

Multiplication Workshop

Friday 27th November

Year 1

- Counting in 2s, 5s and 10s.
- Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.

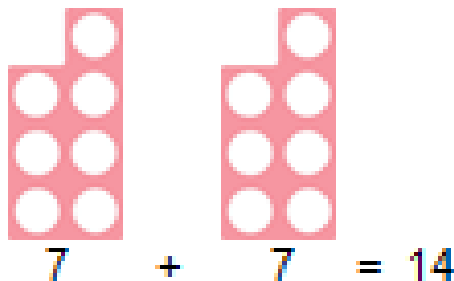
Year 1

- Practical activities and meaningful contexts using concrete objects, pictorial representations and arrays with support of the teacher.
- Doubles
- Make connections between arrays, number patterns and counting in 2s.
- Number lines
- 100 square to count in 2s, 5s and 10s.
- Counting multiple of coins.



1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20

Doubles.



There are 2 sweets in one bag. How many sweets are there in 5 bags?



Year 2

- Recall and use multiplication facts for the 2, 5 and 10 times tables.
- Calculate mathematical statements for multiplication within the 2, 5 and 10 times tables.
- Use 'x' and '=' to represent multiplication calculations.
- Show that multiplication can be done in any order.
- Solve problems involving multiplication using materials, arrays, repeated addition, mental methods and multiplication facts, including problems in context.

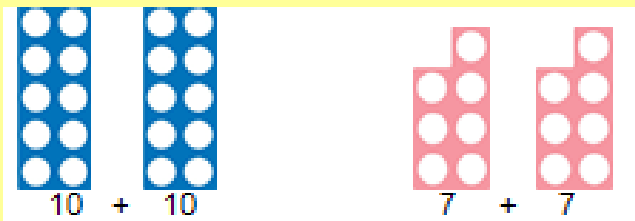
Year 2

- Practical activities and meaningful contexts using concrete objects, pictorial representations and arrays.
- Double numbers by partitioning and recombining.
- Repeated addition/groups of/lots of.
- Repeated addition on a number line.
- Arrays

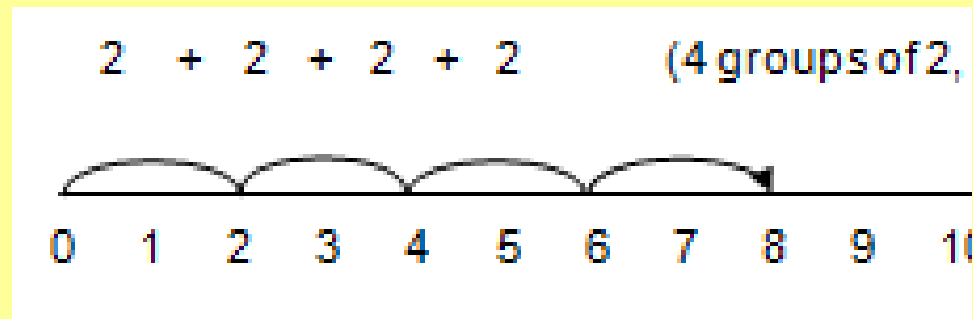
• Read arrays.



2x4 (2, 4 times)









Double 17



Year 2

Arrays

$6 \times 5 =$

(1×5)		5
(2×5)		10
(3×5)		15
(4×5)		20
(5×5)		25
(6×5)		30

Year 3

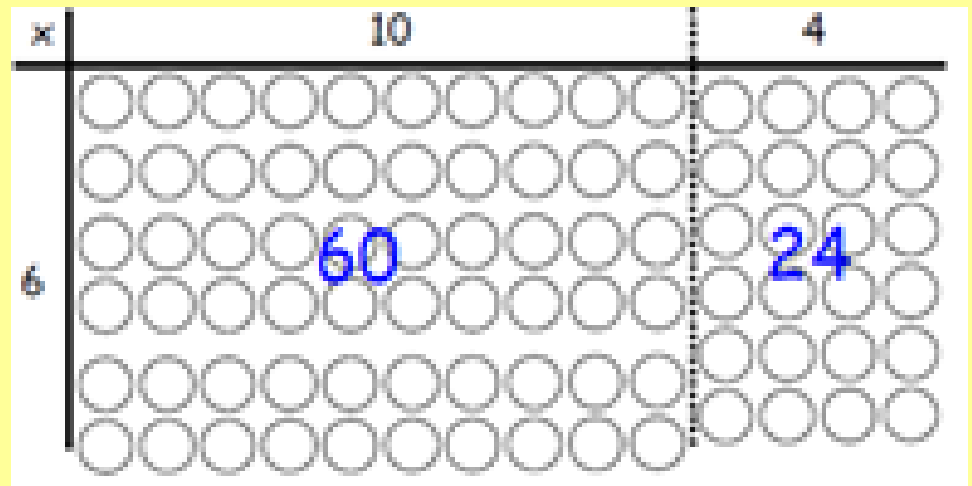
- Recall and use multiplication facts for the 3, 4 and 8 times tables.
- Calculate using the multiplication facts that they know.
- Multiply 2 digit numbers and 1 digit numbers.
- Move from mental calculations to formal written methods.
- Solve problems, including missing number problems,

Year 3

- Continue to use arrays, number lines and manipulatives.
- Mental methods.
- Introduce grid model.
- Progress to expanded method of multiplication.

$$\begin{array}{r} \text{T O} \\ 14 \\ \times \underline{5} \\ 20 \text{ (5x4)} \\ + \underline{50} \text{ (5x10)} \\ \hline 70 \end{array}$$

X	10	4	
6	60	+ 24	= 84

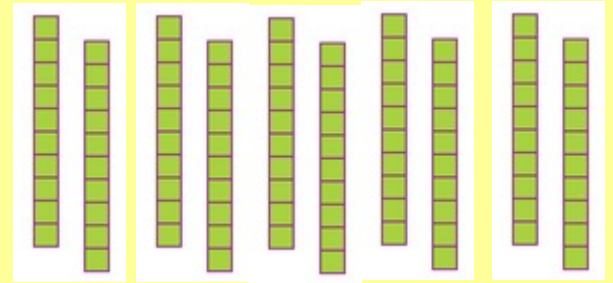


Year 3

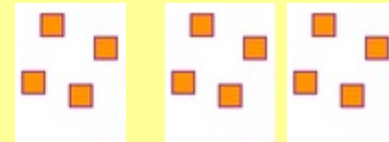
Grid Method

$$24 \times 5 =$$

$$5 \times 20 =$$



x	20	4
5	100	20



$$100 + 20 = 120$$

$$5 \times 4 =$$

Year 3

Expanded Method

$23 \times 5 =$

	H	T	O	
		2	3	
		x	5	
		1	5	(5 × 3)
+	1	0	0	(5 × 20)
	1	1	5	

Year 4

- Recall and use multiplication facts for multiplication tables up to 12×12
- Use place value, known and derived facts to multiply mentally, including multiplying by 0 and 1 and multiplying together three numbers.
- Recognise and use factor pairs.
- Multiply two - digit and three-digit numbers by a one digit number using formal written methods.
- Solve problems involving multiplying.

Year 4

- Continue using the grid method.
- Continue using the expanded method.
- Progress to short multiplication.

x	100	30	6
5	500	150	30

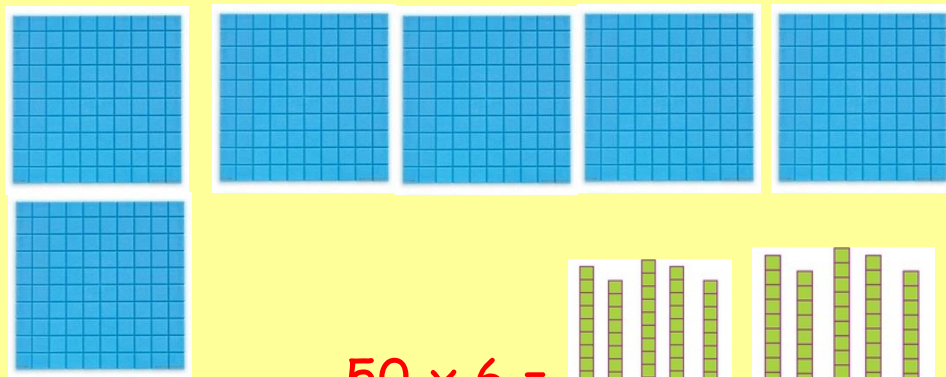
	3	2	7
x			4
<hr/>			
1	3	0	8
	1	2	

No carrying	Extra digit	Carrying	Zeros	Ext.
T O	H T O	H T O	H T O	H T O
3 2	5 1	3 8	2 0 2	□ 5 □
x <u>3</u>	x <u>2</u>	x <u>7</u>	x <u>4</u>	x <u>4</u>
<u>9 6</u>	<u>1 0 2</u>	<u>2 6 6</u>	<u>8 0 8</u>	<u>6 1 2</u>
		5		2 1

Year 4

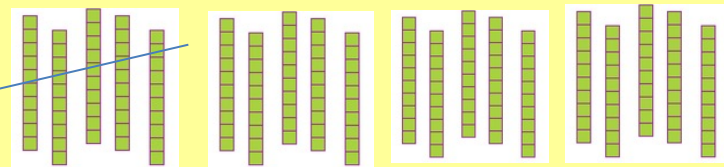
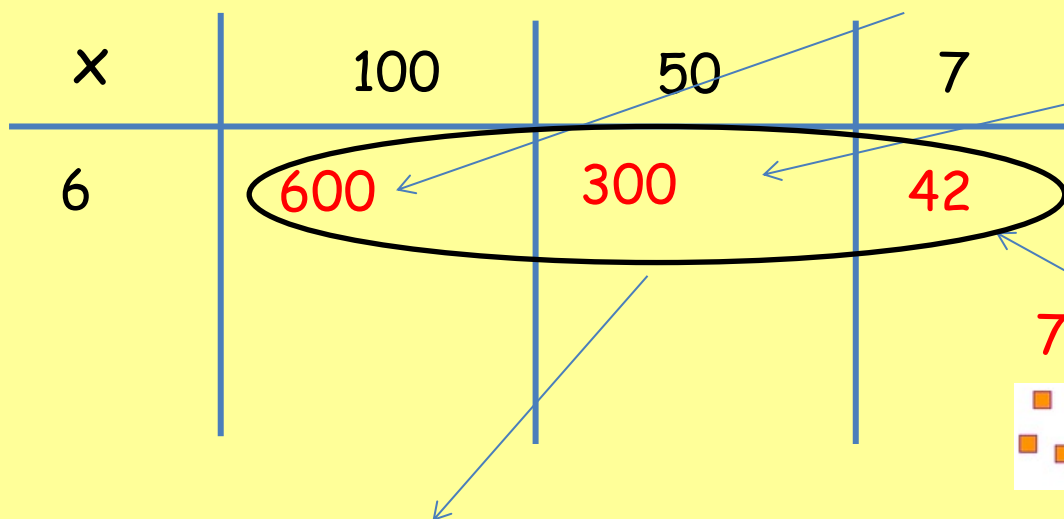
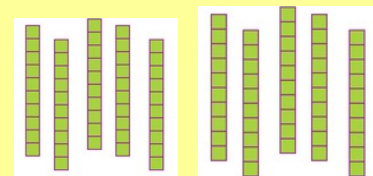
Grid Method

$100 \times 6 =$

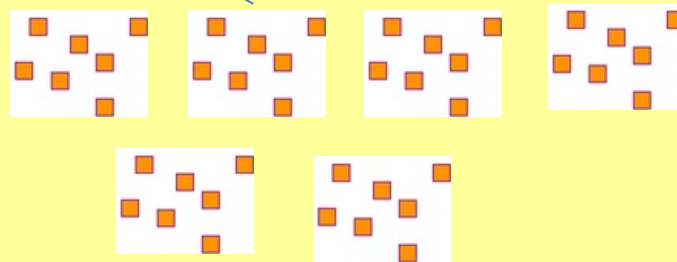


$157 \times 6 =$

$50 \times 6 =$



$7 \times 6 =$



$600 + 300 + 42 = 942$

Year 4

Expanded Method

$$324 \times 3 =$$

	H	T	O	
	3	2	4	
x				
		1	2	(3 × 4)
		6	0	(3 × 20)
+	9	0	0	(3 × 300)
	9	7	2	

Year 4

Short Multiplication

432 x 5 = **Th** **H** **T** **O**

$5 \times 2 = 10$

$5 \times 3 = 15$

$11 + 1 = 16$

$5 \times 4 = 20$

$20 + 1 = 21$

2 1 6 0

4 3 2

x

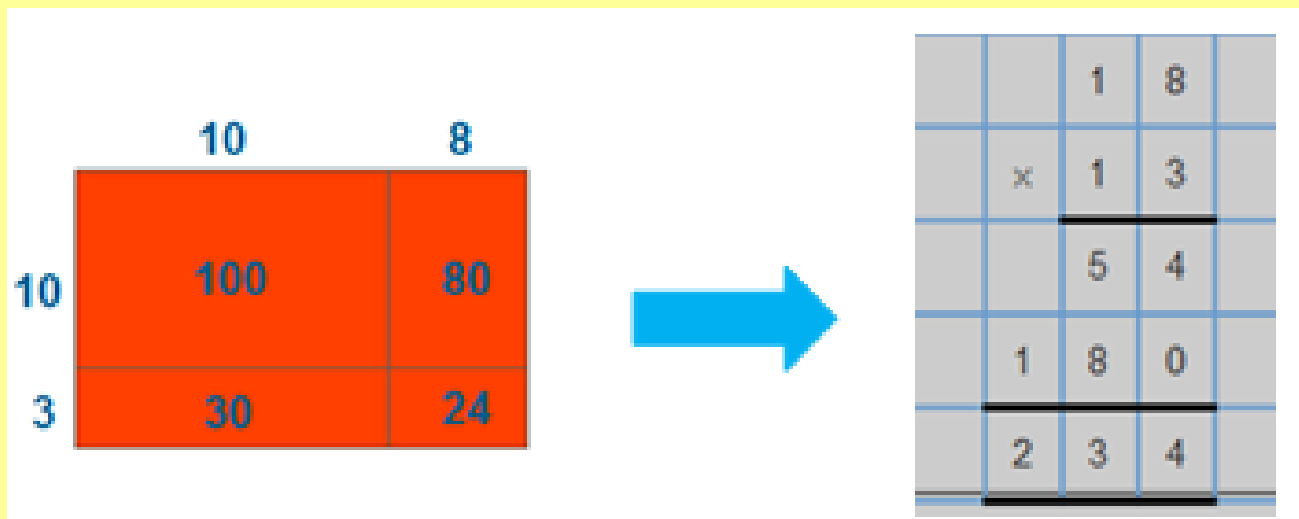
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Year 5

- Identify multiples and factors.
- Identify prime numbers to 100 and recall prime numbers to 19.
- Multiply numbers up to 4 digits by a one or two digit number using formal written method.
- Multiply and divide numbers mentally using known facts.
- Multiply and divide whole numbers and decimal numbers by 10, 100 and 1000.

Year 5

- Continue to practise short multiplication.
- Grid method to introduce long multiplication.



Year 5

Grid Method

$$23 \times 34 =$$

$$20 \times 30 =$$

$$30 \times 3 =$$

x	20	3
30	600	90
4	80	12

$600 + 90 = 690$

$80 + 12 = 92$

$690 + 92 = 782$

$4 \times 20 =$

$4 \times 3 =$

Year 5

Long Multiplication

$$78 \times 92 =$$

	Th	H	T	O
			7	8
			x	9
			<hr/>	
		1	5	6
		⁷ 0	2	0
+	7			
<hr/>				
	7	1	7	6

Year 6

- Multiply multi-digit numbers up to 4 digits by a two digit whole number using formal written methods.
- Mental calculations, including mixed operations and large numbers.
- Identify common factors, common multiples and prime numbers.

Year 6

- Continue to practise short multiplication.
- Continue to practise long multiplication.
- Multiply decimals using the grid method.
- Progress to short multiplication of decimals.

	3	6	5	2	
x				8	
2	9	2	1	6	
	5	4	'		

	1	2	3	4	
x			1	6	
	7	4	0	4	
1	2	3	4	0	
1	9	7	4	4	

Year 6

Grid method - Decimals

$$6 \times 7.2 =$$

$$6 \times 7 =$$

$$6 \times 0.2 = 1.2$$

x	7	0.2
6	42	1.2

$$42 + 1.2 = 43.2$$

Year 6

Short multiplication - Decimals

$24.3 \times 7 =$

	H	T	O	.	T th	
		2	4	.	3	
x			7			
	1	3	2	0	.	6