



Year 5 and 6 Maths Teaching sequence

Maths Constructs

Statistics

I can interpret and construct pie charts and line graphs and use these to solve problems. *I can solve comparison, sum and difference problems using information presented in a line graph.*

I can calculate and interpret the mean as an average.

I can complete, read and interpret information in tables, including timetables.

Fractions

I can use common factors to simplify fractions; use common multiples to express fractions in the same denomination. *I can compare and order fractions whose denominators are all multiples of the same number.*

I can compare and order fractions, including fraction > 1 . *I can identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.*

I can recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number.

I can add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions. *I can add and subtract fractions with the same denominator and multiples of the same number.*

I can multiply simple proper fractions and simplify the answer (e.g. $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$). *I can multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.*

I can divide proper fractions by whole numbers (e.g. $\frac{1}{3} \div 2 = \frac{1}{6}$).

I can identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places. *I can recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.*

I can multiply one-digit numbers with up to two decimal places by whole numbers.

I can use written division methods in cases where the answer has up to two decimal places.

I can recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. *I can solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{3}{5}$, $\frac{1}{5}$ and those with a denominator of a multiple of 10 or 25.*

I can associate a fraction with division and calculate decimal fraction equivalents for example 0.375 for a simple fraction $\frac{3}{8}$. *I can read and write decimal numbers as fractions (e.g. $0.72 = \frac{72}{100}$)*

Place Value

I can read, write, order and compare numbers up to 10 000 000 and determine the value of each digit. *I can read, write, order & compare numbers to at least 1000 000 and determine the value of each digit.*

I can count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000.

I can round any whole number to a required degree of accuracy. *I can round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000*

I can round decimals with two decimal places to the nearest whole number and to one decimal place.

I can read, write, order and compare numbers with up to three decimal places.

I can solve problems involving number up to three decimal places.

I can read Roman numerals to 1000 (M) and recognise years written in Roman numerals.

I can use negative numbers in context, and calculate intervals across zero. *I can interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero.*

I can solve practical place value and number problems.

Measurement

I can solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate. *I can convert between different units of metric measure (e.g. km & m; cm & m; cm & mm; g & kg; l & ml).*

I can convert between miles and km. *I can understand and Use approximate equivalences between metric and imperial units (e.g. inches, pounds & pints).*

I can use, read, write and convert between standard units of measure, converting length, mass, volume and time from smaller to larger units, and vice versa, using decimal notation to up to 3 decimal places.

I can measure & calculate the perimeter of composite rectilinear shapes in cm/m.

I can calculate the area of rectangles using standard units, square cm/m and estimate the area of irregular shapes.

I can recognise that shapes with the same areas can have different perimeters and vice versa.

I can solve problems involving converting between units of time.

I can calculate the area of parallelograms and triangles.

I can recognise when it is possible to use formulae for area and volume of shapes.

I can calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm^3) and cubic metres (m^3), and extending to other units, for example mm^3 and km^3 .

I can estimate volume (e.g. using 1 cm blocks to build cubes/cuboids) and capacity (e.g. using water).

Algebra

I can solve simple formulae

I can generate and describe linear number sequences

I can express missing number problems algebraically

I can find pairs of numbers that satisfy an equation with two unknowns

I can enumerate possibilities of combinations of two variables

Ration and

I can solve problems involving the relations sizes of two quantities where missing values can be found by using integer multiplication and division facts.

I can solve problems involving the calculation of percentages (e.g. of measures) such as 15% of 360 and the use of percentages for comparison

I can solve problems involving similar shapes where the scale factor is known or can be found.

I can solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.

Geometry

I can draw 2-D shapes using given dimensions and angles.

I can recognise, describe and build simple 3-D shapes, including making nets. *I can identify 3D shapes, including cubes and other cuboids, from 2D representations.*

I can compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons. *I can use the properties of rectangles to deduce related facts and find missing lengths and angles.*

I can illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.

I can show that angles are measured in degrees: estimate and compare acute, obtuse and reflex angles.

I can draw given angles, and measure them in degrees.

I can recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. *I can identify: angles at a point and one whole turn (total 360°); angles at a point on a straight line and $\frac{1}{2}$ a turn (total 180°); other multiples of 90° .*

I can describe positions on the full coordinate grid (all four quadrants). (position/direction)

I can draw and translate simple shapes on the coordinate plane, and reflect them in the axes. *I can 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.*

I can multiply numbers up to 4 digits by a 2-digit whole number using the formal written methods of long multiplication and interpret remainders as whole number remainders, fractions, or by rounding. *I can multiply numbers up to 4 digits by a 1- or 2-digit number using a formal written method.*

I can divide numbers up to 4 digits by a two-digit whole number, using formal methods of long division and interpret remainders as whole numbers, fractions, or by rounding. *I can divide numbers up to 4 digits by a 1-digit number using the formal written method of short division.*

I can perform mental calculations, including mixed operations and large numbers

I can identify common factors, common multiples and prime numbers and composite (non-prime) numbers. *I can identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.*

I can establish whether a number up to 100 is prime and recall prime numbers up to 19.

I can use the order of operations to carry out calculations.

I can multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.

I can recognise and use square numbers, and cube numbers, and the notation for squared and cubed.

I can solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. *I can add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction).*

I can solve problems involving addition, subtraction, multiplication and division. *I can solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.*

I can add and subtract numbers mentally with increasingly large numbers.

I can use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. *I can use rounding to check answers to calculations and levels of accuracy.*