

MATHEMATICS

Course Structure & Syllabus

Units	Topics
Term I	
1	Rational Numbers
2	Exponents and Powers
3	Squares and Squares Roots, Cubes and Cube Roots
4	Linear Equations in one variable
5	Understanding Quadrilaterals and Constructions
6	Mensuration
Term II	
7	Algebraic Expressions, Identities and Factorization
8	Ratio, proportion and percentage
9	Direct and Inverse Proportion
10	Representing 3D in 2D
11	Playing with Numbers
12	Data Handling

Course Syllabus

Unit 1: Rational Numbers

- Definition and operations on rational numbers
- Properties on Rational Numbers
- Representation of rational numbers on number line
Finding two or more rational numbers between two given rational numbers
- BODMAS
- Applications of rational numbers in problem solving

Unit 2: Exponents and Powers

- Exponents
- Laws of Exponent
- Application of Laws of Exponents

Unit 3: Squares and Square Roots; Cubes and Cube

- Introduction to Squares
- Properties of Squares of natural numbers
- Square Root of a given number
- Estimation of square root
- Applications of square and square root of a number
- Introduction to Cube of a number
- Properties of cubes of natural numbers
- Cube Root of a given number
- Application of cubes and cube of a number

Unit 4: Linear Equations in One Variable

- Linear equations
- Solution of Linear equations
- Application of Linear equations

Unit 5: Linear Understanding Quadrilaterals and Constructing Quadrilaterals

- Introduction to term polygon and its types
- Angle sum property of a polygon
- Types of Quadrilaterals with their properties
- Types of parallelograms
- Construction of Quadrilaterals

Unit 6: Mensuration

- Area of 2-dimensional figures
- Area of 3-dimensional figures
- Volume of 3-dimensional figures

- Applications of volume and surface area

Unit 7: Algebraic Expressions, Identities and Factorization of algebraic expressions

- Algebraic expression
- Multiplication of algebraic expressions
- Algebraic identities
- Factorization
- Division of two algebraic expressions

Unit 8: Comparing Quantities

- Ratio and Proportion
- Percentage
- Profit and Loss
- Sales Tax and Value Added Tax (VAT)
- Compound Interest

Unit 9: Direct and Inverse Proportion

- Direct Proportion
- Inverse Proportion
- Mixed Problems

Unit 10: Representing 3 D in 2 D

- Identification of 3-D objects
- Different views of 3-D objects
- Introduction to Map
- Polyhedron
- Euler's Formula

Unit 11: Playing with Numbers

- General form of a number
- Letters for digits (decoding the digits from letters)
- Divisibility tests

Unit 12: Data Handling

- Graphical representation of data
- Group data
- Histogram
- Pie Chart
- Probability