



Maths – Year 6

PLACE VALUE			
Pupils should be taught to: * read, write, order & compare numbers up to 10 000 000 & determine the values of each digit * round any whole number to a required degree of accuracy * use negative numbers in context, & calculate intervals across zero * solve number & practical problems that involve all of the above.			
FLUENCY	REASONING & PROBLEM SOLVING	TEST %	TEACHER ASSESSMENT BEST FIT

ADDITION, SUBTRACTION, MULTIPLICATION & DIVISION			
Pupils should be taught to: * multiply multi-digit numbers up to four digits by a two-digit whole number, using the formal written method of long multiplication * divide numbers up to four digits by a two-digit whole number, using the formal written method of long division, & interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context * divide numbers up to four digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context * perform mental calculations, including with mixed operations & large numbers * identify common factors, common multiples & prime numbers * use their knowledge of the order of operations to carry out calculations involving the four operations * solve addition & subtraction multi-step problems in contexts, deciding which operations & methods to use & why * solve problems involving addition, subtraction, multiplication & division * use estimation to check answers to calculations & determine, in the context of a problem, an appropriate degree of accuracy.			
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FRACTIONS (INCLUDING DECIMALS & %)			
Pupils should be taught to: * use common factors to simplify fractions * use common multiples to express fractions in the same denomination * compare & order fractions, including fractions > 1 * add & subtract fractions with different denominators & mixed numbers, using the concept of equivalent fractions * multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$) * divide proper fractions by whole numbers (e.g. $\frac{1}{3} \div 2 = \frac{1}{6}$) * associate a fraction with division & calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $\frac{3}{8}$) * identify the value of each digit in numbers given to three decimal places & multiply & divide numbers by 10, 100 & 1 000, giving answers up to three decimal places * multiply one-digit numbers with up to two decimal places by whole numbers * use written division methods in cases where the answer has up to two decimal places * solve problems which require answers to be rounded to specified degrees of accuracy * recall & use equivalences between simple fractions, decimals & percentages, including in different contexts.			
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STATISTICS			
Pupils should be taught to: * interpret & construct pie charts & line graphs & use these to solve problems * calculate & interpret the mean as an average.			
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RATIO & PROPORTION

Pupils should be taught to:

- * solve problems involving the relative sizes of two quantities where missing values can be found using integer multiplication & division facts
- * solve problems involving the calculation of percentages (e.g. of measures, & such as 15% of 360) & the use of percentages for comparison
- * solve problems involving similar shapes where the scale factor is known or can be found
- * solve problems involving unequal sharing & grouping using knowledge of fractions & multiples.

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ALGEBRA

Pupils should be taught to:

- * use simple formulae
- * generate & describe linear number sequences
- * express missing number problems algebraically
- * find pairs of numbers that satisfy an equation with two unknowns
- * enumerate possibilities of combinations of two variables.

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MEASUREMENT

Pupils should be taught to:

- * solve problems involving the calculation & conversion of units of measure, using decimal notation up to three decimal places where appropriate
- * use, read, write & convert between standard units, converting measurements of length, mass, volume & time from a smaller unit of measure to a larger unit, & vice versa, using decimal notation to up to three decimal places
 - * convert between miles & kilometres
- * recognise that shapes with the same areas can have different perimeters & vice versa
 - * recognise when it is possible to use formulae for area & volume of shapes
 - * calculate the area of parallelograms & triangles
- * calculate, estimate & compare volume of cubes & cuboids using standard units, including cubic centimetres (cm³) & cubic metres (m³), & extending to other units (e.g. mm³ & km³).

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GEOMETRY

Pupils should be taught to:

- * draw 2-D shapes using given dimensions & angles
- * recognise, describe & build simple 3-D shapes, including making nets
- * compare & classify geometric shapes based on their properties & sizes, & find unknown angles in any triangles, quadrilaterals & regular polygons
- * illustrate & name parts of circles, including radius, diameter & circumference, & know that the diameter is twice the radius
- * recognise angles where they meet at a point, are on a straight line, or are vertically opposite, & find missing angles
 - * describe positions on the full coordinate grid (all four quadrants)
- * draw & translate simple shapes on the coordinate plane, & reflect them in the axes.

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