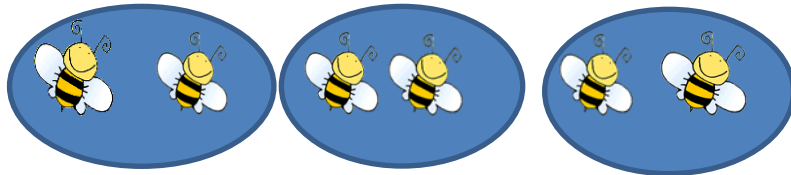


# Multiplication x

## Stage 1

Begin to understand the concept of 'multiplication' and recognise the 'x' symbol. Children use Numicon and visual representations to show groupings of amounts.

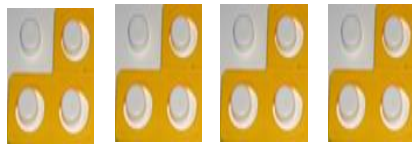


3 lots of 2

$$3 \times 2 = 6$$

4 groups of 3

$$4 \times 3 = 12$$



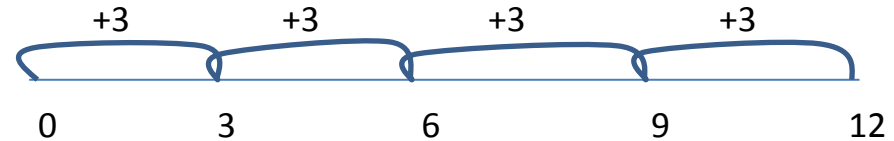
$$3 + 3 + 3 + 3$$

REPEATED ADDITION

## Stage 2

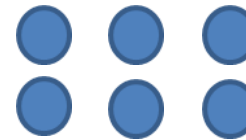
To use a number line to show multiplication as repeated addition.

$$4 \times 3 = 12 \quad 3 + 3 + 3 + 3$$



To use an **array** to represent multiplication and know multiplication can be done in any order. Use x symbol with confidence.

$$2 \times 3 = 6$$



$$3 \times 2 = 6$$

**Recommended by the end of year 2**

## Stage 3

To use '**grid method**' as an informal method to carry out multiplication calculations. Use numbers appropriate to current level of attainment.

Begin by using an array in a grid.

Using an array to leading to grid method

$\begin{array}{r} 3 \times 3 \\ \hline 3 \times 3 \\ \hline 9 \end{array}$	$\begin{array}{r} 26 \times 3 \\ \hline 20 \times 3 = 60 \\ 6 \times 3 = 18 \\ \hline 60 + 18 = 78 \end{array}$	$\begin{array}{r} 374 \times 4 \\ \hline 300 \times 4 = 1200 \\ 70 \times 4 = 280 \\ 4 \times 4 = 16 \\ \hline 1200 + 280 + 16 = 1496 \end{array}$
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**Recommended by the end of year 4**

## Stage 4

To use formal written methods to multiply 4 digits by 1 or 2 digit numbers, extending to long multiplication.

**Short method** leading to

(TU x U)

$\begin{array}{r} 23 \\ \times 7 \\ \hline 21 \\ + 140 \text{ (20 x 7)} \\ \hline 161 \end{array}$	$\begin{array}{r} 23 \\ \times 7 \\ \hline 161 \\ \hline 2 \end{array}$
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**Long Multiplication**

(HTU x T U)

$$124 \times 26$$

$$\begin{array}{r} 124 \\ \times 26 \\ \hline 744 \\ + 2480 \\ \hline 3224 \end{array}$$

Children should be practising and securing these formal written methods in years 5 and 6.

