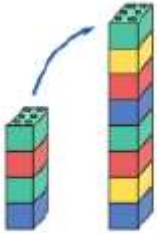

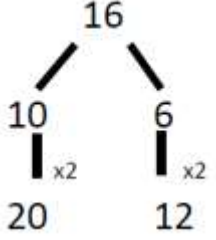
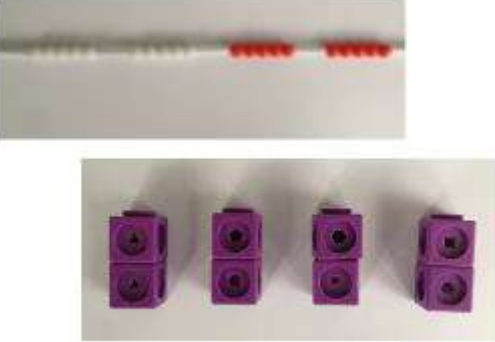
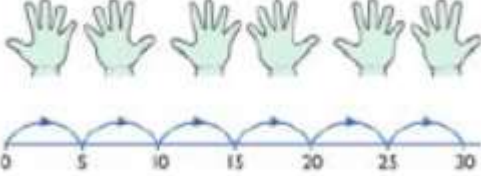


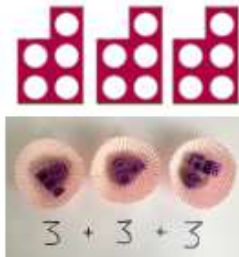
Yr	Multiplication Strategies	Concrete	Pictorial	Abstract
R Yr1	Doubling	<p>Use practical activities to show how to double a number.</p>  <p>double 4 is 8 $4 \times 2 = 8$</p>	<p>Draw pictures to show how to double a number.</p> <p>Double 4 is 8</p> 	 <p>Partition a number and then double each part before recombining it back together.</p>
Yr 1/2	Counting in Multiples	 <p>Count in multiples supported by concrete objects in equal groups.</p>	 <p>Use a number line or pictures to continue support in counting in multiples.</p>	<p>Count in multiples of a number aloud.</p> <p>Write sequences with multiples of numbers.</p> <p>2, 4, 6, 8, 10</p> <p>5, 10, 15, 20, 25, 30</p>

Yr
1/2

Repeated Addition



Use different
objects to add
equal groups



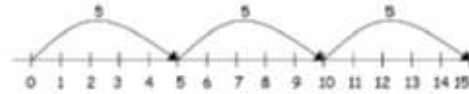
Using Cuisenaire and number tracks



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.



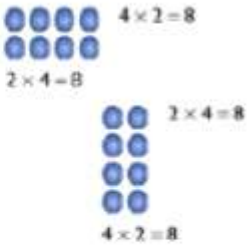
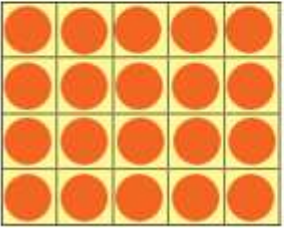
$$2 + 2 + 2 + 2 + 2 = 10$$

Yr 2/3 4
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.

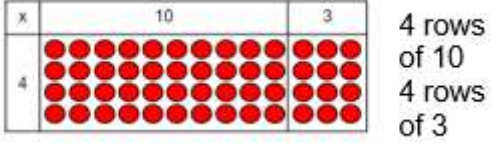
Use an array to write multiplication sentences and reinforce repeated addition.



$5 + 5 + 5 = 15$
 $3 + 3 + 3 + 3 + 3 = 15$
 $5 \times 3 = 15$
 $3 \times 5 = 15$


4
Grid Method

Show link with arrays to first introduce the grid method.



4 rows of 10
 4 rows of 3

Move on to Cuisenaire to move towards a more compact method



4 rows of 13

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.

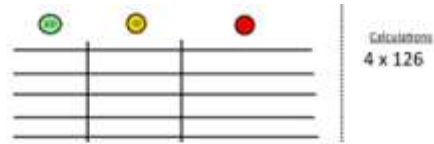
Start with multiplying by one digit numbers and showing the clear addition alongside the grid.

x	30	5
7	210	35

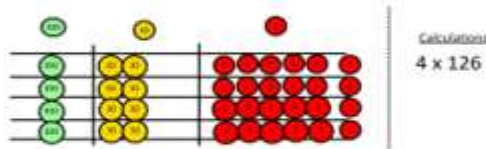
$210 + 35 = 245$

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

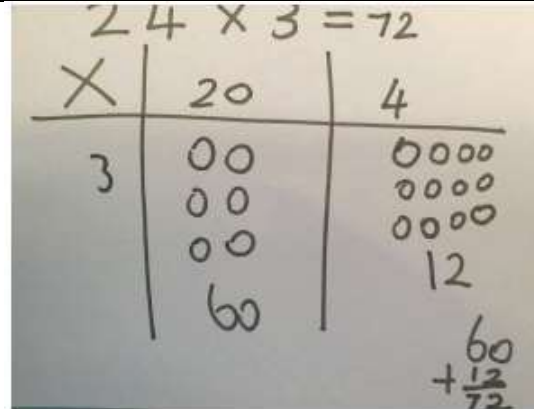
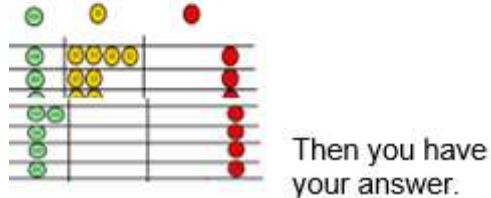
Move on to place value counters to show how we are finding groups of a numbers. We are multiplying by 4 so we need 4 rows.



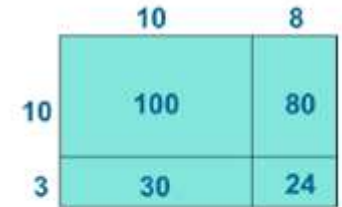
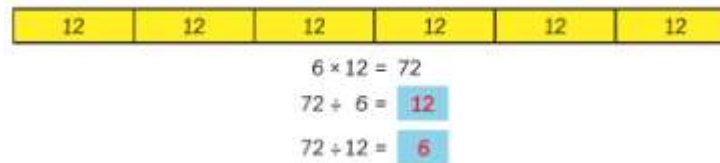
Fill each row with 126.



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



Use the bar model



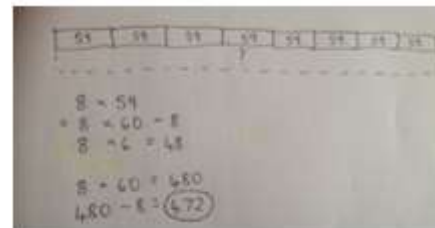
x	1000	300	40	2
10	10000	3000	400	20
8	8000	2400	320	16

Yr
4
5
6

Column multiplication

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

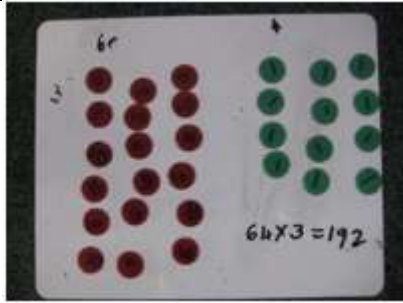
Bar modelling and number lines can support learners when solving problems with multiplication alongside the formal written methods.



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

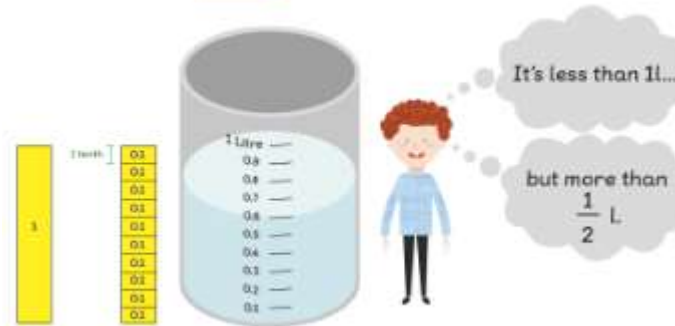
If it helps, children can write out what they are solving next to their answer.

T O
3 2



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

Volume of water = 0.6 l



$$\begin{array}{r}
 \times 24 \\
 600 \quad (20 \times 30) \\
 40 \quad (20 \times 2) \\
 120 \quad (4 \times 30) \\
 \hline
 8 \quad (4 \times 2) \\
 768
 \end{array}$$

$$\begin{array}{r}
 T \quad 0 \\
 7 \quad 4 \\
 \times 6 \quad 3 \\
 \hline
 4 \quad 2 \quad 0 \quad 0 \\
 2 \quad 4 \quad 0 \\
 2 \quad 1 \quad 0 \\
 \hline
 1 \quad 2 \\
 4 \quad 6 \quad 6 \quad 2
 \end{array}$$

This moves to the more compact method.

$$\begin{array}{r}
 2 3 1 \\
 1342 \\
 \times 18 \\
 \hline
 13420 \\
 10736 \\
 \hline
 24156 \\
 1
 \end{array}$$

Remember – children must record place value headings.