



INTERNATIONAL SCHOOL OF SOUTH AFRICA

FORM 1 – UPPER 6 YEARLY OVERVIEW

MATHEMATICS

RATIONAL

Mathematics contributes to the school curriculum by developing students' abilities to calculate, to reason logically, algebraically, and geometrically; to solve problems and handle data. Mathematics is important for students in many other areas of study, particularly Science and technology. It is also important in everyday living, in many forms of employment, and in public decision-making. As a subject on its own right, Mathematics presents frequent opportunities for creativity, and can stimulate moments of pleasure and wonder when a problem is solved for the first time, or a more elegant solution to a problem is discovered, or when hidden connections suddenly manifest.

It enables students to build a secure framework of a mathematical reasoning, in which they can use and apply with confidence. The power of mathematical reasoning lies in its use and apply with confidence. The power of mathematical reasoning lies in its use of precise and concise forms of language, symbolism and representation to reveal and explore general relationships. These mathematical forms are widely used for modelling situations; a trend accelerated by computational technologies.

The subject transcends cultural boundaries and its importance is universally recognised. Mathematics helps us to understand and change the world.

Cambridge programmes and qualifications develop not only subject knowledge but also skills. We encourage Cambridge learners to be:

- confident in working with information and ideas – their own and those of others
- responsible for themselves, responsive to and respectful of others
- reflective as learners, developing their ability to learn
- innovative and equipped for new and future challenges
- engaged intellectually and socially, ready to make a difference.



OUTLINE OF FORM 1

TERM 1

1. Number Work (all 4 basic concepts)
2. Fractions
3. Decimals
4. Factors and multiples

TERM 2

1. Metric units.
2. Factors, multiples and indices
3. Directed numbers
4. Algebra, equations
5. Geometry

TERM 3

1. Angles
2. Area of plane shapes
3. Volume
4. Coordinates
5. Symmetry
6. Statistics



OUTLINE OF FORM 2

TERM 1

1. Indices
2. Approximations and Standard Form
3. Constructions
4. Scale Drawings
5. Equations and formulae
6. Equations and Formulae

TERM 2

1. Constructions
2. Scale Drawing
3. Statistics
4. Squares and Square Roots
5. Pythagoras' Theorem
6. Perimeter and Area

TERM 3

1. Coordinates and the straight line
2. Consumer Arithmetic
3. Transformations
4. Circles: Circumferences and Areas



OUTLINE OF FORM 3

TERM 1

1. Calculator use
2. Number and set notation
3. Indices
4. Percentages
5. Proportion
6. Algebra

TERM 2

1. Quadratic equations by factorisation.
2. Simultaneous equations
3. Inequalities
4. Sequences and nth term
5. Travel graphs and conversion graphs
6. Circles, including circumference and area of a circle as well as the length of arcs.

TERM 3

1. Polygons
2. Simple solid shapes as well as nets
3. Circle geometry excluding tangents
4. Everything on straight lines
5. Trigonometry-two weeks
6. All the probability-two weeks



OUTLINE OF FORM 4

TERM 1

1. Number work (standard form and sequences)
2. Ratio, rate and proportion
3. Limits of accuracy
4. Indices
5. Matrices
6. Number and set notation

TERM 2

1. Chords and tangents of a circle
2. Applications of sets.
3. Algebraic representation and manipulation
4. Equations (including quadratic) and inequalities
5. Functions

TERM 3

1. Graphs of functions
2. Similarity and congruency
3. Mensuration
4. trigonometry



OUTLINE OF FORM 5

TERM 1

1. Statistics
2. Construction and loci
3. Graphs in practical situation
4. Vectors- weeks
5. Transformations 1

TERM 2

1. Trigonometry
2. Probability
3. Transformations 2
4. Linear Programming

TERM 3

Revision



OUTLINE OF AS Level

PURE MATHEMATICS

TERM 1

1. Surds and indices
2. Coordinate Geometry
3. Quadratics
4. Functions
5. Circular measure
6. Trigonometry

TERM 2

1. Vectors
2. Series
3. Differentiation and Integration

TERM 3

Revision

STATISTICS

TERM 1

1. Data representation
2. Permutations and Combinations

TERM 2

1. Probability
2. Discrete random variables
3. Normal distribution

TERM3

Revision



OUTLINE OF A Level

PURE MATHEMATICS

TERM 1

1. Algebra
2. Logarithmic and Exponential functions
3. Trigonometry
4. Differentiation
5. Integration

TERM 2

1. Numerical solutions of equations
2. Vectors
3. Differential equations
4. Complex numbers

STATISTICS

TERM 1

1. The Poisson distribution
2. Linear combinations of random variables
3. Continuous random variables
4. Sampling and estimation

TERM 2

1. Hypothesis testing

TERM 3

Revision



MECHANICS

TERM 1

1. Forces and equilibrium
2. Kinematics of motion in a straight line

TERM 2

1. Newton's law of motion
2. Energy, work and power

TERM 3

Revision

TOPICS / CONCEPTS COVERED IN EACH FORM

FORM 1	

FORM 2	

FORM 3	

FORM 4	

FORM 5	
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LOWER 6	

UPPER 6	