

National Curriculum for Mathematics - Objectives - Year 5

| | Number | | | | Geometry & Measurement | | | |
|-----|---|--|--|---|---|--|--|--|
| POS | Number and place value | Addition and subtraction | Multiplication and division | Fractions (including decimals and percentages) | Measurement | Properties of shapes | Position and direction | Statistics |
| LO | <p>-read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit.</p> <p>-count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000.</p> <p>-interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers through zero.</p> <p>-round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000.</p> <p>-solve number problems and practical problems that involve all of the above.</p> <p>-read Roman numerals to 1000 (M) and recognise years written in Roman numerals.</p> | <p>-add and subtract whole numbers with more than 4 digits, including using efficient written methods (columnar addition and subtraction).</p> <p>-add and subtract numbers mentally with increasingly large numbers.</p> <p>- use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.</p> <p>-solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.</p> | <p>-identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.</p> <p>-know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.</p> <p>-establish whether a number up to 100 is prime and recall prime numbers up to 19.</p> <p>-multiply numbers up to 4 digits by a one- or two-digit number using an formal written method, including long multiplication for two-digit numbers.</p> <p>-multiply and divide numbers mentally drawing upon known facts.</p> <p>-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.</p> <p>-multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.</p> <p>-recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3).</p> <p>-Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes.</p> <p>-solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.</p> <p>-solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.</p> | <p>-compare and order fractions whose denominators are all multiples of the same number.</p> <p>-identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.</p> <p>-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, $2/5 + 4/5 = 6/5 = 1$ and $1/5$.</p> <p>-add and subtract fractions with the same denominators that are multiples of the same number.</p> <p>-multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.</p> <p>-read and write decimal numbers as fractions (e.g. $0.71 = 71/100$).</p> <p>-recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.</p> <p>-round decimals with two decimal places to the nearest whole number and to one decimal place.</p> <p>-read, write, order and compare numbers with up to three decimal places.</p> <p>-solve problems involving number up to three decimal places.</p> <p>-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 hundred, and as a decimal fraction.</p> <p>-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.</p> | <p>-convert between different units of metric measure (e.g. kilometre and metre; metre and centimetre; centimetre and millimetre; kilogram and gram; litre and millilitre).</p> <p>-understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.</p> <p>-measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres</p> <p>-calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm²) and square metres (m²) and estimate the area of irregular shapes.</p> <p>- estimate volume (e.g. using 1 cm³ blocks to build cubes and cuboids) and capacity (e.g. using water).</p> <p>-solve problems involving converting between units of time.</p> <p>-Use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation.</p> | <p>-identify 3-D shapes, including cubes and cuboids, from 2-D representations.</p> <p>-know angles are measured in degrees; estimate and compare acute, obtuse and reflex angles.</p> <p>-draw given angles and measure them in degrees (°).</p> <p>identify:</p> <p>-angles at a point and one whole turn (total 360°)</p> <p>-angles at a point on a straight line and $1/2$ a turn (total 180°)</p> <p>- other multiples of 90°</p> <p>-use properties of rectangles to deduce related facts and find missing lengths and angles.</p> <p>-distinguish between regular and irregular polygons based on reasoning about equal sides and angles.</p> | <p>-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.</p> | <p>-solve comparison, sum and difference problems using information presented in a line graph.</p> <p>-complete, read and interpret information in tables, including timetables.</p> |