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The National Curriculum in England

Mathematics Curriculum Framework

Primary
8-9 years old
Key Stage 2
Mathematics for Year 3

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.



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Numbers

Pupils should be taught:

- to count in multiples of 6, 7, 9, 25 and 1000
- to find 1000 more or less than a given number
- to recognise the place value of each digit in a three-digit number (hundreds, tens, ones)
- to compare and order numbers up to 1000
- to identify, represent and estimate numbers using different representations
- to read and write numbers up to 1000 in numerals and in words
- to solve number problems and practical problems involving these ideas
- to read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value.
- to add and subtract numbers mentally, including: a three-digit number and ones a three-digit number and tens a three-digit number and hundreds
- to add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction
- to recall multiplication and division facts for multiplication tables up to 12×12
- to 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
- to recognise and use factor pairs and commutativity in mental calculations
- to multiply two-digit and three-digit numbers by a one-digit number using formal written layout
- to 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.
- to estimate the answer to a calculation and use inverse operations to check answers
- to recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators
- to recognise and show, using diagrams, equivalent fractions with small denominators
- to recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$
- to find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths
- to round decimals with one decimal place to the nearest whole number
- to solve simple measure and money problems involving fractions and decimals to two decimal places.

Leonardo Gifted School is developed by Centrul Gifted Education, a Romanian charity, www.giftededu.ro. Member ECHA- European Council for High Ability, WCGTC- World Council for Gifted and Talented Children. Partner University of Bucharest, Faculty of Education Sciences and Psychology. International Audit: CEU and Johns Hopkins Carey School of Business



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Measurements

- ♣ Convert between different units of measure [for example, kilometre to metre; hour to minute]
- ♣ Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres
- ♣ Find the area of rectilinear shapes by counting squares
- ♣ Estimate, compare and calculate different measures, including money in pounds and pence
- ♣ Read, write and convert time between analogue and digital 12- and 24-hour clocks
- ♣ Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.

Geometry

- ♣ Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes
- ♣ Identify acute and obtuse angles and compare and order angles up to two right angles by size
- ♣ Identify lines of symmetry in 2-D shapes presented in different orientations
- ♣ Complete a simple symmetric figure with respect to a specific line of symmetry.
- ♣ Describe positions on a 2-D grid as coordinates in the first quadrant
- ♣ Plot specified points and draw sides to complete a given polygon.

Statistics

- ♣ Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.
- ♣ Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.