

Topic	Content
Number	<p>Routine use of addition, subtraction, multiplication and division, using integers, decimals and fractions, including order of operations.</p> <p>Simple positive exponents.</p> <p>Simplification of expressions involving roots (surds or radicals).</p> <p>Prime numbers and factors, including greatest common divisors and least common multiples.</p> <p>Simple applications of ratio, percentage and proportion, linked to similarity.</p> <p>Definition and elementary treatment of absolute value (modulus), a.</p> <p>Rounding, decimal approximations and significant figures, including appreciation of errors.</p> <p>Expression of numbers in standard form (scientific notation), that is, $a \times 10^k$, $1 \leq a < 10$, $k \in \mathbb{Z}$.</p>
Sets and numbers	<p>Concept and notation of sets, elements, universal (reference) set, empty (null) set, complement, subset, equality of sets, disjoint sets.</p> <p>Operations on sets: union and intersection.</p> <p>Commutative, associative and distributive properties.</p> <p>Venn diagrams.</p> <p>Number systems: natural numbers; integers, \mathbb{Z}; rationals, \mathbb{Q}, and irrationals; real numbers, \mathbb{R}.</p> <p>Intervals on the real number line using set notation and using inequalities. Expressing the solution set of a linear inequality on the number line and in set notation.</p> <p>Mappings of the elements of one set to another. Illustration by means of sets of ordered pairs, tables, diagrams and graphs.</p>
Algebra	<p>Manipulation of simple algebraic expressions involving factorization and expansion, including quadratic expressions.</p> <p>Rearrangement, evaluation and combination of simple formulae. Examples from other subject areas, particularly the sciences, should be included.</p> <p>The linear function and its graph, gradient and y-intercept.</p> <p>Addition and subtraction of algebraic fractions</p> <p>The properties of order relations: $<$, \leq, $>$, \geq.</p> <p>Solution of equations and inequalities in one variable, including cases with rational coefficients.</p> <p>Solution of simultaneous equations in two variables.</p>

Topic	Content
Trigonometry	<p>Angle measurement in degrees. Compass directions and three figure bearings.</p> <p>Right-angle trigonometry. Simple applications for solving triangles.</p> <p>Pythagoras' theorem and its converse.</p>
Geometry	<p>Simple geometric transformations: translation, reflection, rotation, enlargement.</p> <p>Congruence and similarity, including the concept of scale factor of an enlargement.</p> <p>The circle, its centre and radius, area and circumference. The terms “arc”, “sector”, “chord”, “tangent” and “segment”.</p> <p>Perimeter and area of plane figures. Properties of triangles and quadrilaterals, including parallelograms, rhombuses, rectangles, squares, kites and trapeziums (trapezoids); compound shapes.</p> <p>Volumes of prisms, pyramids, spheres, cylinders and cones.</p>
Coordinate geometry	<p>Elementary geometry of the plane, including the concepts of dimension for point, line, plane and space. The equation of a line in the form $y = mx + c$.</p> <p>Parallel and perpendicular lines, including $m_1 = m_2$ and $m_1 m_2 = -1$.</p> <p>Geometry of simple plane figures.</p> <p>The Cartesian plane: ordered pairs (x, y), origin, axes.</p> <p>Mid-point of a line segment and distance between two points in the Cartesian plane and in three dimensions.</p>
Statistics and probability	<p>Descriptive statistics: collection of raw data; display of data in pictorial and diagrammatic forms, including pie charts, pictograms, stem and leaf diagrams, bar graphs and line graphs.</p> <p>Obtaining simple statistics from discrete and continuous data, including mean, median, mode, quartiles, range, interquartile range.</p> <p>Calculating probabilities of simple events.</p>