

Year 4 - Multiplication

Core written method :

		H	T	O	
			3	4	
	x			5	
			2	0	
		1	5	0	
		1	7	0	

		H	T	O
			3	4
	x			5
		1	7	0
		1	2	

Core end of year expectation:

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

(See WR small steps list for progression).

NC links:

- recall multiplication and division facts for multiplication tables up to 12×12
- use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers
- multiply two-digit and three-digit numbers by a one-digit number using formal written layout
- recognise and use factor pairs and commutativity in mental calculations
- 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.

Vocabulary:

commutative, inverse, multiple, product, remainder, scaling

New to Year 4: factor, factor pair, inverse, triple, efficient

Representations:

T	O
10 10 10	1 1 1 1
10 10 10	1 1 1 1
10 10 10	1 1 1 1
10 10 10	1 1 1 1
10 10 10	1 1 1 1

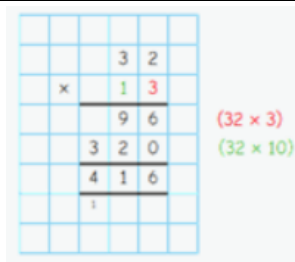
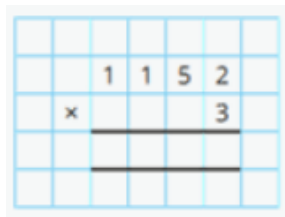
The diagram shows a grid representing base ten blocks:

H	T	O
	10 10 10	1 1 1 1
	10 10 10	1 1 1 1
	10 10 10	1 1 1 1
	10 10 10	1 1 1 1
	10 10 10	1 1 1 1
100	10 10	

A green circle labeled "100" has arrows pointing to the first column (H) and the last row (T=2, O=0). Dashed blue boxes group the blocks in the last row as two tens.

Year 5 - Multiplication

Core written methods:



Core end of year expectation:

- Multiply 4 digit numbers by one or two digit numbers using a formal written method. (See WR small steps list for progression)

NC links:

- multiply and divide numbers mentally drawing upon known facts
- identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers
- know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers
- establish whether a number up to 100 is prime and recall prime numbers up to 19
- recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3)
- solve problems involving multiplication & division including using their knowledge of factors/multiples/squares & cubes
- multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers
- multiply and divide whole numbers and those involving decimals by 10, 100 and 1000
- solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign
- solve problems involving multiplication/ division, including scaling by simple fractions & problems involving simple rates

Vocabulary:

commutative, inverse, multiple, product, remainder, scaling, factor, factor pair, inverse, triple, efficient. New to Year 5: common multiple, common factor, cube number, prime number, square number

Representations:

Th	H	T	O
1000	100	10 10 10	1 1
100	100	10 10 10	1 1
100	100	10 10 10	1 1

×	40	4
30	1,200	120
2	80	8

$$32 \times 44 = 1,200 + 80 + 120 + 8$$

$$32 \times 44 = 1,408$$

×	10	3
30	300	90
2	20	6

$300 + 90 + 20 + 6 = 416$

	3	2
×	1	3
	9	6
	3	2
	4	1
		6

(32 × 3)
(32 × 10)

Year 6 - Multiplication

Core written methods:

Core end of year expectation:

- multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication
(See WR small steps list for progression).

NC links:

- perform mental calculations, including with mixed operations and large numbers
- solve problems involving addition, subtraction, multiplication and division
- use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.
- multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication
- identify common factors, common multiples and prime numbers
- use their knowledge of the order of operations to carry out calculations involving the four operations

Vocabulary:

commutative, inverse, multiple, product, remainder, scaling, factor, factor pair, inverse, triple, efficient, common multiple, common factor, cube number, prime number, square number,

New to Year 6: composite number, order of operations, powers of

Representations:

$$6 \times 2 = 12$$

$$6 \times 0.2 = 1.2$$

$$213 \times 4 = 852$$

$$2.13 \times 4 = 8.52$$

Year 3 - Multiplication

Core written method:

$$20 \times 4 = 80$$

$$4 \times 4 = 16$$

(Alongside base 10 or place value counters)

$$24 \times 4 = 96$$

Core end of year expectation:

- Apply known multiplication facts (2s, 5s, 10s) to two by one digit calculations (multiplication and division).
(See WR small steps list for progression).

NC links:

- recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables
- write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods
- solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.

Vocabulary:

commutative, inverse, multiple, product, remainder, scaling

Representations:

