



# Progression in written calculation strategies for multiplication

(Examples indicate end of year expectations)

## Reception

### Statutory Guidance

Subitise (recognise quantities without counting) to 5.

Verbally count beyond 20, recognising the pattern of the counting system.

Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.

Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally

e.g. describing pattern of odd and even



e.g. 'doubling up' using familiar representations



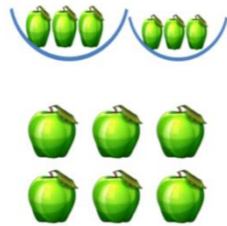
## Year 1

### Statutory Guidance

Solve one-step problems involving multiplication by calculating the answer using representations and arrays with the support of the teacher.

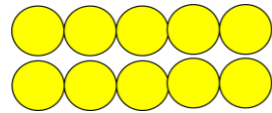
#### Possible representations

There are two bowls with three apples in each. How many apples are there altogether?



#### Non- Statutory guidance

They make connections between arrays, number patterns, and counting in twos, fives and tens.



#### White Rose video link and parent activity book

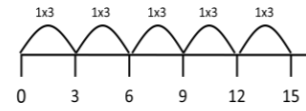
<https://vimeo.com/480212725>

<https://wrm-13b48.kxcdn.com/wp-content/uploads/2020/07/Y2-HL-Autumn-Block-4-Multiplication-2020.pdf>

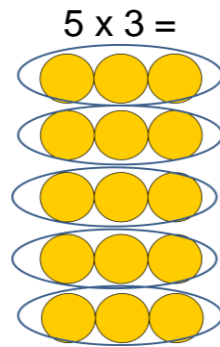
## Year 2

### Statutory Guidance

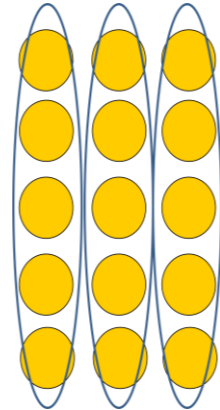
Solve problems involving multiplication using materials, arrays, repeated addition, mental methods, and multiplication facts, including problems in contexts.



Possible representations e.g.  $5 \times 3 =$



$3 \times 5 =$



Multiplication facts include: 2, 3, 5 and 10

#### White Rose video link and parent activity book

<https://vimeo.com/480212725>

<https://wrm-13b48.kxcdn.com/wp-content/uploads/2020/07/Y2-HL-Autumn-Block-4-Multiplication-2020.pdf>

## Year 3

### Statutory Guidance

Write and calculate mathematical statements for multiplication using the they know, including for two-digit numbers times one-digit numbers, using e.g.  $34 \times 8 =$

Grid method progressing to Short Multiplication:

x	30	4	
8	240	32	= 272

$$\begin{array}{r} 34 \\ 8 \times \\ \hline 272 \\ 3 \end{array}$$

White Rose video link and parent activity book

<https://vimeo.com/486513593>

<https://vimeo.com/489850121>

<https://wrm-13b48.kxcdn.com/wp-content/uploads/2020/07/Y3-HL-Spring-Block-1-Multiplication-and-division-2-2020.pdf>

## Year 4

### Statutory Guidance

Multiply two-digit and three-digit numbers by a one digit number using the formal written layout.

Key strategy: Short multiplication

Expanded

$$\begin{array}{r} 35 \\ \times 4 \\ \hline 120 \quad (30 \times 4) \\ + 20 \quad (5 \times 4) \\ \hline 140 \end{array}$$

Compact

$$\begin{array}{r} 347 \\ \times 7 \\ \hline 2429 \\ 34 \end{array}$$

Multiplication facts up to 12 12

White Rose video link and parent activity book

<https://vimeo.com/492456871>

<https://wrm-13b48.kxcdn.com/wp-content/uploads/2020/07/Y4-HL-Spring-Block-1-Multiplication-and-division-A-2020.pdf>

## Year 5

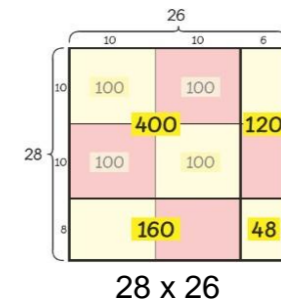
### Statutory Guidance

Multiply numbers up to 4 digits by a one – or two-digit number using the formal written method,

Key strategies: Short multiplication

$$\begin{array}{r} 2741 \\ \times 6 \\ \hline 16446 \\ 42 \end{array}$$

Long multiplication – introduced using an area model first e.g.



$$\begin{array}{r} 26 \\ \times 28 \\ \hline 208 \quad (26 \times 8) \\ 520 \quad (26 \times 20) \\ \hline 728 \end{array}$$

White Rose video link and parent activity book

<https://vimeo.com/486775551>

<https://vimeo.com/488076765>

<https://vimeo.com/488553863>

<https://wrm-13b48.kxcdn.com/wp-content/uploads/2020/07/Y5-HL-Spring-Block-1-Multiplication-and-division-2020.pdf>

## Year 6

### Statutory Guidance

Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication.

Key strategies: e.g.  $2741 \times 66$

$$\begin{array}{r} 2741 \\ \times 66 \\ \hline 16446 \\ 164460 \\ \hline 180906 \\ 11 \end{array}$$

From Fractions section: Multiply one-digit numbers with up to two decimal places by whole numbers

$$\begin{array}{r} 2.41 \\ \times 6 \\ \hline 14.46 \\ 2 \end{array}$$

White Rose video link and parent activity book

<https://vimeo.com/458926418>

<https://wrm-13b48.kxcdn.com/wp-content/uploads/2020/07/Y6-HL-Autumn-Block-2-Four-operations-A-2020.pdf>