

**GRADE 9 MATHEMATICS**

RATIONALE:

The **Grade 9** curriculum represents a culmination of the basic tools which facilitate the student in demonstrating mathematical reasoning and competence.

Furthermore, it provides the foundation for the International General Certificate of Secondary Education (IGCSE).

REQUIRED TEXT:

IGCSE Mathematics 2nd Edition (Ric Pimentel and TerryWall)

**OR**

IGCSE Cambridge International Mathematics (Black, Ryan, Haese, et. al.)

REQUIRED MATERIAL FOR CLASS:

Notebook, Folder Paper, graph book, letter – size folder to store worksheets, 30cm ruler, pens, pencils, eraser, geometry sets, calculator .

ASSESSMENT

In addition to tests, homework and class work, students will be assessed through projects, presentations, problem solving investigations

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| **TERM 1** |
| TOPIC | CONTENT/LEARNING OUTCOMES |
| UNIT 1 ALGEBRA | * Solving equations
* Factorisation
	+ simple factorizing
	+ factorising by grouping
	+ factoring difference of squares
* Expansion
* Transposition
* Indices
* Algebraic Fractions – simplifying and solving

Simultaneous Equations (included worded problems)* Direct variation
* Indirect variation
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| UNIT 2NUMBER  | * Rounding
* Significant Figures
* Limits of accuracy
* Standard form including calculations with standard form
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| **TERM 2** |
| UNIT 10MENSURATION | * Review areas of plane shapes
* Find areas of triangles – using semi-perimeter formula and the sine formula
* Volume and Surface areas of Solids
* Solve Problems involving length of arcs and areas of sectors
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| UNIT 3SIMILAR SHAPES& ENLARGEMENT | * Enlargement of plane shapes.
* Distinguish between similar and congruent shapes
* Use ratio of corresponding sides(scale factor) to find unknown lengths
* Area and Volume factor
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| UNIT 4TRIGONOMETRY | * Pythagoras theorem
* Trigonometric Ratios
* Angles of elevation and depression
* Three- figure bearings and scale drawing
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| **TERM 3** |
| UNIT 5SETS | * Define set, element, finite, infinite, null or empty, universal, Equal versus Equivalent sets
* Number of elements in a set
* Subsets, Number of subsets
* Complement
* Intersection and Union
* Venn Diagrams
* Two and three set problems
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| UNIT 9COORDINATE GEOMETRY | * Review: Equation of a straight line, gradient of parallel & perpendicular lines, Straight line graphs
* Length & Midpoint of a line
* Solving equations graphically
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