

Year 6 Mathematics

Children learn to:

Use and apply mathematics

- Solve multi-step problems, and problems involving fractions, decimals and percentages, choosing and using appropriate and efficient methods at each stage
- Represent a problem by identifying and recording the calculations needed to solve it, using symbols for unknown quantities where appropriate; set solutions in the original context and check their accuracy
- Suggest, plan and develop lines of enquiry; collect, organise and represent information, interpret results and review methods; identify and answer related questions
- Recognise and use sequences, patterns and relationships involving numbers and shapes; suggest hypotheses and test them systematically
- Explain reasoning and conclusions, using symbols where appropriate

Count, compare and order numbers, and describe relationships between them

- Find the difference between a positive and a negative integer, or two negative integers, in context
- Use decimal notation for tenths, hundredths and thousandths, partition and order numbers with up to three decimal places, and position them on the number line
- Round numbers, including those with up to three decimal places
- Use fractions, percentages and the vocabulary of ratio and proportion to describe the relationships between two quantities and solve problems, e.g. identify the quantities needed to make a fruit drink by mixing water and juice in a given ratio
- Express a larger whole number as a fraction of a smaller one; simplify fractions; order a set of fractions by converting them to fractions with a common denominator
- Express one quantity as a percentage of another, e.g. express £400 as a percentage of £1000; find equivalent percentages, decimals and fractions

Secure knowledge of number facts that can be recalled quickly and used and applied appropriately

- Use knowledge of place value and multiplication facts to 10×10 to derive related multiplication and division facts involving decimal numbers, e.g. 0.8×7 , $4.8 \div 6$
- Use knowledge of multiplication facts to derive quickly squares of numbers to 12×12 and the corresponding squares of multiples of 10
- Recognise that prime numbers have only two factors and identify prime numbers less than 100; find the prime factors of two-digit whole numbers
- Use approximations and apply tests of divisibility to check results

Calculate efficiently and accurately

- Calculate mentally with whole numbers and decimals, e.g. $U.t \pm U.t$, $TU \times U$, $U.t \times U$, $HTU \div U$, $U.t \div U$
- Consolidate the use of standard written methods to add, subtract, multiply and divide integers and decimal numbers; calculate the answer to $HTU \div U$ and $U.t \div U$ to one or two decimal places
- Find fractions and percentages of whole-number quantities, e.g. $\frac{5}{8}$ of 96, 65% of £260

- Use a calculator to solve problems involving multi-step calculations; carry out calculations involving time by converting hours and minutes to minutes

Position and transform shapes, recognise and use their properties to visualise and construct

- Describe, identify and visualise parallel and perpendicular edges or faces and use these properties to classify 2-D shapes and 3-D solids
- Make and draw shapes with increasing accuracy and apply knowledge of their properties
- Visualise and draw on grids of different types where a shape will be after reflection, after translations or after rotation through 90° or 180° about its centre or one of its vertices
- Use coordinates in the first quadrant to draw and locate shapes
- Use a protractor to estimate, measure and draw angles, on their own and in shapes; calculate angles in a triangle or around a point

Measure accurately using appropriate units, interpret and compare scales

- Use standard metric units of measure and convert between units using decimals to two places notation, e.g. change 2.75 litres to 2750 ml, or vice versa
- Measure and calculate using imperial units still in everyday use; know their approximate equivalent metric values
- Read scales and record results to a required degree of accuracy, recognising that the measurement made is approximate
- Calculate the perimeter and area of rectilinear shapes; estimate the area of an irregular shape by counting squares

Process, present and interpret data to pose and answer questions

- Describe and predict outcomes from data using the language of chance or likelihood
- Solve problems involving selecting, processing, presenting and interpreting data, using ICT where appropriate; construct and interpret frequency tables, bar charts with grouped discrete data, and line graphs; interpret pie charts; identify further questions to ask
- Describe and interpret results and solutions to problems using the mode, range, median and mean

The Maths Curriculum for Y6 will be renewed in September 2015 as the new National Curriculum for this year group changes.