multiply by partitioning and recombining. Use place value cards and multiplication grids. 34×5 becomes:

$30 \times 5 = 150$
 $4 \times 5 = 20$
 $150 + 20 = 170$

Stage 8

Set out partitioned multiplication in columns. Be clear about where each answer comes from. Relate to partitioning.

$$\begin{array}{r}
 23 \times \\
 \hline
 6 \\
 18 \quad (3 \times 6) \\
 120 \quad (20 \times 6) \\
 \hline
 138
 \end{array}$$

Stage 9 - Short multiplication

$$\begin{array}{r}
 23 \times \\
 \hline
 6 \\
 138 \\
 \hline
 1
 \end{array}$$

Once secure with TU x U, move on to larger numbers multiplied by a single digit.

Stage 10 - Expanded long multiplication

$$\begin{array}{r}
 24 \times \\
 \hline
 16 \\
 24 \quad (4 \times 6) \\
 120 \quad (20 \times 6) \\
 40 \quad (4 \times 10) \\
 \hline
 200 \quad (20 \times 10) \\
 384
 \end{array}$$

Stage 11 - Long multiplication.

The small 2 within the number 144 is the ‘carried’ 20 from $6 \times 4 = 24$.

$$\begin{array}{r}
 24 \times \\
 \hline
 16 \\
 144 \quad (24 \times 6) \\
 240 \quad (24 \times 10) \\
 \hline
 384
 \end{array}$$