

CHANGES TO THE MATHEMATICS CURRICULUM

FROM SEPTEMBER 2014

The National Curriculum for mathematics aims to ensure all pupils:

- become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils have conceptual understanding and are able to recall and apply their knowledge rapidly and accurately to problems
- **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can **solve problems** by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions

Overview

What has changed?

The idea - somewhat controversially - is for children to "go further...at an earlier age"

Whilst some of the content is totally new, existing topics will be introduced a year or two earlier than would currently be the case for most children.

Higher expectations overall; especially in relation to number and recall of addition, subtraction, multiplication and division number facts. A strong emphasis has been placed on mental and written calculation of whole numbers, decimals and fractions. Less prominence given to data, with probability removed altogether; a steer away from use of calculators until the end of primary. New topics, such as Roman numerals, identifying parts of a circle, recognising binary numerals and a more formal introduction to algebra in Year 6 have been planned in.

Changes in Year 1

- *children should count to 100 instead of 20*
- *multiplication and division problems including arrays are now included, previously these were expectations for Years 2 and 3*
- *there is a greater demand on using halves and quarters as operators*
- *volume should be taught, it wasn't anywhere in the primary section of the previous National Curriculum.*

Changes in Year 2

- *more emphasis on the mental mathematics expectations*
- *inverse operations for checking are now explicit in Year 2*
- *greater range of fractions are explored including equivalents of quarters*
- *in measures children are expected to be able to read a thermometer.*
- *reading the time to the nearest 5 minutes - previously expected in Year 3*
- *column addition and subtraction is encouraged but not compulsory*

Changes in Year 3

- *children are now expected to count in multiples of 4, 8, 50 and 100*
- *they are expected to mentally calculate with three-digit numbers*
- *Use formal written method (column) for addition and subtraction*
- *learning the eight-times table has been included*
- *understanding and counting in tenths are new to Year 3*
- *children now need to add and subtract fractions of the same denominator*
- *measuring perimeters of simple shapes was in Year 4 but now it is in Year 3*
- *children are expected to be able to tell 24-hour time - this previously appeared in Year 5*
- *they are also expected to be able to read the time on clocks with Roman numerals*
- *children need to be able to identify perpendicular and parallel lines.*

Expectations for time are very challenging. Currently in the PNS, children visit time once a term and only for a few days.

Changes in Year 4

- the new curriculum specifies that children need to count in multiples of 6, 7, 9 and 1 000 and also in negative numbers
- they need to be able to write Roman numerals to 100
- they need to carry out column addition and subtraction of numbers with four digits
- it is expected that the children know all their tables to 12x12; previously tables to 10x10 were required
- children need to understand hundredths which were previously explored in Year 5
- there is generally a greater emphasis on decimals (2 dp) and being able to round decimals to whole numbers
- translation has been included, an area which was previously introduced in Year 6
- children are expected to construct line graphs, previously these were expectations for Years 5 and 6

Roman numerals!

Challenging for some - to know all x tables!

Changes in Year 5

- it is expected that children will be able to count in steps of powers of 10 of any number, read, write, order numbers to 1 000 000
- children are expected to read Roman numerals to 1 000 and recognise years written using them
- there are higher expectations with prime numbers and factors, including prime factors
- children will need to recognise cube numbers
- the children are expected to solve problems with numbers up to three decimal places
- children are expected to be able to add and subtract fractions with the same denominator and related fractions
- they need to multiply proper fractions and mixed number fractions by whole numbers
- standard written methods are specified for all four operations when working with numbers that have more than four digits, informal methods are not given as an option
- they are expected to be able to estimate and calculate volume.

Challenging - count and read numbers to one million. Write Roman Numerals to 1000

Changes in Year 6

- *standard written methods are expected to be used for all four operations*
- *children are expected to be able to multiply and divide simple fractions*
- *compare and order fractions greater than 1*
- *there is explicit mention of using algebra, for example expressing missing number sentences algebraically*
- *they need to find the area of parallelograms and triangles*
- *Calculate the volume of 3-d shapes and use formulae for area/volume of shapes*
- *the children need to know the names for different parts of a circle including radius, diameter and circumference*
- *they need to begin to construct pie charts*
- *They should describe positions on the full coordinate grid (all four quadrants)*