National Curriculum Links

Links to the National Curriculum in England

# Chapters 10–12: Multiplication and division

Pupils should be taught to:

## Year 1

* 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 2

* recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognizing odd and even numbers
* calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs
* show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot
* solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts

## Year 3

* 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

## Year 4

* 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
* recognize 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

## Year 5

* 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 numbers mentally drawing upon known facts
* divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context
* multiply and divide whole numbers or 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

## Year 6

* multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication
* divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders … or by rounding, as appropriate for the context
* divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context
* perform mental calculations, including with mixed operations and large numbers
* use their knowledge of the order of operations to carry out calculations involving the four operations
* solve problems involving addition, subtraction, multiplication and division
* use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy

Links to Curriculum for Excellence in Numeracy and Mathematics in Scotland

# Chapters 10–12: Multiplication and division

## First

***Experiences and outcomes:*** *I can use … multiplication and division when solving problems, making best use of the mental strategies and written skills I have developed.* ***MNU 1-03a***

***Benchmark:***

* uses correct mathematical vocabulary when discussing the four operations including … multiply, product, divide and shared equally
* counts forwards and backwards in 2s, 5s …
* uses multiplication and division facts to the 10th multiplication table
* demonstrates understanding of the commutative law, for example … 2 × 4 = 4 × 2
* applies strategies to determine multiplication facts, for example, repeated addition, grouping, arrays and multiplication facts
* applies strategies to determine division facts, for example, repeated subtraction, equal groups, sharing equally, arrays and multiplication facts
* applies knowledge of inverse operations (multiplication and division)
* solves two step problems
* uses multiplication and division facts to solve problems within the number range 0 to 1000
* multiplies and divides whole numbers by 10 and 100 (whole number answers only)

## Second

***Experiences and outcomes:*** *Having explored the need for rules for the order of operations in number calculations, I can apply them correctly when solving simple problems.* ***MTH 2-03c***

***Benchmark:***

* multiplies and divides whole numbers by multiples of 10, 100 and 1000
* multiplies whole numbers by two digit numbers
* divides whole numbers … by a single digit …
* applies the correct order of operations in number calculations when solving multi-step problems

Links to Curriculum for Wales: Programme of Study for Mathematics, Key Stages 2–4

# Chapters 10–12: Multiplication and division

Learners should be taught to:

## Year 2

* solve one- and two-step problems that involve … multiplication and simple division, including missing number problems
* understand that multiplication is repeated addition, *e.g. 2 + 2 + 2 is the same as ‘three twos’*
* understand and use mathematical symbols for … multiplication, division …
* understand and use the different mathematical terms for … multiplication, division … e.g. share, goes into

## Year 3

* recall 2, 3, 4, 5 and 10 multiplication tables and use to solve multiplication and division problems
* multiply numbers by 10
* identify multiples of 2, 3, 4, 5 and 10; use the term multiple
* use partitioning to double and halve 2-digit numbers

## Year 4

* use mental strategies to recall multiplication tables for 2, 3, 4, 5, 6 and 10 and use to solve division problems
* multiply and divide numbers by 10 and 100
* identify multiples of 2, 3, 4, 5, 6 and 10

### Year 5

* use mental strategies to recall multiplication tables for 2, 3, 4, 5, 6, 8 and 10 and use to solve division problems
* multiply and divide numbers … by 10 and 100

## Year 6

* use mental strategies to recall multiplication tables up to 10 x 10 and use to solve division problems
* multiply numbers … by a multiple of 10, e.g. 15 × 30 …

Australian Curriculum for Mathematics

This maps entries in the **Australian Mathematics Curriculum (from Foundation Stage to Year 7)** to the content of chapters of Haylock, *Mathematics Explained for Primary Teachers*, 6th edition.

# Chapters 10–12: Multiplication and division

## Year 2

* Recognize and represent multiplication as repeated addition, groups and arrays
* Recognize and represent division as grouping into equal sets and solve simple problems using these representations

## Year 3

* Recall multiplication facts of two, three, five and ten and related division facts
* Represent and solve problems involving multiplication using efficient mental and written strategies and appropriate digital technologies

## Year 4

* Recall multiplication facts up to 10 × 10 and related division facts
* Investigate number sequences involving multiples of 3, 4, 6, 7, 8, and 9
* Develop efficient mental and written strategies and use appropriate digital technologies for multiplication and for division where there is no remainder

## Year 5

* Solve problems involving multiplication of large numbers by one- or two-digit numbers using efficient mental, written strategies and appropriate digital technologies
* Solve problems involving division by a one-digit number, including those that result in a remainder
* Use efficient mental and written strategies and apply appropriate digital technologies to solve problems

## Year 6

* Select and apply efficient mental and written strategies and appropriate digital technologies to solve problems involving all four operations with whole numbers

## Year 7

* Apply the associative, commutative and distributive laws to aid mental and written computation