

# INTERNATIONAL FSP CONTESTS

## MATHEMATICS CONTEST

### OVERVIEW OF THE COURSE OUTLINE AND LEARNING OBJECTIVES

#### GRADE I & II

##### 1. MONEY

- Topics: Addition and subtraction of money
- Focus: Basic understanding of currency, simple transactions involving addition and subtraction of amounts.

##### 2. TIME

- Topics: Clock, telling time
- Focus: Introduction to clock faces, recognizing hours and possibly half hours.

##### 3. SHAPES

- Topics: Naming & Recognition of shapes
- Focus: Identifying basic shapes like circles, squares, triangles, rectangles.

##### 4. FRACTIONS

- Topics: Half, Quarter
- Focus: Basic introduction to simple fractions using everyday examples.

##### 5. PRE-NUMBER CONCEPTS

- Topics: Tall, short, big, small
- Focus: Understanding basic comparisons and attributes of objects.

##### 6. NUMBERS

- Topics: Odd and Even Numbers
- Focus: Recognizing and identifying odd and even numbers.

##### 7. ARITHMETIC OPERATIONS

- Topics: Addition and subtraction with 1-digit and 2-digit numbers
- Focus: Basic addition and subtraction problems involving single and double-digit numbers.

# **GRADE III & IV**

## **1. FRACTIONS**

- Topics: Addition and subtraction with same denominator
- Focus: Understanding fractions, performing basic operations with like denominators.

## **2. DECIMALS**

- Topics: Addition and subtraction of decimals
- Focus: Introduction to decimals, basic operations aligning decimal points.

## **3. GEOMETRY & MEASUREMENT**

- Topics:
  - Perimeter and Area of square and Rectangle
  - Angles- Types of angles (acute, right, obtuse)
- Focus: Calculating perimeter and area; recognizing angle types.

## **4. NUMBERS**

- Topics: Place Value
- Focus: Understanding place value up to thousands or more.

## **5. ARITHMETIC OPERATIONS**

- Topics: Addition, Subtraction, Multiplication, Division
- Focus: Applying operations with multi-digit numbers, understanding properties.

## **6. MONEY**

- Topics: Four Arithmetic operations (addition, subtraction, multiplication, division)
- Focus: Applying math operations to monetary amounts, basic transactions.

# GRADE V & VI

## 1. ARITHMETIC OPERATIONS

- Focus: Mastery of addition, subtraction, multiplication, division with larger numbers and decimals.

## 2. FACTORS & MULTIPLES

- Topics: Factors, multiples, prime numbers, LCM, HCF
- Focus: Understanding relationships between numbers.

## 3. FRACTIONS & PERCENTAGES

- Topics:
  - Expressing fractions as percentages
  - Expressing percentages as fractions
- Focus: Conversions and applications of fractions and percentages.

## 4. ALGEBRA

- Topics: Introduction to basic algebraic expressions, variables
- Focus: Representing unknowns, simple equations.

## 5. VOLUME

- Topics: Volume of cube and cuboid
- Focus: Calculating volume using formulas ( $V = l \times w \times h$  for cuboid).

## 6. DECIMALS

- Topics: Multiplication & Division of decimals
- Focus: Operations with decimals, aligning with place value.

## 7. ROUNDING NUMBERS

- Topics: Rounding to nearest whole number, tenth, hundredth
- Focus: Estimation and approximation techniques.

# **GRADE VII & VIII**

## **1. EXPONENTS AND POWERS**

- Topics: Laws of exponents, expressing numbers in exponential form
- Focus: Understanding and applying rules of exponents.

## **2. AREA**

### **- TOPICS: AREA OF POLYGONS, PARALLELOGRAM**

- Focus: Calculating areas of various shapes using formulas.

## **3. PROPORTION**

- Topics: Direct and inverse proportion
- Focus: Understanding relationships between quantities, solving problems.

## **4. RATIONAL NUMBERS**

- Topics: Operations with rational numbers, properties
- Focus: Working with fractions and their representations.

## **5. DATA HANDLING**

- Topics: Mean, Median, Mode
- Focus: Analyzing data using measures of central tendency.

## **6. RATIOS & PERCENTAGES**

- Topics: Applications of ratios, percentage calculations
- Focus: Solving problems involving comparisons and changes.

## **7. SQUARE AND SQUARE ROOTS**

- Topics: Squares, square roots, perfect squares
- Focus: Understanding relationships between numbers.

## **8. ALGEBRAIC EXPRESSIONS**

- Topics: Forming expressions, simplification, operations
- Focus: Introduction to manipulating algebraic expressions.

# GRADE IX & X

## 1. TRIGONOMETRIC RATIOS

- Topics: Basic trigonometric ratios (sine, cosine, tangent), identities
- Focus: Applying trigonometry to solve problems involving angles and triangles.

## 2. STATISTICS (GROUPED DATA)

- Topics: Mean, Median, Mode for grouped data
- Focus: Analyzing and interpreting data using central tendency measures.

## 3. EXPONENTIAL AND LOGARITHM FUNCTIONS

- Topics: Properties of exponents, logarithmic functions, equations
- Focus: Understanding growth patterns, solving exponential/log equations.

## 4. REAL NUMBERS

- Topics: Properties, operations involving real numbers, irrational numbers
- Focus: Understanding number systems and relationships.

## 5. POLYNOMIALS

- Topics: Operations, factorization, remainder theorem
- Focus: Manipulating and solving polynomial expressions/equations.

## 6. EQUATIONS

- Topics: Linear Equations, Quadratic Equations
- Focus: Solving equations using various methods (factorization, formula).

## 7. MATRICES

- Topics: Basic operations, types of matrices
- Focus: Introduction to matrix algebra and applications.

## 8. GEOMETRY

- Topics:
  - Lines and angles (properties, theorems)
  - Surface area and volume— Cube, Cuboid and Sphere
- Focus: Applying formulas for surface area/volume; understanding geometric relationships.

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## INT. MATHEMATICS CONTEST

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