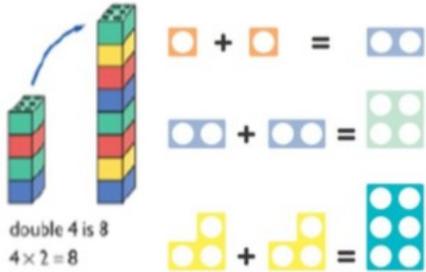
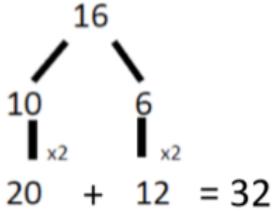
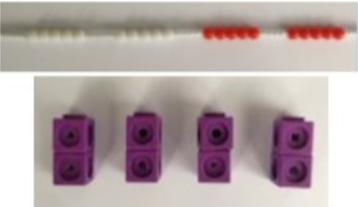
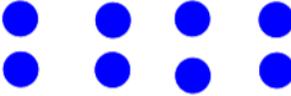
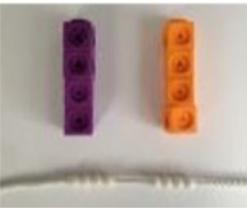
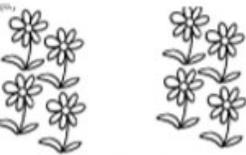


Year 1	Multiplication		
Objective and Strategy	Concrete	Pictorial	Abstract
Doubling	<p>Use practical activities using manipulatives including cubes and Numicon to demonstrate doubling</p>  <p>double 4 is 8 $4 \times 2 = 8$</p>	<p>Draw pictures to show how to double numbers</p> <p>Double 4 is 8</p> 	<p>Partition a number and then double each part before recombining it back together.</p>  <p>$20 + 12 = 32$</p>
Counting in multiples	<p>Count the groups as children are skip counting, children may use their fingers as they are skip counting</p> 	 <p>Children make representations to show 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>
Making equal groups and counting the total	  <p>$\square \times \square = 8$</p> <p>Use manipulatives to create equal groups.</p>	<p>Draw  to show $2 \times 3 = 6$</p> <p>Draw and make representations</p>	<p>$2 \times 4 = 8$</p>

Year 1

Multiplication Continued

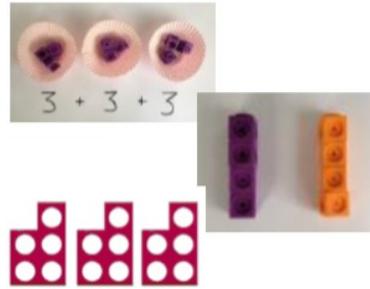
Objective and Strategy

Concrete

Pictorial

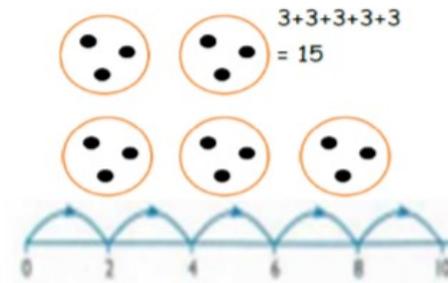
Abstract

Repeated addition



Use different objects to add equal groups

Use pictorial including number lines to solve prob
There are 3 sweets in one bag.
How many sweets are in 5 bags altogether?

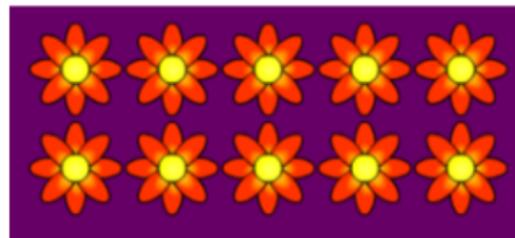


Write addition sentences to describe objects and pictures.

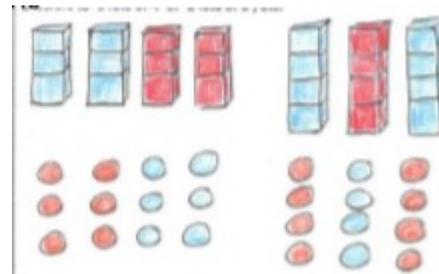


Understanding arrays

Use objects laid out in arrays to find the answers to 2 lots 5, 3 lots of 2 etc.

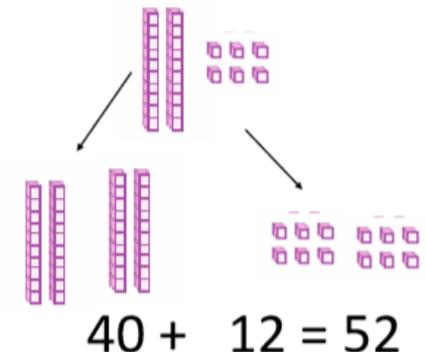
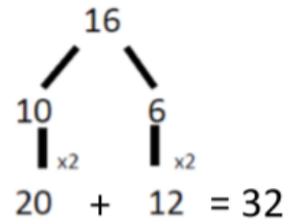
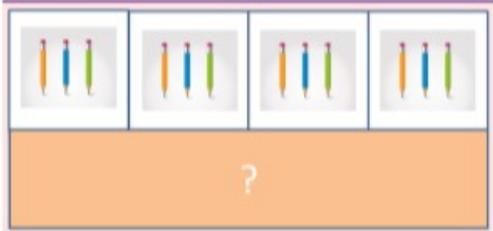
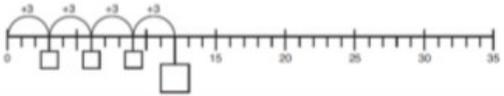
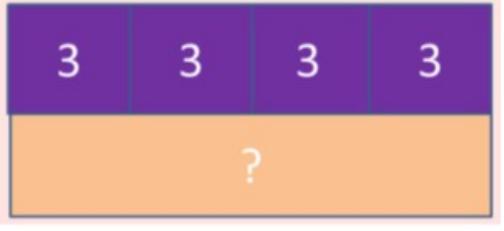


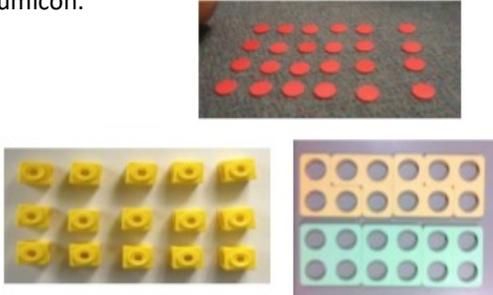
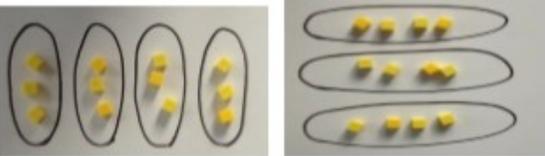
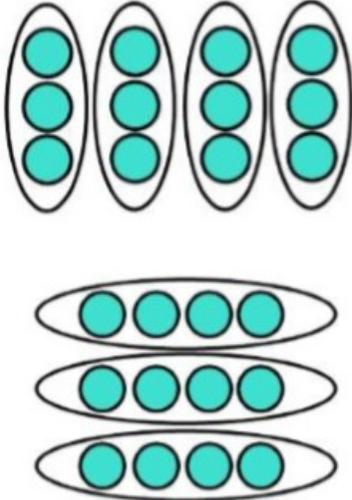
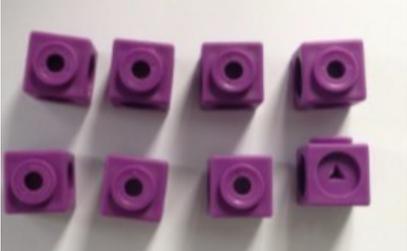
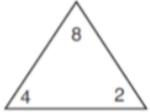
Draw representations of arrays



$$3 \times 2 = 6$$

$$2 \times 5 = 10$$

Year 2	Multiplication		
Objective and Strategy	Concrete	Pictorial	Abstract
Doubling	<p>Model doubling using dienes and PV counters.</p>  <p>$40 + 12 = 52$</p>	<p>Draw pictures and representations to show how to double numbers</p>	<p>Partition a number and then double each part before recombining it back together.</p>  <p>$20 + 12 = 32$</p>
<p>Counting in multiples of 2, 3, 4, 5, 10 from 0 (repeated addition)</p>	<p>Count the groups as children are skip counting, children may use their fingers as they are skip counting. Use bar models.</p>  <p>$5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 = 40$</p>  	<p>Number lines, counting sticks and bar models should be used to show representation of counting in:</p>    	<p>Count in multiples of a number aloud.</p> <p>Write sequences with multiples of numbers.</p> <p>0, 2, 4, 6, 8, 10</p> <p>0, 3, 6, 9, 12, 15</p> <p>0, 5, 10, 15, 20, 25, 30</p> <p>$4 \times 3 = \square$</p>

Year 2	Multiplication Continued		
Objective and Strategy	Concrete	Pictorial	Abstract
<p>Multiplication is commutative</p>	<p>Create arrays using counters and cubes and Numicon.</p>  <p>Pupils should understand that an array can represent different equations and that, as multiplication is</p> 	<p>Use representations of arrays to show different calculations and explore commutativity.</p> 	<p>$12 = 3 \times 4$ $12 = 4 \times 3$</p> <p>Use an array to write multiplication sentences and reinforce repeated addition.</p>  <p>$5 + 5 + 5 = 15$ $3 + 3 + 3 + 3 + 3 = 15$ $5 \times 3 = 15$ $3 \times 5 = 15$</p>
<p>Using the Inverse</p> <p>This should be taught alongside division, so pupils learn how they work alongside each other.</p>	<p>Use manipulatives</p> 	 <p><input type="text"/> \times <input type="text"/> = <input type="text"/> <input type="text"/> \times <input type="text"/> = <input type="text"/> <input type="text"/> \div <input type="text"/> = <input type="text"/> <input type="text"/> \div <input type="text"/> = <input type="text"/></p>	<p>$2 \times 4 = 8$ $4 \times 2 = 8$ $8 \div 2 = 4$ $8 \div 4 = 2$ $8 = 2 \times 4$ $8 = 4 \times 2$ $2 = 8 \div 4$ $4 = 8 \div 2$</p> <p>Show all 8 related fact family sentences.</p>

Year 3

Multiplication

Objective and Strategy

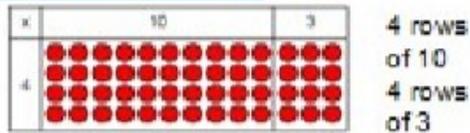
Concrete

Pictorial

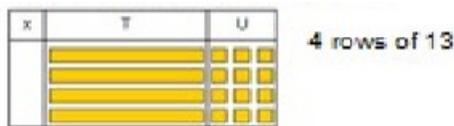
Abstract

Grid method

Show the links with arrays to first introduce the grid method



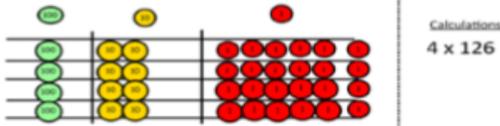
Move onto base ten to move towards a more compact method.



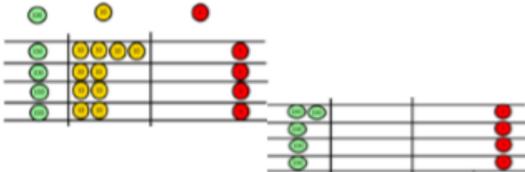
Move on to place value counters to show how we are finding groups of a number. We are multiplying by 4 so we need 4 rows



Fill each row with 126



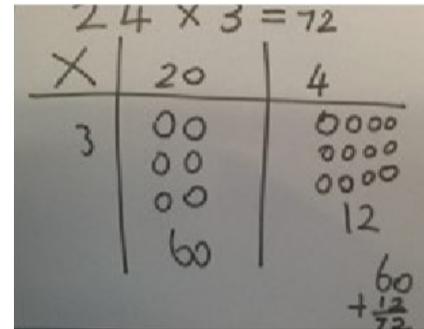
Add up each column, starting with the ones making any exchanges needed



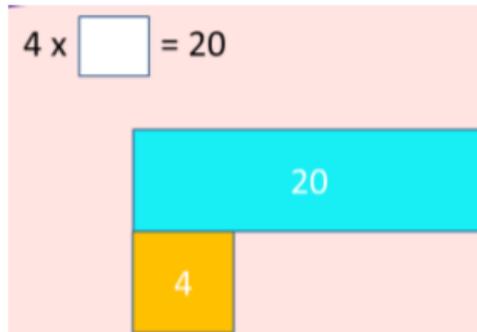
Then you have your answer.

Children can represent their work with place value counters in a way that they understand.

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



Bar model are used to explore missing numbers



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.

	10	8
10	100	80
3	30	24

Year 4

Multiplication

Objective and Strategy

Concrete

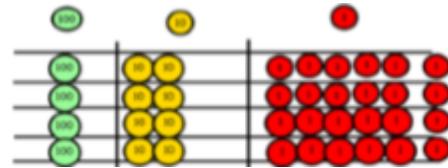
Pictorial

Abstract

Grid method recap from year 3 for 2 digits x 1 digit

Move to multiplying 3 digit numbers by 1 digit. (year 4 expectation)

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

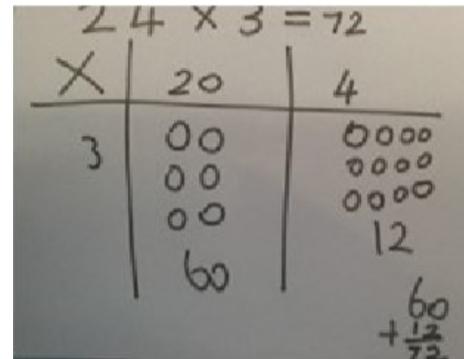


Fill each row with 126

Add up each column starting with the ones and make exchanges where necessary

Children can represent their work with place value counters in a way that they understand.

They can draw the counters using colours to show different amounts or just use the 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

$$210 + 35 = 245$$

Column multiplication

Children can continue to be supported by place value counters at the stage of multiplication. This initially done where there is no regrouping. $321 \times 2 = 642$

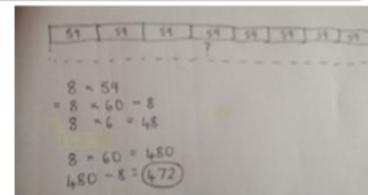
Hundreds	Tens	Ones
3	2	1
6	4	2

It is important at this stage that they always multiply the ones first.

The corresponding long multiplication is modelled alongside

The grid method may be used to show how this relates to a formal written method.

x	300	20	7
4	1200	80	28



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

$$\begin{array}{r} 327 \\ \times 4 \\ \hline 28 \\ 80 \\ 1200 \\ \hline 1308 \end{array}$$

	3	2	7
x			4
	1	3	0
		1	2
			8

This may lead to a compact method.

Year 5/6

Multiplication

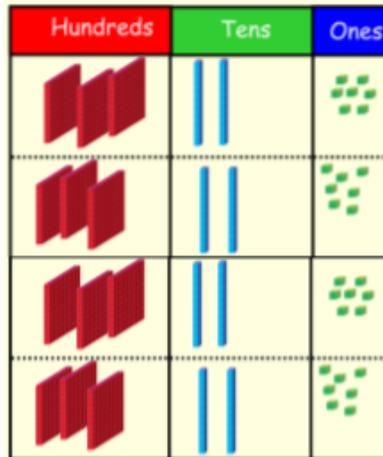
Objective and Strategy

Concrete

Pictorial

Abstract

Column Multiplication for 3 and 4 digits x 1 digit.



It is important at this stage that they always multiply the ones first.

Children can continue to be supported by place value counters at the stage of multiplication. This initially done where there is no regrouping. $321 \times 2 = 642$

x	300	20	7
4	1200	80	28



$$\begin{array}{r}
 327 \\
 \times 4 \\
 \hline
 28 \\
 80 \\
 1200 \\
 \hline
 1308
 \end{array}$$

This may lead to a compact method.

Column multiplication

Manipulatives may still be used with the corresponding long multiplication modelled alongside.

	10	8
10	100	80
3	30	24

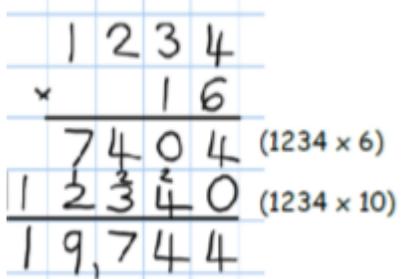


	1	8
x	1	3
	5	4
	2	
	1	8
	2	3
	4	

18 x 3 on the first row

(8 x 3 = 24, carrying the 2 for 20, then 1 x 3)

18 x 10 on the 2nd row. Show multiplying by 10 by putting zero in units first

Year 6	Multiplication		
Objective and Strategy	Concrete	Pictorial	Abstract
Column Multiplication of larger numbers	Manipulatives may still be used with the corresponding long multiplication modelled alongside.	Grid method may help.	 <p>Carry below the answer and don't forget to include when adding the answer</p>
Multiplying decimals up to 2 decimal places by a single digit.			<p>Remind children that the single digit belongs in the units column. Line up the decimal points in the question and the answer.</p> 