Information for Parents on the National Maths Curriculum 2014

Aims

The National Curriculum for mathematics aims to ensure that 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.

School curriculum

The programmes of study for mathematics are set out year-by-year for key stages 1 and 2. Schools are, however, only required to teach the relevant programme of study by the end of the key stage. Within each key stage, schools therefore have the flexibility to introduce content earlier or later than set out in the programme of study. In addition, schools can introduce key stage content during an earlier key stage, if appropriate.

Main Changes

* Higher expectations — benchmarked against age-related expectations in other countries
* Fewer topics but in greater depth — less data/statistics and no probability until KS3
* A focus on pupils being expected to build firm foundations and not be accelerated to secondary school content
* Emphasis on the conceptual development of number addressed in more detail — particularly arithmetic

Main Differences

* Levels of expectations raised, especially in relation to number and recall of addition, subtraction, multiplication and division facts
* Emphasis on mental and written calculation, using the four basic operations, of whole numbers, decimals and fractions.
* Many topics introduced at an earlier stage — for example, 'By the end of year 2, pupils should know the number bonds to 20 and be precise in using and understanding place value'. Although within non-statutory guidance 'pupils memorise and reason with number bonds in 10 and 20'.
* New topics introduced including Roman numerals and a greater emphasis on algebra in Y6.

Specific year changes

Y1:
* Count to 100 instead of 20
* Inclusion of multiplication and division problems, including arrays - previously expected in Y2
* Greater emphasis on halves and quarters as operators
* Inclusion of volume

Y2:
- Greater emphasis on inverse operations as a checking mechanism
- Greater range of the use of fractions - including unit fractions, equivalence and fractions of quantities

Y3:
- Count in multiples of 4, 8, 50 (and 100)
- Calculate mentally with three-digit numbers
- More of an emphasis on fractions including understanding the concept of tenths and adding/subtracting fractions with the same denominator
- Understand perimeter of simple shapes previously in Y4
- Tell the time using Roman numerals and the 24-hour clock — previously Y5
- Identify horizontal and vertical lines and pairs of perpendicular and parallel lines,

Y4:
- Count in multiples of 6, 7, 9 (and 1000) and also negative numbers
- Read and write Roman numerals to 100
- Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction
- Recall multiplication and division facts for multiplication tables up to 12 x 12
- Understand 'hundredths' — previously Y5 with a greater emphasis on decimals
- Within geometry- translate shapes and construct line graphs — previously Y5 and Y6

Y5:
- Understand number and place value up to 1 000 000
- Calculate, using columnar addition, with more than 4 digits
- Formal written methods, including long multiplication for two-digit numbers
- Short division 4 digits by one digit interpreting remainders
- Square and cube numbers and their notation
- Imperial units 'such as inches, pounds and pints'
- Greater emphasis on geometry — sum of angles in a triangle, angles on a straight line
- Common factors of numbers
- Measures questions such as perimeter expressed algebraically
- Volume problems

Y6:
- Understand number and place value up to 10 000 000
- Long multiplication to 4 digits by 2 digits and long division of four-digit numbers by two-digit numbers interpreting remainders
- Fractions: multiplication of simple fractions and division of fractions by whole numbers
- Vocabulary of the circle 'including radius, diameter and circumference'
- Higher expectations on the use of algebra — including outside of the 'algebra' section a = 180 — $(b + c)$ [within properties of shape] and translating vertex (a, b) to $(a — 2, b + 3)$ [within position and shape]