

Sequenced	Measures of location	Area of circles and trapezia	Properties of number	Percentages	Area and volume	Equations, inequalities and formulae	Fractions	Rates
Key Knowledge	To know that: • Mean, median, and mode are averages, range measures spread (consistency). • Mean is calculated as total $\div$ frequency total; median is the central value in ordered data; mode is the most frequent value.	To know that: • A trapezium has one pair of parallel sides; its area formula is $\text{Area} = \frac{1}{2}(a + b)h$. (this is provided in the question and does not need to be memorised) • π (3.14 to 2 decimal places) is the ratio of a circle's circumference to its diameter where $\pi = C / d$. • Circle area is $A = \pi r^2$ and circumference is $C = \pi d = 2\pi r$. • Calculations require perpendicular heights rather than slant heights.	To know that: • Integers greater than 1 can be uniquely expressed as a product of prime factors. • Prime factorisations can be written in index form $a^n \times b^m$ and represented on Venn diagrams. • Highest Common Factor (HCF) and Lowest Common Multiple (LCM) are derived from prime factor intersections and unions.	To know that: • Percentages are parts per hundred and convert directly to decimal multipliers. • Percentage change is given by $\text{Percentage Change} = (\text{Change} / \text{Original}) \times 100\%$. • Multipliers > 1 represent percentage increases; multipliers < 1 represent decreases. • Compound growth and decay apply multipliers iteratively over time • Reverse percentages require working backward to find the original 100% value.	To know that: • Sector area is $A = (\theta / 360^\circ) \times \pi r^2$; arc length is $L = (\theta / 360^\circ) \times 2\pi r$. • Prism volume is $V = \text{Area of cross-section} \times h$; cylinder volume is $V = \pi r^2 h$. • Pyramid and cone volume is $V = \frac{1}{3} \times \text{Base Area} \times h$; sphere volume is $V = \frac{4}{3}\pi r^3$. • Surface area is the sum of all outer 2D boundary faces.	To know that: • Equations equate expressions ($=$); identities hold true for all values ($\equiv$); formulae relate real-world variables. • Multiplying or dividing an inequality by a negative number reverses the inequality symbol • Changing the subject of a formula requires applying inverse operations symmetrically. • Simultaneous equations represent intersecting conditions satisfied by a shared coordinate pair (x, y).	To know that: • Adding and subtracting fractions requires common denominators • Dividing fractions requires multiplying by the reciprocal • Improper fractions and mixed numbers follow identical operational rules. • Recurring decimals represent rational numbers and convert to exact fractions (e.g. $0.\dot{a} = a / 9$).	To know that: • A rate compares two quantities measured in different units (e.g. m/s, g/cm³, £/kg). • Compound measures link variables: $\text{Speed} = d / t$, $\text{Density} = m / V$, $\text{Pressure} = F / A$. • Unit conversions for compound rates require scaling both numerator and denominator units. • Direct proportion implies $y \propto x$ ($y = kx$); inverse proportion implies $y \propto 1/x$ ($y = k / x$).
Key Skills	To be able to: • Calculate mean, median, mode, and range for raw data and frequency tables. • Estimate the mean from grouped frequency tables using midpoints where $\text{Estimated Mean} = (\sum fx) / (\sum f)$. • Choose and justify the most appropriate measure of location for a given context. • Compare two distributions using a measure of location and a measure of spread.	To be able to: • Calculate the area of trapezia using perpendicular heights. • Calculate area and perimeter/circumference for circles, semi-circles, and quarter circles. • Calculate areas and perimeters of compound shapes. • Express answers rounded to decimal places/significant figures or exactly in terms of π.	To be able to: • Write composite numbers as products of prime factors using index notation. • Find HCF and LCM using prime factor trees and Venn diagrams. • Solve contextual problem-solving tasks involving repeating cycles or shared factors. • Identify integers, rational numbers, and simplify basic surd expressions.	To be able to: • Calculate percentage increases and decreases using decimal multipliers. • Calculate simple and compound interest, appreciation, and depreciation. • Find original values using inverse operations in reverse percentage problems • Express one quantity as a percentage of another in multi-step contexts.	To be able to: • Calculate arc lengths, sector areas, and composite 2D shape areas. • Calculate volumes of prisms, cylinders, pyramids, cones, and spheres. • Calculate total surface area for standard and composite 3D solids. • Solve reverse problem-solving tasks to find missing lengths, radii, or heights.	To be able to: • Solve linear equations and inequalities involving brackets, fractions, and negative terms. • Represent inequality solutions on number lines using $<$, $>$, $\leq$, $\geq$. • Rearrange complex formulae where the subject appears once or multiple times. • Form and solve equations/inequalities from geometric and worded problems.	To be able to: • Perform all four operations with mixed numbers and improper fractions. • Calculate fractional amounts in contextual and multi-step word problems. • Simplify, add, subtract, multiply, and divide simple algebraic fractions. • Convert fluently between fractions, decimals (including recurring), and percentages.	To be able to: • Calculate speed, distance, time, mass, density, volume, force, pressure, and area. • Convert between compound units (e.g. km/h to m/s). • Solve unit pricing, best-buy, and currency conversion problems. • Interpret and construct conversion and rate-of-flow graphs.
Subject specific vocabulary	Compare, distribution, grouped frequency table, interval, justify, mean, measure of location, median, midpoint, mode, outlier, range, represent, robust, spread	Arc, circumference, compound, derive, diameter, exact, parallel, perimeter, perpendicular, Pi (π), preserve, radius, sector, trapezium	Classify, evaluate, HCF, index notation, irrational number, LCM, prime factorisation, product, rational number, represent, surd, systematic, unique, Venn diagram	Compound interest, decay, decrease, depreciation, growth, increase, invert, multiplier, original, percentage change, principal, rate, reverse percentage	Arc length, capacity, composite, cone, cross-section, dimensions, exact value (π), prism, pyramid, sector, sphere, surface, surface area, uniform	Equivalent, formula, identity, inverse, inverse operation, isolate, linear inequality, preserve, simultaneous equations, subject, subject of formula, transform	Algebraic fraction, combine, convert, denominator, equivalent, evaluate, improper fraction, mixed number, numerator, operation, reciprocal, recurring decimal, simplify	Average, compare, compound measure, constant, direct proportion, density, inverse proportion, pressure, proportional, relationship, scale, speed, unit rate