

Progression in written calculation strategies for multiplication (Examples indicate end of year expectations)

Reception

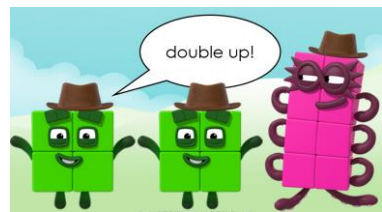
Statutory Guidance

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 add and even



e.g. 'doubling up' using familiar representations



Year 1

Statutory Guidance

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

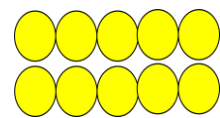
Possible representations

e.g. 2 lots of 3 =
There are two bowls with three apples in each. How many apples are there altogether?



Non-Statutory guidance

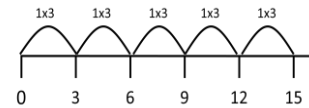
They make connections between arrays, number patterns, and counting in twos, fives and tens.



Year 2

Statutory Guidance

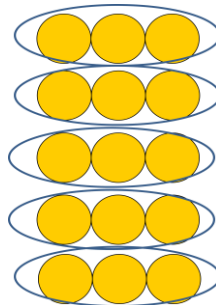
Solve problems involving multiplication using materials, arrays, repeated addition, mental methods, and multiplication facts, including problems in contexts.



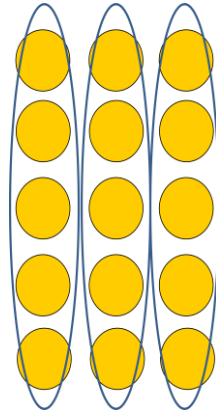
Possible representations

e.g. $5 \times 3 =$

$$5 \times 3 =$$



$$3 \times 5 =$$



Multiplication facts include: 2, 3, 5 and 10

Year 3

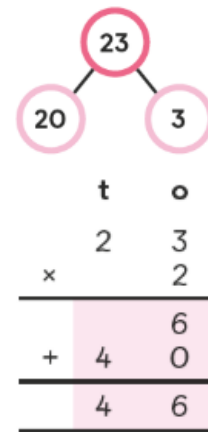
Statutory Guidance

Write and calculate mathematical statements for multiplication using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods.

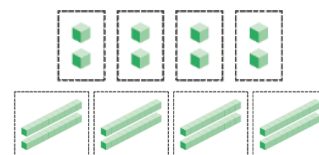
Multiplication facts include: 2,3,4,5,8 and 10

Key strategy:

Partitioning the two-digit number into tens and ones



Children should use base ten to understand multiplication by multiples of 10 e.g. if $2 \times 4 = 8$ then $20 \times 4 = 80$



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

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

Compact

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

Multiplication facts up to 12×12

Year 5

Statutory Guidance

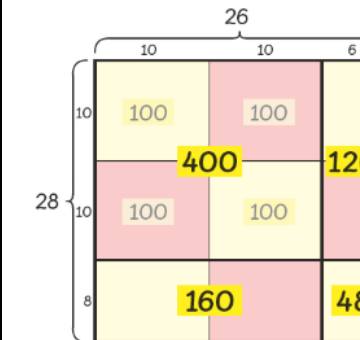
Multiply numbers up to 4 digits by a one – or two-digit number using the formal written method,

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. 28×26



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

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:

Long multiplication e.g. 2741×66

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