

Multiplication in Year 4

Number - multiplication

Pupils should be taught to:

- recall 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; multiplying together three numbers
- recognise and use factor pairs and commutativity in mental calculations
- multiply two-digit and three-digit numbers by a one-digit number using formal written layout
- solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.

Multiply 2 and 3 digits by a single digit, using multiplication tables up to 12×12

X	1	0	0	8	0	4
6	6	0	0	4	8	0
				2	4	

	6	0	0
	4	8	0
+	2	4	
	1	1	0
			4

Once children are confident and accurate with **grid method**: multiplying 2 and 3 digit numbers by a single digit and carrying for written addition, they can move onto short multiplication (column method).



	1	8	4
x			6
	1	1	0
			4

With grid method knowledge and understanding, children can apply this to **short multiplication**. They need to understand place value of units, tens and hundreds and relate the concept of 'carrying' tens and hundreds.

Children should be able to:

- Approximate before they calculate, and make this a regular part of their calculating, going back to the approximation to check the reasonableness of their answer. e.g.: 346×9 is approximately $350 \times 10 = 3500$.
- Record an approximation to check the final answer against.
- Multiply multiples of ten and one hundred by a single-digit, using their multiplication table knowledge.
- Recall all times tables up to 12×12

$$\begin{array}{c} \boxed{30 \times 80 = 2400} \\ \text{24} \end{array}$$

Key vocabulary: groups of, lots of, times, array, altogether, multiply, count, multiplied by, repeated addition, array, column, row, commutative, groups of, sets of, lots of, equal groups, times, multiply, times as big as, once, twice, three times... partition, grid method, total, multiple, product, sets of, inverse, short multiplication

Key skills for multiplication at Year 4:

- Count in multiples of 6, 7, 9, 25, 100 and 1000
- Recall multiplication facts for all multiplication tables up to 12×12 .
- Recognise place value of digits in up to 4-digit numbers (thousands, hundreds, tens, and ones)
- Use place value, known facts and derived facts to multiply mentally, e.g. multiply by 1, 10, 100, by 0, or to multiply 3 numbers.
- Use commutativity and other strategies mentally $3 \times 6 = 6 \times 3$, $2 \times 6 \times 5 = 10 \times 6$, $39 \times 7 = 30 \times 7 + 9 \times 7$.
- Solve problems with increasingly complex multiplication in a range of contexts.