Yearly Overview

Subject: Year 8 Maths

Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Prior knowledge: Know how to find common multiples of two given numbers. Know how to find common factors of two given numbers. Recall multiplication facts to 12 × 12 and associated division facts. Fluently recall multiplication facts up to 12 × 12. Fluently apply multiplication facts when carrying out division. Know the formal written method of long multiplication. Know the formal written method of short division. Know the formal written method of long division. Convert between an improper fraction and a mixed number.	**Prior knowledge:** Approximate any number by rounding to the nearest 10, 100 or 1000, 10 000, 100 000 or 1 000 000. Approximate any number with one or two decimal places by rounding to the nearest whole number. Approximate any number with two decimal places by rounding to the one decimal place. Simplify a fraction by cancelling common factors. Understand that negative numbers are numbers less than zero. Order a set of decimals with a mixed number of decimal places. Order fractions where the denominators are multiples of each	**Prior knowledge:** Use symbols to represent missing numbers. Substitute numbers into worded formulae. Substitute numbers into simple algebraic formulae. Know the order of operations. Understand the concept of a fraction as a proportion. Understand the concept of equivalent fractions. Understand the concept of equivalence between fractions and percentages. Find common factors of pairs of numbers. Convert between standard metric units of measurement. Convert between units of time.	**Prior knowledge:** Know the vocabulary of sequences. Find the next term in a linear sequence. Find a missing term in a linear sequence. Generate a linear sequence from its description. Convert between metric units. Use decimal notation up to three decimal places when converting metric units. Convert between common Imperial units, e.g., feet and inches, pounds and ounces, pints, and gallons. Convert between units of time. Use 12- and 24-hour clocks, both analogue and digital. Identify angles that meet at a point.	**Prior knowledge:** Add and subtract fractions with different denominators. Add and subtract mixed numbers with different denominators. Multiply a proper fraction by a proper fraction. Divide a proper fraction by a whole number. Simplify the answer to a calculation when appropriate. Use non-calculator methods to find a percentage of an amount. Convert between fractions, decimals, and percentages. Know the basic rules of algebraic notation. Express missing number problems algebraically. Solve	**Prior knowledge:** Carry out a reflection in a given vertical or horizontal mirror line. Carry out a translation. Construct and interpret a pictogram. Construct and interpret a bar chart. Construct and interpret a line graph. Understand that pie charts are used to show proportions. Use a template to construct a pie chart by scaling frequencies. Understand the meaning of ‘average’ as a typicality (or location). Calculate the mean of a set of data.

	other. Order fractions where the numerator is greater than 1. Know how to simplify a fraction by cancelling common factors. Use a ruler to measure and draw lengths to the nearest millimetre. Use a protractor to measure and draw angles to the nearest degree. Know the names of common 3D shapes. Know the meaning of face, edge, vertex. Understand the principle of a net. Know the names of special triangles and special quadrilaterals. Know the meaning of parallel, perpendicular. Know the notation for equal sides, parallel sides, right angles.	Recall multiplication facts for multiplication tables up to 12 × 12. Recall division facts for multiplication tables up to 12 × 12. Solve comparison problems.	Identify angles that meet at a point on a line. Identify vertically opposite angles. Know that vertically opposite angles are equal.	missing number problems expressed algebraically. Understand the meaning of area, perimeter, volume, and capacity. Know how to calculate areas of rectangles, parallelograms and triangles using the standard formulae. Know that the area of a triangle is given by the formula area = ½ × base × height = base × height ÷ 2 = $\frac{bh}{2}$. Know appropriate metric units for measuring area and volume.	
Term 1 knowledge	**Term 2 knowledge**	**Term 3 knowledge**	**Term 4 knowledge**	**Term 5 knowledge**	**Term 6 knowledge**
This term:	This term:	This term:	This term:	This term:	This term:

Use the concepts and vocabulary of prime numbers, factors (divisors), multiples, common factors, common multiples, highest common factor and lowest common multiple. Use positive integer powers and associated real roots (square, cube and higher), recognise powers of 2, 3, 4, 5. Recognise and use sequences of triangular, square and cube numbers, simple arithmetic progressions. Understand and use place value apply the four operations, including formal written methods, to integers and decimals. Use conventional notation for priority of operations, including brackets recognise and use relationships between operations, including	Round numbers and measures to an appropriate degree of accuracy (e.g. to a specified number of decimal places or significant figures). Estimate answers; check calculations using approximation and estimation, including answers obtained using technology. Recognise and use relationships between operations, including inverse operations (e.g. cancellation to simplify calculations and expressions). Order positive and negative integers, decimals, and fractions use the symbols =, ≠, <, >, ≤, ≥. Identify line and rotational symmetry in polygons. Understand and use labelling notation for lengths and angles.	Understand and use the concepts and vocabulary of expressions, equations, formulae, and terms. Use and interpret algebraic notation, including ab in place of a × b, 3y in place of y + y + y and 3 × y, a^2 in place of a × a, a^3 in place of a × a × a, a/b in place of a ÷ b, brackets. Simplify and manipulate algebraic expressions by collecting like terms and multiplying a single term over a bracket where appropriate, interpret simple expressions as functions with inputs and outputs. Substitute numerical values into formulae and expressions use conventional notation for priority of operations, including brackets.	Recognise simple arithmetic progressions. Use a term-to-term rule to generate a linear sequence and a non-linear sequence. Use standard units of measure and related concepts (length, area, volume/capacity, mass, time, money, etc.). Use standard units of mass, length, time, money, and other measures (including standard compound measures). Using decimal quantities where appropriate. Change freely between related standard units (e.g. time, length, area, volume/capacity, mass) in numerical contexts. Measure line segments and angles in geometric figures. Recognise and solve problems	Apply the four operations, including formal written methods, to simple fractions (proper and improper), and mixed numbers. Interpret percentages and percentage changes as a fraction or a decimal, and interpret these multiplicatively compare two quantities using percentages. Solve problems involving percentage change, including percentage increase/decrease. Recognise and use relationships between operations, including inverse operations (e.g. cancellation to simplify calculations and expressions). Solve linear equations in one unknown algebraically. Use standard units of measure and related concepts (length, area, volume,	Work with coordinates in all four quadrants. Understand and use lines parallel to the axes, y = x and y = -x. Solve geometrical problems on coordinate axes identify, describe, and construct congruent shapes including on coordinate axes, by considering rotation, reflection, and translation describe translations as 2D vectors. Interpret and construct frequency tables. Construct and interpret bar charts and know their appropriate use. Construct and interpret comparative bar charts. Construct and interpret pie charts and know their appropriate use. Construct and interpret vertical line charts. Choose appropriate graphs or

inverse operations (e.g., cancellation to simplify calculations and expressions).	Use ruler and protractor to construct triangles, and other shapes, from written descriptions. Use ruler and compasses to construct triangles when all three sides known. Know the connection between faces, edges, and vertices in 3D shapes. Recognise and use nets of 3D shapes. Know and solve problems using the properties and definitions of triangles. Know and solve problems using the properties and definitions of special types of quadrilaterals (including diagonals). Know and solve problems using the properties of other plane figures.	Express one quantity as a fraction of another, where the fraction is less than 1 or greater than 1. Define percentage as 'number of parts per hundred'. Express one quantity as a percentage of another. Use ratio notation, including reduction to simplest form. Divide a given quantity into two parts in a given part:part or part:whole ratio.	using vertically opposite angles. Recognise and solve problems using angles at a point. Recognise and solve problems using angles at a point on a line.	capacity). Calculate perimeters of 2D shapes. Know and apply formulae to calculate area of triangles, parallelograms, trapezia. Calculate surface area of cuboids. Know and apply formulae to calculate volume of cuboids. Understand and use standard mathematical formulae.	charts to represent data. Interpret, analyse, and compare the distributions of data sets from univariate empirical distributions through appropriate. Measures of central tendency (median, mean and mode) and spread (range).
Future knowledge: Calculating Highest Common Factors and	Future knowledge: Estimating by deciding which degree of	Future knowledge: Collecting like terms. Expanding brackets.	Future knowledge: Calculate nth term of linear sequences and	Future knowledge: Calculate reverse and compound	Future knowledge: Translate using vectors. Reflect using

Lowest Common Multiples in context. Calculating with standard form. Using four operations in context. Problem solving.	accuracy is suitable. Problem solving using estimation. Using inequalities. Converting between fractions, decimals, and percentages. Construct loci. Use bearings. Draw nets of 3D shapes. Plans and elevation.	Solving equations. Add, subtract, multiply and divide fractions and decimals. Calculate with percentages. Share amounts into given ratio. Use proportion to solve problems.	quadratic sequences. Convert and problem solve metric and imperial units. Calculate compound units. Calculate missing angles of any polygons. Use properties of angles to find missing angles.	percentages using multipliers. Solving equations with brackets. Solving by factorising. Using formulae to calculate area and perimeter. Calculate area of compound shapes. Calculate area of parts of circles.	lines of reflection. Rotation using centre of rotation. Enlarge using centre of enlargement. Interpreting scatter graphs. Drawing pie charts. Calculating estimate mean. Calculating modal class.