

Stage 1

Children are encouraged to develop a mental image of the size of numbers. They learn to think about equal groups or sets of objects in practical, real life situations. They begin to record these situations using pictures.



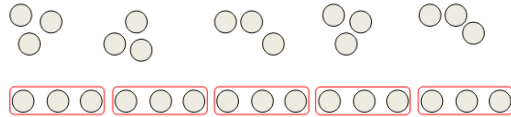
A child's jotting showing fingers on each hand as a double.



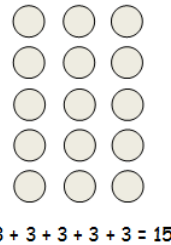
A child's jotting showing double three as three cookies on each plate.

Stage 2

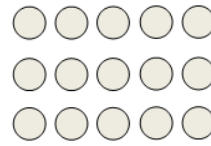
Children understand that multiplication is repeated addition and that can be done by counting in equal steps/groups.



Children can then be introduced to the image of a rectangular array, initially through real items such as egg boxes, baking trays, ice cube trays, wrapping paper etc. and using these to show that counting up in equal groups can be a quicker way of finding a total.



Children also understand that 3×5 is the same as 5×3

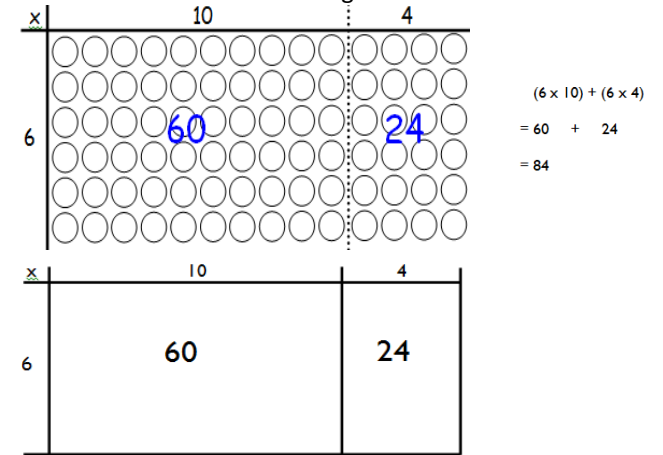


$5 + 5 + 5 = 15$

Stage 3

Children will continue to use arrays to lead into the grid method of multiplication.

14×6
The 14 is partitioned (split) into 10 and 4.
The answer to 6×10 is found = 60
The answer to 6×4 is found = 24
The two answers are added together $60 + 24 = 84$



Stage 4

In this stage, the array is removed and children use the grid method.

79×8

x	70	9
8	560	72

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

346×8

x	300	40	6
8	2400	320	48

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

Stage 5

Children will continue to use the grid method to complete calculations with a greater number of digits.

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

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

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

$= 53\ 860$
 $+ 10\ 772$
 $\hline 64\ 632$

Stage 6

Children will take their knowledge of the grid method and use this to help them develop a written method of column multiplication.

Step 1

x	300	60	8
6	1 800	360	48

$+ \begin{array}{r} 1800 \\ 360 \\ 48 \\ \hline 2208 \end{array}$

Step 2

Th	H	T	U
	3	6	8
x	6		
	4	8	
	3	6	0
+	1	8	0
	2	2	0
			8

Step 3

Th	H	T	U
	3	6	8
x	6		
	2	2	0
			8

Children will then use this method to multiply three digit numbers by two digit numbers and decimals by a one digit number.