

Second Form Mathematics Syllabus



Term I

Set Theory: Definition of a set; element or member of a set; set representation; types of sets (finite, infinite and null); equal and equivalent sets; union, intersection and complement; and Venn diagrams and their use in simple logical problems (two sets only). Recognize the subsets of a set.

Number Theory: Sets of numbers (natural numbers, whole numbers, integers, rational and irrational numbers, and real numbers); sequences; arranging numbers in order of size; LCM and HCF; odd and even numbers; prime and composite numbers. Know the laws of indices. Number bases (binary).

Computation I: Applying the operations of adding, subtracting, multiplying and dividing to whole numbers, decimals and fractions. The rule of BODMAS (brackets, of, division, multiplication, addition and subtraction). Find squares and square roots.

Algebra I: Directed numbers (number line); substitution; collecting like terms; and simplifying expressions using the basic mathematical operations — addition, subtraction, multiplication and division (including brackets). Operations; algebraic fractions.

Geometry I: The different types of angles, triangles and quadrilaterals and problems associated with angles, triangles and quadrilaterals. Properties of angles formed by intersecting lines, parallel lines and perpendicular lines; types of polygons.

Consumer Arithmetic I: Profit and loss; discount and sales tax, and hire purchase. Commission; wages and salaries; and simple income tax problems.

Term II

Computation II: Approximation; rounding off to the nearest whole number, ten (tenth), hundred (hundredth), etc, and rounding to decimal places. Ratio and proportion. Money conversion. Use standard form. Express a given number in significant figures.

Algebra II: Indices; equations and inequalities, and word problems. Changing the subject of the formula.

Geometry II: Geometrical Transformations — translation, reflection and rotation.

Consumer Arithmetic II: Shopping bills and simple interest. Utility bills and calculating the marked price.

Relations, Functions and Graphs: Relations, mappings and functions. Coordinates and graphs of simple linear functions. Interpret information on travel graphs. Draw graphs of simple quadratic functions.

Term III

Measurement: Measurement of length, area, volume, mass and time. Perimeter & area of triangles, quadrilaterals and combination shapes. Cuboids; calculating the total length of the edges, total surface area, and volume. Calculating speed, distance and time. Determine the circumference and area of a circle.

Statistics and Probability: Definition of statistics. Collecting data using a tally chart and organizing it into a frequency table. Analysing and interpreting data, calculating averages and determining the range of a set of data. Illustrating data by means of pictographs, bar

charts, pie charts and line graphs. Illustrate data by means of histograms and frequency polygons. Calculating the mean, mode and median. Probability.

Revision: Past examination papers.