School Connect Online

SCO INTERNATIONAL

MATHS OLYMPIAD

CLASS 9 OFFICIAL SYLLABUS

Chapter-wise syllabus, learning outcomes, preparation pathway and assessment focus for Class 9 Maths

Designed from Class 9 syllabus pathways and aligned with SCO's platform flow for guided preparation, practice, reporting, and future-ready academic growth.

- age-fit learning guidance for Grade 9 learners globally
- chapter-wise pathways across number systems, algebra, geometry, mensuration, statistics and probability
- Olympiad-oriented reasoning, accuracy, explanation and academic enrichment

Number System	Polynomials	Coordinate Geometry	Euclid Geometry	Mensuration
Statistics	Probability	Triangles	Circles	Constructions

SCO International Maths Olympiad - Class 9 Official Syllabus

This syllabus is designed for Grade 9 learners preparing for the SCO International Maths Olympiad. It develops conceptual clarity, computational fluency, spatial reasoning, data interpretation, and Olympiad-style problem solving across the full Class 9 mathematics pathway.

Exam Learning Architecture

Learning Strand	Core Focus	Olympiad Skill	Assessment Evidence
Number Sense	Real numbers, exponents, rationalisation	Precision and symbolic manipulation	Simplification and reasoning items
Algebra	Polynomials and linear equations	Pattern recognition and model building	Zeroes, factorisation, graph interpretation
Geometry	Euclid, angles, triangles, circles	Proof thinking and spatial logic	Theorem-based MCQs and diagrams
Mensuration	Areas and volumes	Formula selection and unit accuracy	Applied geometry problems
Data & Chance	Statistics and probability	Interpretation and decision-making	Tables, graphs, probability cases

Chapter-wise Syllabus and Learning Outcomes

1

Number System

Real numbers, rational and irrational numbers, decimal expansions, powers, exponents and rationalisation.

Learning outcomes: understand and recall key definitions, properties and formulae; solve standard and unfamiliar problems with clear steps; interpret mathematical information from diagrams, tables or real-life contexts; avoid common misconceptions through verification and estimation.

2

Polynomials

Zeroes, coefficients, factor theorem, algebraic identities, factorisation and value-based reasoning.

Learning outcomes: understand and recall key definitions, properties and formulae; solve standard and unfamiliar problems with clear steps; interpret mathematical information from diagrams, tables or real-life contexts; avoid common misconceptions through verification and estimation.

3

Coordinate Geometry

Cartesian plane, quadrants, plotting points, axes, coordinates and simple interpretation of graphs.

Learning outcomes: understand and recall key definitions, properties and formulae; solve standard and unfamiliar problems with clear steps; interpret mathematical information from diagrams, tables or real-life contexts; avoid common misconceptions through verification and estimation.

4

Linear Equations in Two Variables

Solutions of linear equations, intercepts, graphical meaning and real-life modelling.

Learning outcomes: understand and recall key definitions, properties and formulae; solve standard and unfamiliar problems with clear steps; interpret mathematical information from diagrams, tables or real-life contexts; avoid common misconceptions through verification and estimation.

5

Introduction to Euclid's Geometry

Axioms, postulates, definitions, logical statements and the foundation of deductive geometry.

Learning outcomes: understand and recall key definitions, properties and formulae; solve standard and unfamiliar problems with clear steps; interpret mathematical information from diagrams, tables or real-life contexts; avoid common misconceptions through verification and estimation.

6

Lines and Angles

Intersecting lines, linear pairs, vertically opposite angles, parallel lines and transversals.

Learning outcomes: understand and recall key definitions, properties and formulae; solve standard and unfamiliar problems with clear steps; interpret mathematical information from diagrams, tables or real-life contexts; avoid common misconceptions through verification and estimation.

7

Triangles

Congruence, triangle inequality, angle sum property, medians, altitudes and applications.

Learning outcomes: understand and recall key definitions, properties and formulae; solve standard and unfamiliar problems with clear steps; interpret mathematical information from diagrams, tables or real-life contexts; avoid common misconceptions through verification and estimation.

8

Quadrilaterals

Parallelograms, midpoint theorem, properties of rectangles, squares, rhombi and trapezia.

Learning outcomes: understand and recall key definitions, properties and formulae; solve standard and unfamiliar problems with clear steps; interpret mathematical information from diagrams, tables or real-life contexts; avoid common misconceptions through verification and estimation.

9

Areas of Parallelograms and Triangles

Area comparisons, base-height reasoning and figures on the same base and between the same parallels.

Learning outcomes: understand and recall key definitions, properties and formulae; solve standard and unfamiliar problems with clear steps; interpret mathematical information from diagrams, tables or real-life contexts; avoid common misconceptions through verification and estimation.

10

Circles

Chords, arcs, central angles, angles in the same segment, cyclic quadrilaterals and tangent awareness.

Learning outcomes: understand and recall key definitions, properties and formulae; solve standard and unfamiliar problems with clear steps; interpret mathematical information from diagrams, tables or real-life contexts; avoid common misconceptions through verification and estimation.

11

Constructions

Geometrical construction with ruler and compass, perpendicular bisectors, angle bisectors and triangles.

Learning outcomes: understand and recall key definitions, properties and formulae; solve standard and unfamiliar problems with clear steps; interpret mathematical information from diagrams, tables or real-life contexts; avoid common misconceptions through verification and estimation.

12

Heron's Formula

Semi-perimeter, area of triangles from side lengths and area of quadrilaterals by triangulation.

Learning outcomes: understand and recall key definitions, properties and formulae; solve standard and unfamiliar problems with clear steps; interpret mathematical information from diagrams, tables or real-life contexts; avoid common misconceptions through verification and estimation.

13

Surface Areas and Volumes

Mensuration of cube, cuboid, cylinder, cone, sphere and composite solids.

Learning outcomes: understand and recall key definitions, properties and formulae; solve standard and unfamiliar problems with clear steps; interpret mathematical information from diagrams, tables or real-life contexts; avoid common misconceptions through verification and estimation.

14

Statistics

Data collection, tabulation, mean, median, mode, bar graphs and interpretation.

Learning outcomes: understand and recall key definitions, properties and formulae; solve standard and unfamiliar problems with clear steps; interpret mathematical information from diagrams, tables or real-life contexts; avoid common misconceptions through verification and estimation.

15

Probability

Experimental probability, equally likely outcomes and simple probability in daily contexts.

Learning outcomes: understand and recall key definitions, properties and formulae; solve standard and unfamiliar problems with clear steps; interpret mathematical information from diagrams, tables or real-life contexts; avoid common misconceptions through verification and estimation.

Suggested Question Paper Blueprint

Section	Question Range	Focus	Marks Orientation	Skill Level
General	1-30	Concept + calculation	1 mark each	Foundation to intermediate
Reason & Assertion	31-40	Theorem and statement logic	1 mark each	Analytical
Achievers	41-50	Multi-step and Olympiad reasoning	2 marks each	Advanced

Preparation Guidance

- Revise formulas with meaning; do not memorise without understanding units and conditions.
- Practise one mixed chapter set every week so that algebra, geometry and data questions stay connected.
- For geometry, redraw the figure and mark equal sides, parallel lines, known angles and radius/chord relations.
- For statistics and probability, always check the total number of outcomes before choosing the answer.
- For Olympiad practice, verify each result by estimation, substitution or reverse calculation whenever possible.