

Multiplication

Twice times
groups of per
double **x** each
equal groups
multiply
altogether

Multiplication

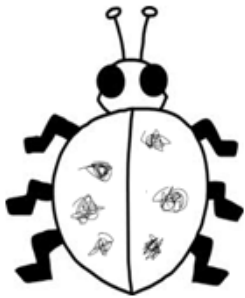
Reception:

Children will look at doubling and may draw a picture or jotting to show this.



Year 1:

Children look at real life examples and record through drawings or jottings.



A child's jotting showing halving six spots between two sides of a ladybird.

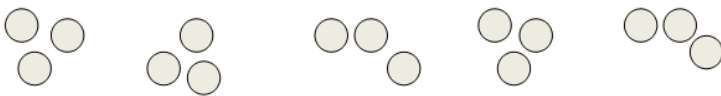


A child's jotting showing how they shared the apples at snack time between two groups.

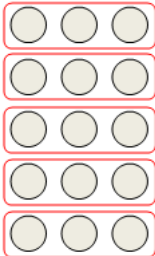


Year 2:

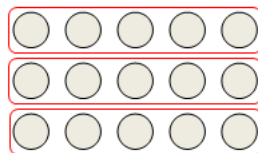
Children will use counters and draw groups of to multiply.



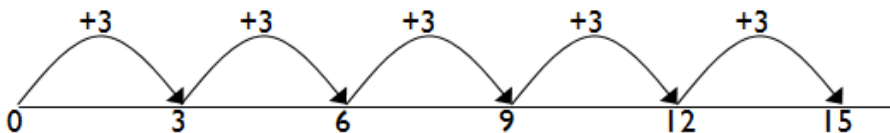
This can then be rearranged into an array or number line.



$$3 + 3 + 3 + 3 + 3 = 15$$

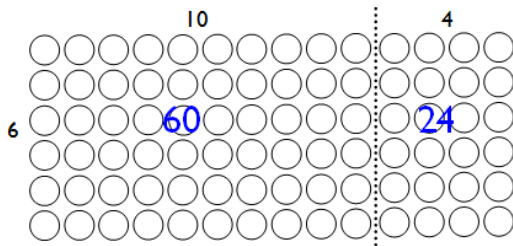


$$5 + 5 + 5 = 15$$



Year 3:

Children continue to use arrays before moving on to the grid method.



x	10	4
6	60	24

Children can then move on to using the grid method with larger two digit numbers.

$$37 \times 6$$

x	30	7
6	180	42

$$\begin{array}{r} 180 \\ + 42 \\ \hline 222 \end{array}$$

Year 4:

Children will continue to use the grid method for two digit and three digit numbers multiplied by one digit number.

$$346 \times 8$$

x	300	40	6
8	2400	320	48

$$\begin{array}{r} 2400 \\ + 320 \\ + 48 \\ \hline 2768 \end{array}$$

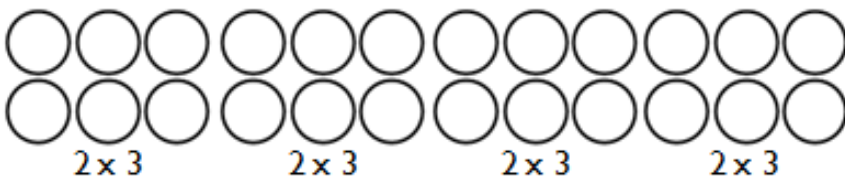
$$79 \times 8$$

x	70	9
8	560	72

$$\begin{array}{r} 560 \\ + 72 \\ \hline 632 \end{array}$$

Children will also use arrays and jottings to multiply three numbers.

$$(2 \times 3) \times 4 = 24$$



24 counters

$$3 \times 4 \times 5 = 60$$

$$(3 \times 4) \times 5 =$$

12

$$12 \times 5 = 60$$

Year 5:

Grid method continues to be used with higher numbers.

$$4346 \times 8$$

x	4 000	300	40	6
8	32 000	2400	320	48

$$\begin{array}{r} 32000 \\ + 2400 \\ + 320 \\ + 48 \\ \hline 34768 \end{array}$$

$$2693 \times 24$$

x	2000	600	90	3
20	40000	12000	1800	60
4	8000	2400	360	12

$$\begin{array}{r} 40000 \\ + 8000 \\ + 12000 \\ + 2400 \\ + 1800 \\ + 360 \\ + 60 \\ + 12 \\ \hline 64632 \end{array}$$

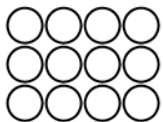
Children investigate factors and multiples using arrays.



1 and 12 are factors of 12
12 is a multiple of 1 and 12

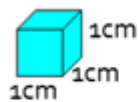
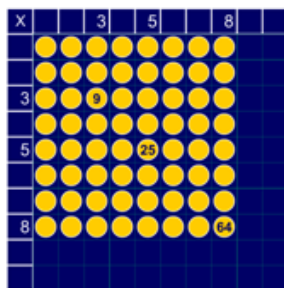


2 and 6 are factors of 12
12 is a multiple of 2 and 6



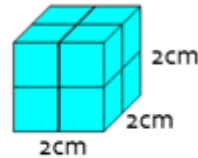
3 and 4 are factors of 12
12 is a multiple of 3 and 4

They will also investigate square numbers and cubed numbers.



$$1\text{cm} \times 1\text{cm} \times 1\text{cm} = 1\text{cm}^3$$

$$1^3 = 1$$



$$2\text{cm} \times 2\text{cm} \times 2\text{cm} = 8\text{cm}^3$$

$$2^3 = 8$$

Year 6:

Grid method continues to be used with decimals.

$$4.92 \times 3$$

x	4	0.9	0.02
3	12	2.7	0.06

$$\begin{array}{r} 12 \\ + 2.7 \\ + 0.06 \\ \hline 14.76 \end{array}$$