The National Curriculum in England

Mathematics Curriculum Frameork

Primary

9-10 years old

Key Stage 2

Mathematics for Year 4

Figure 1 – Structure of the national curriculum

	Key stage 1	Key stage 2	Key stage 3	Key stage 4
Age	5-7	7-11	11-14	14-16
Year groups	1-2	3-6	7-9	10-11
Core subjects				
English	√	√	√	√
Mathematics	√	√	√	√
Science	√	√	√	√

Mathematics

The principal focus of mathematics teaching in lower key stage 2 is to ensure that pupils:

- become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value.
- develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers.
- develop their ability to solve a range of problems, including with simple fractions and decimal place value.
- draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them.
- can use measuring instruments with accuracy and make connections between measure and number.

By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work.Pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling.

Number - value

- ♣ Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit
- ♣ Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000
- ♣ Interpret negative numbers in context
- ♣ Count forwards and backwards with positive and negative whole numbers, including through zero round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000
- ♣ Solve number problems and practical problems that involve all of the above
- ♣ Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.

Number addition and subtraction

- ♣ Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)
- ♣ Add and subtract numbers mentally with increasingly large numbers use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
- ♣ Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.

Number multiplication and division

- ♣ 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 (nonprime) numbers
- ♣ Establish whether a number up to 100 is prime and recall prime numbers up to 19
- ♣ 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 and those involving decimals by 10, 100 and 1000

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Number - fractions

♣ Compare and order fractions whose denominators are all multiples of the same number

♣ Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths

♣ Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, $2/5 + 4/5 = 6/5$]

♣ Add and subtract fractions with the same denominator and denominators that are multiples of the same number

♣ Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams

♣ Read and write decimal numbers as fractions [for example, $0.71 = 71/100$]

♣ Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents

♣ Round decimals with two decimal places to the nearest whole number and to one decimal place read, write, order and compare numbers with up to three decimal places

♣ Solve problems involving number up to three decimal places

♣ Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal

♣ Solve problems which require knowing percentage and decimal equivalents of $1/2$, $1/4$, $1/5$, $2/5$, $4/5$ and those fractions with a denominator of a multiple of 10 or 25.

Measurements

♣ Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)

♣ Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints

♣ Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres

♣ Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes

♣ Estimate volume [for example, using $1 cm^3$ blocks to build cuboids (including cubes)] and capacity [for example, using water]

♣ Solve problems involving converting between units of time

♣ Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.

Geometry

♣ Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.

Statistics

♣ Solve comparison, sum and difference problems using information presented in a line graph

♣ Complete, read and interpret information in tables, including timetables