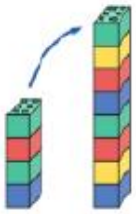
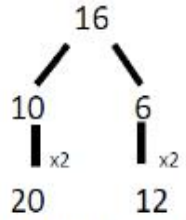
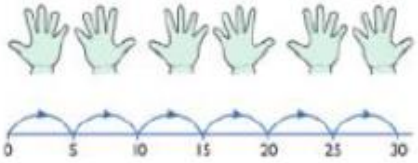
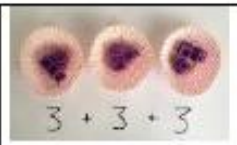
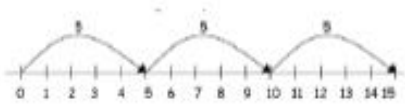
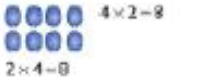
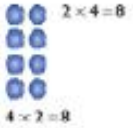
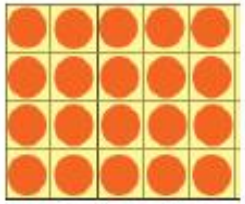
PROGRESSION IN MULTIPLICATION

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
• Doubling • Counting in multiples • Arrays (with support)	• Doubling • Counting in multiples • Repeated addition • Arrays- showing commutative multiplication	• Counting in multiples • Repeated addition • Arrays- showing commutative multiplication • Grid method	• Column multiplication (2 and 3 digit multiplied by 1 digit)	• Column multiplication (up to 4 digit numbers multiplied by 1 or 2 digits)	• Column multiplication (multi digit up to 4 digits by a 2 digit number)

	Concrete	Pictorial	Abstract
Doubling	Use practical activities to show how to double a number.  double 4 is 8 4 × 2 = 8	Draw pictures to show how to double a number. Double 4 is 8 	 Partition a number and then double each part before recombining it back together.
Counting in multiples	  Count in multiples supported by concrete objects in equal groups.	 Use a number line or pictures to continue support in counting in multiples.	Count in multiples of a number aloud. Write sequences with multiples of numbers. 2, 4, 6, 8, 10 5, 10, 15, 20, 25 , 30

PROGRESSION IN MULTIPLICATION

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
• Doubling • Counting in multiples • Arrays (with support)	• Doubling • Counting in multiples • Repeated addition • Arrays- showing commutative multiplication	• Counting in multiples • Repeated addition • Arrays- showing commutative multiplication • Grid method	• Column multiplication (2 and 3 digit multiplied by 1 digit)	• Column multiplication (up to 4 digit numbers multiplied by 1 or 2 digits)	• Column multiplication (multi digit up to 4 digits by a 2 digit number)

	Concrete	Pictorial	Abstract
Repeated addition	   Use different objects to add equal groups.	There are 3 plates. Each plate has 2 star biscuits on. How many biscuits are there?  2 add 2 add 2 equals 6  5 + 5 + 5 = 15	Write addition sentences to describe objects and pictures. 
Arrays- showing commutative multiplication	Create arrays using counters/ cubes to show multiplication sentences.   	Draw arrays in different rotations to find commutative multiplication sentences.    Link arrays to area of rectangles.	Use an array to write multiplication sentences and reinforce repeated addition.  5 + 5 + 5 = 15 3 + 3 + 3 + 3 + 3 = 15 5 x 3 = 15 3 x 5 = 15

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
• Doubling • Counting in multiples • Arrays (with support)	• Doubling • Counting in multiples • Repeated addition • Arrays- showing commutative multiplication	• Counting in multiples • Repeated addition • Arrays- showing commutative multiplication • Grid method	• Column multiplication (2 and 3 digit multiplied by 1 digit)	• Column multiplication (up to 4 digit numbers multiplied by 1 or 2 digits)	• Column multiplication (multi digit up to 4 digits by a 2 digit number)

PROGRESSION IN MULTIPLICATION

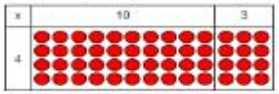
Concrete

Pictorial

Abstract

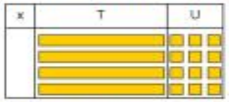
Grid Method

Show the link with arrays to first introduce the grid method.



4 rows of 10
4 rows of 3

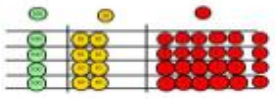
Move on to using Base 10 to move towards a more compact method.



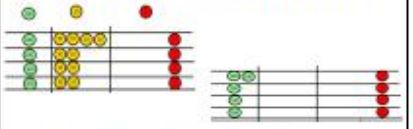
4 rows of 13

Move on to place value counters to show how we are finding groups of a number.We are multiplying by 4 so we need 4 rows.

Fill each row with 126.



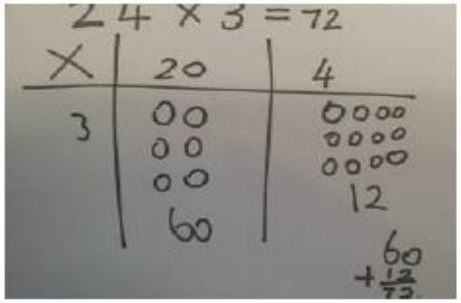
Add up each column, starting with the ones making any exchanges needed.



Then you have your answer.

Children can represent the work they have done with place value counters in a way that they understand.

They can draw the counters, using colours to show different amounts or just use circles in the different columns to show their thinking as shown below.



Start with multiplying by one digit numbers and showing the clear addition alongside the grid.

×	30	5
7	210	35

210 + 35 = 245

Moving forward, multiply by a 2 digit number showing the different rows within the grid method.

	10	8
10	100	80
3	30	24

x	1000	300	40	2
10	10000	3000	400	20
8	8000	2400	320	16

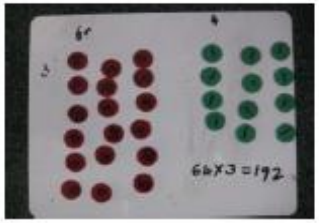
PROGRESSION IN MULTIPLICATION

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
• Doubling • Counting in multiples • Arrays (with support)	• Doubling • Counting in multiples • Repeated addition • Arrays- showing commutative multiplication	• Counting in multiples • Repeated addition • Arrays- showing commutative multiplication • Grid method	• Column multiplication (2 and 3 digit multiplied by 1 digit)	• Column multiplication (up to 4 digit numbers multiplied by 1 or 2 digits)	• Column multiplication (multi digit up to 4 digits by a 2 digit number)

Column multiplication

Concrete

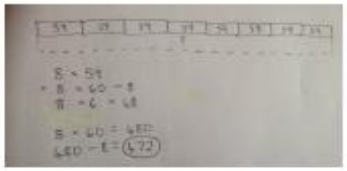
Children can continue to be supported by place value counters at the stage of multiplication.

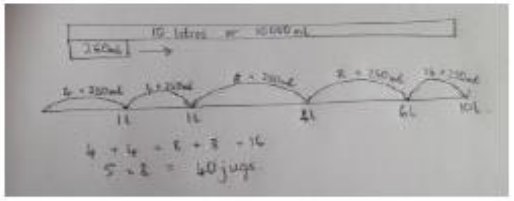


It is important at this stage that they always multiply the ones first and note down their answer followed by the tens which they note below.

Pictorial

Bar modelling and number lines can support learners when solving problems with multiplication alongside the formal written methods.





Abstract

Start with long multiplication, reminding the children about lining up their numbers clearly in columns.

If it helps, children can write out what they are solving next to their answer.

```
  32
x 24
   8   (4 x 2)
 120   (4 x 30)
  40   (20 x 2)
 600   (20 x 30)
 768
```

This moves to the more compact method.

```
   1342
x    18
-------
  13420
  10736
-------
  24156
-------
```