

Maths

Age related expectations Assessment Grid for Maths: Year 6

	Number & Place Value	Addition & Subtraction	Multiplication & Division	Fractions	Measurement	Geometry: Shape Properties	Geometry: Position & Direction	Statistics
Year 6: Emerging	Use negative numbers in context and calculate intervals through zero Read, write and order numbers up to 5,000,000 and determine the value of each digit Solve word problems involving the above	Multiply multi-digit numbers up to 4 digits by a 2 digit whole number - using formal long multiplication written method Perform mental calculations, including mixed operations and large numbers Identify common factors, common multiples and prime numbers Solve problems involving the 4 operations - deciding which operation and method to use for each context independently		Use common factors to simplify fractions; use common multiples to express fractions in the same denomination Compare and order fractions, including fractions >1 Add and subtract fractions with different denominators and mixed numbers - using equivalent fractions	Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit (and vice versa) using decimal notation up to 3 decimal places Convert between miles and kilometres	Understand that shapes with the same perimeters can have different areas and vice versa Draw 2D shapes using given measurements and angles Recognise, describe and build simple 3D shapes, including making nets Compare and classify geometric shapes based on properties and size	Describe positions on the full coordinate grid (all 4 quadrants)	Interpret pie charts and line graphs - using interpretations to solve problems Construct line graphs
	Read, write and order numbers up to 10,000,000 and determine the value of each digit Round any whole number to a required degree of accuracy Solve word problems involving the above <u>Algebra:</u> Use simple formulae Express missing number problems algebraically Generate and describe linear number sequences Find pairs of numbers that satisfy an equation with two unknowns Enumerate possibilities of combinations of 2 variables	Divide numbers up to 4 digits by a 2 digit number and interpret remainders as whole numbers, fractions, or rounding, depending on the context of the calculation Use knowledge of the order of operations to carry out calculations involving the four operations Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy <u>Ratio and Proportion</u> Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples Solve problems involving relative sizes of two quantities where missing values can be found using integer multiplication and division facts Solve problems involving the calculation of percentages - eg. 15%-of 460		Multiply 1 digit numbers with up to 2 decimal places by whole numbers, eg. $1.25 \times 12 = 15$ Identify the value of each digit in numbers given to 3 decimal places Multiply and divide numbers by 10, 100 and 1000 up to 3 decimal places - use written methods to show this Recall and use equivalencies between simple fractions, decimals and percentages, including in different contexts Multiply simple pairs of proper fractions, writing the answer in its simplest form, eg: $\frac{3}{4} \times \frac{1}{2} = \frac{1}{8}$ Divide proper fractions by whole numbers: $\frac{1}{3} \div 2 = \frac{1}{6}$ Associate a fraction with division and calculate decimal fraction equivalents, eg. 0.575 becomes $\frac{5}{8}$ Solve problems where answers have to be rounded to specified degrees of accuracy, considering context	Use percentages for comparisons Calculate, estimate and compare volumes of cubes and cuboids using standard units - including cubic centimetres (cm ³), and cubic metres (m ³). Extend to other units such as mm ³ and km ³ Solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 decimal places where appropriate	Solve problems involving similar shapes where the scale factor is known or can be found Recognise when it is possible to use formulae to calculate area and volume of shapes Calculate the area of parallelograms and triangles Find unknown angles of triangles, quadrilaterals and regular polygons Illustrate and name parts of circles, including radius, diameter and circumference Know the diameter is twice the radius Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles	Draw and translate simple shapes on the coordinate plane and reflect them in the axes	Calculate and interpret the mean as an average Construct pie charts
	Compare, order and convert between fractions, decimals and percentages in contexts related to science, history or geography learning Use =, ≠, <, >, ≤, ≥ correctly Recognise an arithmetic progression and recognise the nth term Use the equation of a line expressed algebraically to, create and plot points. Make comparisons between lines in terms of gradient of lines	Move beyond squared and cubed numbers to calculate problems such as $X \times 10^n$ where n is positive Use efficient written methods to multiply including mixed and negative numbers		Using the school environment as a stimulus, create their own fractional problems using the skills above	Create a scaled model of an historical or Geographical structure showing an acceptable degree of accuracy using known measurements Calculate time and costs involved to visit a destination in another part of the world relating to on-going learning in history or geography	Use known formulae for calculating area of shapes, to calculate the area of an irregular area in the school environment Understand and use the equations for finding the area and circumference of a circle Understand how to find the volume of prisms by using the area of its base		Apply the skills above to other areas of the curriculum Collect own data on personal project and present information in formats of their choosing, charts, graphs, and tables Answer specific questions related to their search