



THE INTERNATIONAL SCHOOL BANGALORE GRADE 8 – MATHEMATICS ENTRANCE EXAMINATION DETAILS

1. SYLLABUS OUTLINE

A student applying to Grade 8 is expected to have sufficient knowledge and understanding of the following topics, as per a Grade 7 level curriculum:

1. Number Systems

- **Integers:** Operations (addition, subtraction, multiplication, division), properties (commutative, associative, distributive), order of operations (BODMAS).
- **Fractions & Decimals:**
 - Simplification, conversion between forms.
 - Operations: addition, subtraction, multiplication, division.
- **Rational Numbers:**
 - Properties, representation on number line.
 - Operations and comparing rational numbers.
- **Factors & Multiples:**
 - LCM, HCF (using prime factorization, division method).
 - Divisibility rules.
- **Square & Cube Numbers:**
 - Perfect squares/cubes, square roots and cube roots (including estimation and factor method).
- **Exponents & Powers:**
 - Laws of exponents (multiplying, dividing, raising powers).
 - Scientific notation and standard form.

2. Algebra

- **Basic Algebraic Expressions:**
 - Terms, coefficients, like and unlike terms.
 - Simplification and evaluation.
- **Operations on Algebraic Expressions:**
 - Addition, subtraction, multiplication of monomials and polynomials.
 - Use of identities:
 - $(a+b)^2 = a^2 + 2ab + b^2$
 - $(a-b)^2 = a^2 - 2ab + b^2$
 - $a^2 - b^2 = (a+b)(a-b)$
- **Linear Equations in One Variable:**
 - Solving simple and multi-step equations.
 - Applications in word problems.
- **Factorization:**
 - Taking common factors, using identities.
- **Simple Inequalities:**
 - Solving and graphing on a number line.

3. Data Handling and Statistics

- **Types of Data:** Discrete and continuous.
- **Reading and Drawing Graphs:**
 - Bar graphs, line graphs, pie charts.
- **Mean, Median, Mode:** For ungrouped data.
- **Probability (Basic):**
 - Understanding chance and likelihood (0 to 1).
 - Simple problems using coins, dice.

4. Geometry

- **Lines and Angles:**
 - Types of angles, complementary & supplementary angles.
 - Properties of parallel lines with transversal.
 - Angle sum property of triangle and quadrilateral.
- **Triangles:**
 - Types by sides and angles.
 - Congruence criteria (SAS, ASA, SSS).
- **Quadrilaterals:**
 - Properties of parallelogram, rectangle, square, rhombus, trapezium.
- **Circles:**
 - Basic terms: radius, diameter, chord, arc, sector.
 - Angle at center, properties of chords.

5. Mensuration

- **Perimeter and Area:**
 - Triangle, square, rectangle, parallelogram, trapezium, circle.
- **Surface Area and Volume:**
 - Cubes and cuboids.
 - Cylinders and spheres.

6. Ratio, Proportion & Percentages

- **Ratio & Proportion:**
 - Equivalent ratios, word problems.
- **Unitary Method:** (Finding value of one and multiplying).
- **Percentages:**
 - Finding percentages, increase/decrease.
 - Applications: profit & loss, discount, interest.
- **Simple Interest:**
 - Formula:

7. Commercial Math

- **Profit & Loss:**
 - Cost price, selling price, profit/loss percentage.
- **Simple Interest** (as mentioned above).

QUESTION PAPER PATTERN

- **Nature of Questions:** Multiple Choice Questions (MCQs)
- **Number of Questions:** 40
- **Duration:** 40 minutes

Links to Past Question Papers

[Grade 8 Math Entrance question Paper.pdf](#)

[Grade 8-Entrance-ANSWER KEY.pdf](#)