



Multiplication: Year 1 -2

Vocabulary:

repeated ___ times,
groups of, lots of, repeated addition,
multiply, multiplication, commutative,
factor, product

multiplicand x multiplier = product

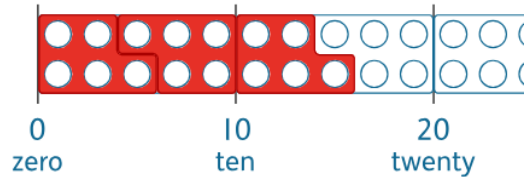
Concrete

Repeated addition

Five repeated three times. Five add five add five.



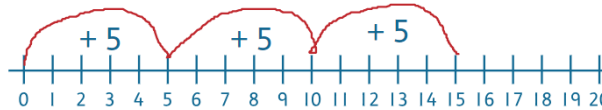
5 + 5 + 5



Pictorial

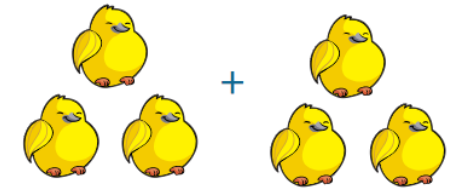
Use of a number line to repeatedly add the same number.

Start at zero. Add five. Add five. Add five.



Abstract

Writing addition sentences to describe pictures

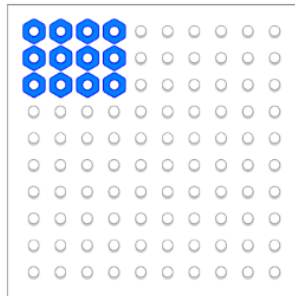


3 + 3

5 + 5 + 5 = 15

Arrays (exploration of commutativity)

Create arrays using counters or pegs on the baseboard to show multiplication sentences.

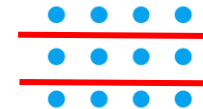


Draw arrays in different rotations to create repeated addition and multiplication statements.

4 + 4 + 4 = 12

4 repeated three times

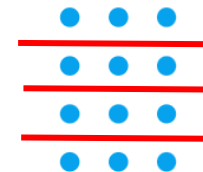
4 x 3 = 12



3 + 3 + 3 + 3

3 repeated four times

3 x 4 = 12



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

5 + 5 + 5 = 15

5 x 3 = 15

3 + 3 + 3 + 3 + 3 = 15

3 x 5 = 15



Multiplication: Year 3

Vocabulary:
repeated ____ times,
groups of, lots of, repeated addition,
multiply, multiplication, commutative,
factor, product

multiplicand x multiplier = product

Concrete

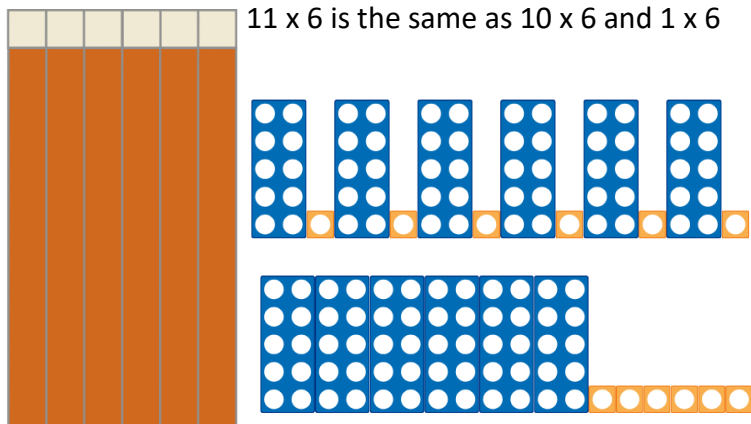
Introduction of the short-written method

$11 \times 6 = 66$

Begin to explore the distributive law of multiplication.

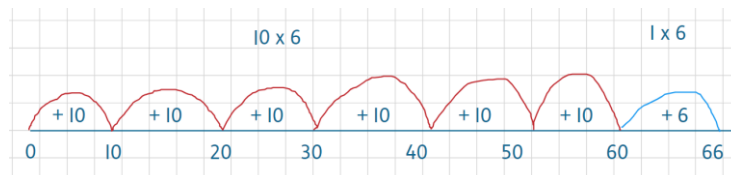
Use rods and shapes to represent 10×6 and 1×6

- 11×6 is the same as 10×6 and 1×6



Pictorial

Number line can be an appropriate scaffold for children to calculate before moving on to the short-written method.



Abstract

$11 \times 6 =$

$1 \times 6 = 6$

$10 \times 6 = 60$

$60 + 6 = 66$

$$\begin{array}{r} \times \\ \hline 66 \\ \hline \end{array}$$



Multiplication: Year 4

Vocabulary:
repeated ____ times,
groups of, lots of, repeated addition,
multiply, multiplication, commutative,
factor, product

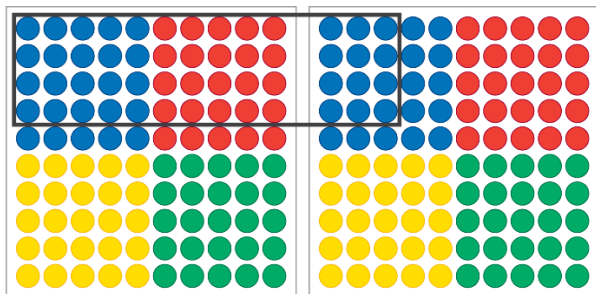
multiplicand x multiplier = product

Concrete

Short written method for teen numbers.

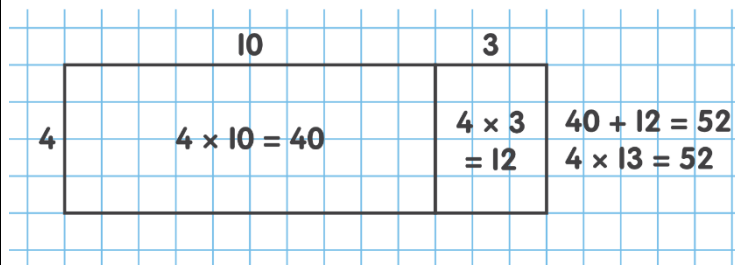
Use of the area model to support children's developing understanding.

E.g. cover 2 baseboards in counters. Draw a rectangle around a part. Here we have 13 x 4 or 10 x 4 and 3 x 4



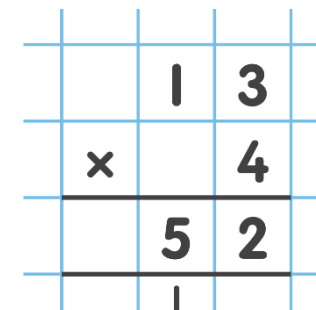
Pictorial

Pictorial area model to represent and visualise 14 x 3
Children can draw on their knowledge of area of a rectangle to support developing understanding of short written method for multiplication.

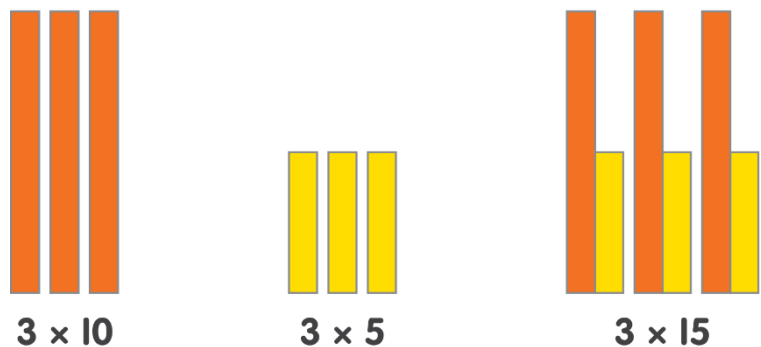


Abstract

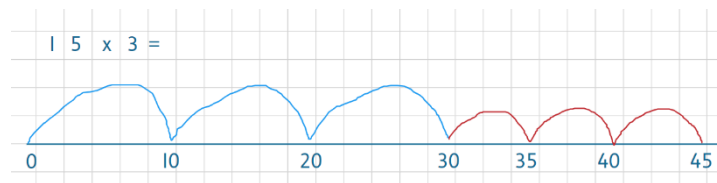
Children apply



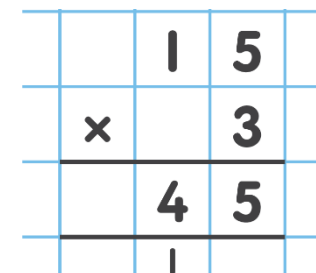
Build on Y3 to use the distributive law of multiplication.
Use rods and shapes to represent TO x O calculations



Number line can be an appropriate scaffold for children to calculate before moving on to the short-written method.



$3 \times 15 = (3 \times 10) + (3 \times 5)$
 $= 30 + 15$
 $= 45$





Multiplication: Year 5-6

Vocabulary:
repeated ___ times,
groups of, lots of, repeated addition,
multiply, multiplication, commutative,
factor, product

multiplicand x multiplier = product

Concrete

Consolidation of short written method for multiplication

Note: in Year 6 the multiplicand increases in magnitude, and children will practice this method when multiplying up to 5-digits by a single-digit multiplier.

E.g. 18,386 x 7

Pictorial

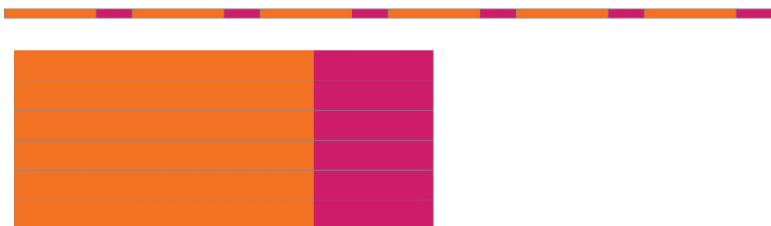
Abstract

	2	2	3
x			4
	8	9	2
		1	

Multiplying decimals

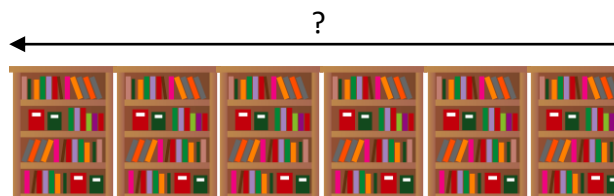
e.g. 1.4 x 6

10-rod to represent one whole. 1-rod would represent 0.1.
Show 1.4 using rods (10-rod and a 4-rod)



Use a real-life context to support visualisation and understanding.

E.g. bookcases are 1.4m wide. 6 cases are put together. What is the total width of the bookcases?



$1.4 \times 6 = (1 \times 6) + (0.4 \times 6)$

$1.4 \times 6 = 6 + 2.4$
 $= 8.4$

	1	.4
x		6
	8	.4
	2	

Long multiplication

NOTE: In Year 6, long multiplication includes decimals.

E.g. 0.89×26

Use of a real-life context to support visualisation and understanding.

E.g. Bread manufacturers produce bread in the factory. There are 24 slices of bread in each loaf. If 35 loaves of bread have been manufactured, how many slices of bread are there?



×	30	5
20	600	100
4	120	20

$$600 + 120 + 100 + 20 = 840$$

		3	5
×		2	4
	1	4 ₂	0
	7 ₁	0	0
	8	4	0