

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