School Connect Online

SCO INTERNATIONAL MATHS OLYMPIAD

SCO IMO GLOBAL GUIDE

Grade 1-12 online mathematics olympiad pathway for students, schools, teachers and parents globally

Designed as a leading online Maths Olympiad preparation and competition guide, aligned with SCO grade-wise syllabus pathways and global IMO-style mathematical thinking.

- grade-wise syllabus pathway from foundational numeracy to senior mathematical reasoning
- global mathematics olympiad pedagogy: problem solving, proof-thinking, creativity, accuracy and perseverance
- three-cycle SCO online model with multiple exam dates for international school participation

Number Sense	Algebra	Geometry	Logic	Problem Solving
Combinatorics	Functions	Trigonometry	Calculus Readiness	SCO IMO

SCO International Maths Olympiad (SCO IMO)

Global Guide for Grade 1 to Grade 12

A publication-ready guide for schools, teachers, parents and students to understand the SCO IMO online pathway, grade-wise syllabus, global mathematical expectations and preparation roadmap.

Official Branding Note

SCO International Maths Olympiad (SCO IMO) is presented as an independent School Connect Olympiad online mathematics olympiad and preparation pathway. It is benchmarked against the global spirit of the International Mathematical Olympiad while serving a broader Grade 1-12 school audience through age-appropriate online assessment, practice, reporting and progression.

1. Purpose and Global Benchmark

The SCO International Maths Olympiad is designed to make high-quality mathematical thinking accessible to learners across countries. It supports early numeracy, logical reasoning, non-routine problem solving and advanced secondary-school mathematics through a structured online competition pathway for Grade 1 to Grade 12.

The official International Mathematical Olympiad is globally recognised as the world championship mathematics competition for high-school students. Its aims include discovering and challenging mathematically gifted young people, promoting mathematics and encouraging international exchange of school syllabuses and practices. SCO IMO adapts this educational spirit into a wider, online, school-friendly format suitable for younger and senior learners.

Why SCO IMO matters for global schools

- It gives schools a continuous mathematical pathway from Grade 1 numeracy to Grade 12 advanced problem solving.
- It encourages mathematical communication, accuracy, reasoning and self-confidence rather than rote calculation alone.
- It supports international participation through online delivery, multiple cycle windows and clear grade-wise learning goals.
- It helps parents and teachers understand strengths, gaps and future development areas through structured assessment reporting.

2. Global IMO-Style Pedagogy and SCO Online Adaptation

Official IMO-style mathematics is not about a long list of formulas. It is about elegant reasoning, proof, creative attack on unfamiliar problems, and perseverance. SCO IMO translates this into an age-fit learning pathway: young learners build number sense and pattern recognition; middle learners build algebraic and geometric reasoning; senior learners develop proof-thinking, functions, counting, probability and advanced modelling.

For younger grades, the competition should reward concept clarity, visual reasoning and accurate steps. For senior grades, it should progressively introduce Olympiad-style problem architecture: understand the condition, identify invariants or patterns, create a strategy, execute accurately, and justify the conclusion.

3. SCO IMO Three-Cycle Global Exam Model

SCO IMO is conducted under three active cycles in a year: Spring, Summer and Winter. Each cycle supports multiple official online exam dates so that schools and students across countries can select a suitable date while maintaining a consistent academic standard.

Exam Year	Cycle	Cycle Window	Result / Publish Date	Exam Availability
2026	Spring	01 Jan 2026 - 31 Mar 2026	30 Apr 2026	Multiple official online dates
2026	Summer	01 Apr 2026 - 31 Jul 2026	31 Aug 2026	Multiple official online dates
2026	Winter	01 Aug 2026 - 31 Dec 2026	28 Feb 2027	Multiple official online dates
2027	Spring	01 Jan 2027 - 31 Mar 2027	30 Apr 2027	Multiple official online dates
2027	Summer	01 Apr 2027 - 31 Jul 2027	31 Aug 2027	Multiple official online dates
2027	Winter	01 Aug 2027 - 31 Dec 2027	29 Feb 2028	Multiple official online dates

Configured SCO IMO date options from the attached plan data

The attached plan data shows multiple configured online date options for SCO IMO Maths across classes. The date format below is visitor-friendly and suitable for PDF publication.

Exam Year	Cycle	Configured Exam Date Options
2026	Spring	03 Jan 2026, 11 Jan 2026, 24 Jan 2026, 07 Feb 2026, 08 Feb 2026, 28 Feb 2026, 07 Mar 2026, 08 Mar 2026, 28 Mar 2026
2026	Summer	04 Apr 2026, 12 Apr 2026, 25 Apr 2026, 02 May 2026, 10 May 2026, 23 May 2026, 06 Jun 2026, 14 Jun 2026, 27 Jun 2026, 04 Jul 2026, 12 Jul 2026, 25 Jul 2026
2026	Winter	06 Sep 2025, 14 Sep 2025, 27 Sep 2025, 04 Oct 2025, 12 Oct 2025, 25 Oct 2025, 01 Nov 2025, 09 Nov 2025, 22 Nov 2025, 06 Dec 2025, 14 Dec 2025, 27 Dec 2025
2027	Winter	04 Sep 2026, 12 Sep 2026, 20 Sep 2026, 02 Oct 2026, 10 Oct 2026, 18 Oct 2026, 06 Nov 2026, 14 Nov 2026, 15 Nov 2026, 04 Dec 2026, 12 Dec 2026, 20 Dec 2026

4. Recommended SCO IMO Online Exam Structure

Grade Band	Level	Core Focus	Question Style
Grades 1-2	Foundation Numeracy	Numbers, shapes, patterns, measurement, money, time and simple logic.	Visual MCQs, short reasoning, picture-based problem solving.
Grades 3-5	Primary Mathematical Reasoning	Place value, operations, fractions/decimals, geometry, data handling, financial numeracy and logical reasoning.	MCQs with multi-step word problems, diagrams, tables and reasoning distractors.
Grades 6-8	Middle-School Olympiad Bridge	Integers, fractions, algebra, ratios, mensuration, geometry, data, probability and proportional reasoning.	Conceptual MCQs, non-routine problems, pattern-based reasoning and case analysis.
Grades 9-10	Secondary Olympiad Readiness	Number systems, algebra, coordinate geometry, trigonometry, circles, statistics, probability and mensuration.	Higher-order MCQs and numerical reasoning requiring method selection and accuracy.
Grades 11-12	Senior Mathematical Excellence	Sets, functions, trigonometry, sequences, combinatorics, calculus foundations, vectors, matrices, 3D geometry and probability.	Advanced problem solving, proof-style reasoning, modelling and multi-concept questions.

Exam Guidance for Visitors

Exact number of questions, duration and marks may be published separately for each official test. This guide defines the academic pathway and recommended assessment approach for SCO IMO as a global online Maths Olympiad.

5. SCO IMO Skill Progression Map

The syllabus moves from concrete number work to abstract reasoning. Each grade should not only “cover chapters” but also improve mathematical habits: reading carefully, drawing diagrams, testing examples, identifying patterns, checking edge cases and explaining solutions.

Skill Domain	Main Grades	Scope	Pedagogical Value
Number Sense & Arithmetic	Grades 1-6	Counting, place value, operations, fractions, decimals, ratios, estimation and numeric fluency.	Builds speed, accuracy and confidence with numbers before moving into abstraction.
Logical and Analytical Reasoning	Grades 1-12	Patterns, visual reasoning, puzzles, mathematical reasoning, proof-thinking and structured explanation.	Develops the habit of explaining why an answer is true, not only calculating it.
Algebra and Functions	Grades 6-12	Expressions, equations, identities, polynomials, functions, relations, sequences and inequalities.	Forms the main bridge from school mathematics to Olympiad-style problem solving.
Geometry and Measurement	Grades 1-12	Shapes, constructions, congruence, similarity, circles, coordinate geometry, mensuration and 3D geometry.	Builds visualisation, diagram-based reasoning and rigorous spatial thinking.
Combinatorics and Counting	Grades 7-12	Arrangements, selections, pigeonhole-style ideas, counting principles, binomial expansion and probability foundations.	Prepares students for global Olympiad problems requiring casework and creative counting.
Data, Statistics and Probability	Grades 2-12	Graphs, pictographs, data handling, statistics, probability models and interpretation.	Connects school mathematics to evidence-based decision-making and real-life data literacy.
Advanced Mathematical Thinking	Grades 11-12	Sets, functions, trigonometry, calculus foundations, vectors, matrices, determinants and 3D geometry.	Supports senior secondary depth while keeping the Olympiad focus on reasoning and method clarity.

6. Grade-Wise SCO IMO Syllabus, Chapter Notes and Learning Outcomes

The following section converts the official SCO Maths Olympiad grade-wise syllabus into a visitor-friendly guide with chapter notes and learning outcomes. It is useful for schools planning participation, teachers preparing classes, parents understanding expectations, and students preparing systematically.

Class 1 SCO IMO Syllabus

Foundation stage: number recognition, counting, basic operations, shapes, comparison and early logical reasoning.

Chapter No.	Chapter Title	Chapter Note	Key Learning Outcome
1	Shapes and Space	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Use definitions, diagrams and properties to solve geometric problems and justify each step clearly.
2	Addition Two Digits	Strengthens number fluency, operation sense and efficient calculation strategies.	Solve multi-step arithmetic problems, select efficient methods, and verify answers using inverse operations.
3	Subtraction Two Digits	Strengthens number fluency, operation sense and efficient calculation strategies.	Solve multi-step arithmetic problems, select efficient methods, and verify answers using inverse operations.
4	Weights and Comparisons	Builds concept clarity and reasoning skills needed for grade-level Olympiad preparation.	Understand the core concept, solve related problems and explain mathematical reasoning in a clear way.
5	Money - (Puts together small amounts of money)	Connects mathematics with daily-life quantitative reasoning and financial numeracy.	Apply percentage, ratio and financial reasoning to practical and Olympiad-style word problems.
6	Lines and Plane Shapes	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Use definitions, diagrams and properties to solve geometric problems and justify each step clearly.
7	Introduction of Time	Connects mathematics with daily-life quantitative reasoning and financial numeracy.	Understand the core concept, solve related problems and explain mathematical reasoning in a clear way.
8	Logical and Analytical Reasoning	Encourages puzzle-solving, pattern recognition and creative mathematical exploration.	Understand the core concept, solve related problems and explain mathematical reasoning in a clear way.

Class 2 SCO IMO Syllabus

Foundation stage: number recognition, counting, basic operations, shapes, comparison and early logical reasoning.

Chapter No.	Chapter Title	Chapter Note	Key Learning Outcome
1	Addition and Subtraction	Strengthens number fluency, operation sense and efficient calculation strategies.	Solve multi-step arithmetic problems, select efficient methods, and verify answers using inverse operations.
2	Multiplication	Strengthens number fluency, operation sense and efficient calculation strategies.	Solve multi-step arithmetic problems, select efficient methods, and verify answers using inverse operations.
3	Division	Strengthens number fluency, operation sense and efficient calculation strategies.	Solve multi-step arithmetic problems, select efficient methods, and verify answers using inverse operations.
4	Number Comparison	Strengthens number fluency, operation sense and efficient calculation strategies.	Represent, compare and operate with numbers accurately; apply number properties in unfamiliar problems.
5	Length	Builds concept clarity and reasoning skills needed for grade-level Olympiad preparation.	Understand the core concept, solve related problems and explain mathematical reasoning in a clear way.
6	Weight and Capacity	Builds concept clarity and reasoning skills needed for grade-level Olympiad preparation.	Understand the core concept, solve related problems and explain mathematical reasoning in a clear way.
7	Time and Money	Connects mathematics with daily-life quantitative reasoning and financial numeracy.	Apply percentage, ratio and financial reasoning to practical and Olympiad-style word problems.
8	Lines	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Use definitions, diagrams and properties to solve geometric problems and justify each step clearly.
9	Shapes and Solids	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Use definitions, diagrams and properties to solve geometric problems and justify each step clearly.
10	Pictographs	Introduces data interpretation, chance reasoning and evidence-based mathematical communication.	Read, organise and interpret data; reason about probability and communicate conclusions from evidence.
11	Logical Reasoning	Encourages puzzle-solving, pattern recognition and creative mathematical exploration.	Understand the core concept, solve related problems and explain mathematical reasoning in a clear way.

Class 3 SCO IMO Syllabus

Primary stage: arithmetic fluency, geometry, measurement, data interpretation and practical problem solving.

Chapter No.	Chapter Title	Chapter Note	Key Learning Outcome
1	Number Sense	Strengthens number fluency, operation sense and efficient calculation strategies.	Represent, compare and operate with numbers accurately; apply number properties in unfamiliar problems.
2	Calendar and Time	Connects mathematics with daily-life quantitative reasoning and financial numeracy.	Understand the core concept, solve related problems and explain mathematical reasoning in a clear way.
3	Money	Connects mathematics with daily-life quantitative reasoning and financial numeracy.	Apply percentage, ratio and financial reasoning to practical and Olympiad-style word problems.
4	Length	Builds concept clarity and reasoning skills needed for grade-level Olympiad preparation.	Understand the core concept, solve related problems and explain mathematical reasoning in a clear way.
5	Weight	Builds concept clarity and reasoning skills needed for grade-level Olympiad preparation.	Understand the core concept, solve related problems and explain mathematical reasoning in a clear way.
6	Capacity	Builds concept clarity and reasoning skills needed for grade-level Olympiad preparation.	Understand the core concept, solve related problems and explain mathematical reasoning in a clear way.
7	Geometry	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Use definitions, diagrams and properties to solve geometric problems and justify each step clearly.
8	Addition, Subtraction, Multiplication, Division	Strengthens number fluency, operation sense and efficient calculation strategies.	Solve multi-step arithmetic problems, select efficient methods, and verify answers using inverse operations.

Class 4 SCO IMO Syllabus

Primary stage: arithmetic fluency, geometry, measurement, data interpretation and practical problem solving.

Chapter No.	Chapter Title	Chapter Note	Key Learning Outcome
1	Number System	Strengthens number fluency, operation sense and efficient calculation strategies.	Represent, compare and operate with numbers accurately; apply number properties in unfamiliar problems.
2	Roman Numerals	Builds concept clarity and reasoning skills needed for grade-level Olympiad preparation.	Understand the core concept, solve related problems and explain mathematical reasoning in a clear way.
3	Factors and multiples	Builds concept clarity and reasoning skills needed for grade-level Olympiad preparation.	Understand the core concept, solve related problems and explain mathematical reasoning in a clear way.
4	Geometrical Concepts	Builds concept clarity and reasoning skills needed for grade-level Olympiad preparation.	Understand the core concept, solve related problems and explain mathematical reasoning in a clear way.
5	Area and Perimeter of Geometrical Figures	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Calculate measures accurately, choose correct formulae and connect measurement to real-world modelling.
6	Graphical Representation of Data	Introduces data interpretation, chance reasoning and evidence-based mathematical communication.	Read, organise and interpret data; reason about probability and communicate conclusions from evidence.
7	Addition and Subtraction of Decimal Numbers	Strengthens number fluency, operation sense and efficient calculation strategies.	Solve multi-step arithmetic problems, select efficient methods, and verify answers using inverse operations.

Class 5 SCO IMO Syllabus

Primary stage: arithmetic fluency, geometry, measurement, data interpretation and practical problem solving.

Chapter No.	Chapter Title	Chapter Note	Key Learning Outcome
2	Number Systems	Strengthens number fluency, operation sense and efficient calculation strategies.	Represent, compare and operate with numbers accurately; apply number properties in unfamiliar problems.
3	Addition and Subtraction of Decimal Numbers	Strengthens number fluency, operation sense and efficient calculation strategies.	Solve multi-step arithmetic problems, select efficient methods, and verify answers using inverse operations.
4	Multiplication and Division of Decimal Numbers	Strengthens number fluency, operation sense and efficient calculation strategies.	Solve multi-step arithmetic problems, select efficient methods, and verify answers using inverse operations.
5	Area and Perimeter of Geometrical Figures	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Calculate measures accurately, choose correct formulae and connect measurement to real-world modelling.
6	Profit and Loss	Connects mathematics with daily-life quantitative reasoning and financial numeracy.	Apply percentage, ratio and financial reasoning to practical and Olympiad-style word problems.
7	Introduction of Data handling	Introduces data interpretation, chance reasoning and evidence-based mathematical communication.	Read, organise and interpret data; reason about probability and communicate conclusions from evidence.

Chapter No.	Chapter Title	Chapter Note	Key Learning Outcome
8	Simple Interest	Connects mathematics with daily-life quantitative reasoning and financial numeracy.	Apply percentage, ratio and financial reasoning to practical and Olympiad-style word problems.
9	Logical and Analytical Reasoning	Encourages puzzle-solving, pattern recognition and creative mathematical exploration.	Understand the core concept, solve related problems and explain mathematical reasoning in a clear way.

Class 6 SCO IMO Syllabus

Middle stage: algebraic thinking, proportional reasoning, geometry, mensuration, data handling and non-routine problems.

Chapter No.	Chapter Title	Chapter Note	Key Learning Outcome
1	Knowing our Numbers	Strengthens number fluency, operation sense and efficient calculation strategies.	Represent, compare and operate with numbers accurately; apply number properties in unfamiliar problems.
2	Whole Numbers	Strengthens number fluency, operation sense and efficient calculation strategies.	Represent, compare and operate with numbers accurately; apply number properties in unfamiliar problems.
3	Playing with Numbers	Strengthens number fluency, operation sense and efficient calculation strategies.	Represent, compare and operate with numbers accurately; apply number properties in unfamiliar problems.
4	Basic Geometrical Ideas	Builds concept clarity and reasoning skills needed for grade-level Olympiad preparation.	Understand the core concept, solve related problems and explain mathematical reasoning in a clear way.
5	Understanding Elementary Shapes	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Use definitions, diagrams and properties to solve geometric problems and justify each step clearly.
6	Integers	Strengthens number fluency, operation sense and efficient calculation strategies.	Represent, compare and operate with numbers accurately; apply number properties in unfamiliar problems.
7	Fractions	Strengthens number fluency, operation sense and efficient calculation strategies.	Represent, compare and operate with numbers accurately; apply number properties in unfamiliar problems.
8	Decimals	Strengthens number fluency, operation sense and efficient calculation strategies.	Represent, compare and operate with numbers accurately; apply number properties in unfamiliar problems.
9	Data Handling	Introduces data interpretation, chance reasoning and evidence-based mathematical communication.	Read, organise and interpret data; reason about probability and communicate conclusions from evidence.
10	Mensuration	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Calculate measures accurately, choose correct formulae and connect measurement to real-world modelling.
11	Algebra	Builds symbolic thinking, pattern generalisation and solution modelling.	Translate patterns into symbols, manipulate expressions, solve equations and interpret mathematical relationships.
12	Ratio And Proportion	Connects mathematics with daily-life quantitative reasoning and financial numeracy.	Apply percentage, ratio and financial reasoning to practical and Olympiad-style word problems.
13	Symmetry	Encourages puzzle-solving, pattern recognition and creative mathematical exploration.	Understand the core concept, solve related problems and explain mathematical reasoning in a clear way.
14	Practical Geometry	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Use definitions, diagrams and properties to solve geometric problems and justify each step clearly.

Class 7 SCO IMO Syllabus

Middle stage: algebraic thinking, proportional reasoning, geometry, mensuration, data handling and non-routine problems.

Chapter No.	Chapter Title	Chapter Note	Key Learning Outcome
1	Integers	Strengthens number fluency, operation sense and efficient calculation strategies.	Represent, compare and operate with numbers accurately; apply number properties in unfamiliar problems.
2	Fractions and Decimals	Strengthens number fluency, operation sense and efficient calculation strategies.	Represent, compare and operate with numbers accurately; apply number properties in unfamiliar problems.
3	Data Handling	Introduces data interpretation, chance reasoning and evidence-based mathematical communication.	Read, organise and interpret data; reason about probability and communicate conclusions from evidence.
4	Simple Equations	Builds symbolic thinking, pattern generalisation and solution modelling.	Translate patterns into symbols, manipulate expressions, solve equations and interpret mathematical relationships.
5	Lines and Angles	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Use definitions, diagrams and properties to solve geometric problems and justify each step clearly.
6	The Triangle and its Properties	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Use definitions, diagrams and properties to solve geometric problems and justify each step clearly.

Chapter No.	Chapter Title	Chapter Note	Key Learning Outcome
7	Congruence of Triangles	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Use definitions, diagrams and properties to solve geometric problems and justify each step clearly.
8	Comparing Quantities	Connects mathematics with daily-life quantitative reasoning and financial numeracy.	Apply percentage, ratio and financial reasoning to practical and Olympiad-style word problems.
9	Rational Numbers	Strengthens number fluency, operation sense and efficient calculation strategies.	Represent, compare and operate with numbers accurately; apply number properties in unfamiliar problems.
10	Practical Geometry	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Use definitions, diagrams and properties to solve geometric problems and justify each step clearly.
11	Perimeter and Area	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Calculate measures accurately, choose correct formulae and connect measurement to real-world modelling.
12	Algebraic Expressions	Builds symbolic thinking, pattern generalisation and solution modelling.	Translate patterns into symbols, manipulate expressions, solve equations and interpret mathematical relationships.
13	Exponents and Powers	Builds concept clarity and reasoning skills needed for grade-level Olympiad preparation.	Understand the core concept, solve related problems and explain mathematical reasoning in a clear way.
14	Symmetry	Encourages puzzle-solving, pattern recognition and creative mathematical exploration.	Understand the core concept, solve related problems and explain mathematical reasoning in a clear way.
15	Visualising Solid Shapes	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Use definitions, diagrams and properties to solve geometric problems and justify each step clearly.

Class 8 SCO IMO Syllabus

Middle stage: algebraic thinking, proportional reasoning, geometry, mensuration, data handling and non-routine problems.

Chapter No.	Chapter Title	Chapter Note	Key Learning Outcome
1	Rational Numbers	Strengthens number fluency, operation sense and efficient calculation strategies.	Represent, compare and operate with numbers accurately; apply number properties in unfamiliar problems.
2	Linear Equation in One Variables	Builds symbolic thinking, pattern generalisation and solution modelling.	Translate patterns into symbols, manipulate expressions, solve equations and interpret mathematical relationships.
3	Understanding Quadrilaterals	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Use definitions, diagrams and properties to solve geometric problems and justify each step clearly.
4	Practical Geometry	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Use definitions, diagrams and properties to solve geometric problems and justify each step clearly.
5	Data Handling	Introduces data interpretation, chance reasoning and evidence-based mathematical communication.	Read, organise and interpret data; reason about probability and communicate conclusions from evidence.
6	Squares and Square Roots	Builds concept clarity and reasoning skills needed for grade-level Olympiad preparation.	Understand the core concept, solve related problems and explain mathematical reasoning in a clear way.
7	Cube and Cube Roots	Builds concept clarity and reasoning skills needed for grade-level Olympiad preparation.	Understand the core concept, solve related problems and explain mathematical reasoning in a clear way.
8	Comparing Quantities	Connects mathematics with daily-life quantitative reasoning and financial numeracy.	Apply percentage, ratio and financial reasoning to practical and Olympiad-style word problems.
9	Algebraic Expression and Identities	Builds symbolic thinking, pattern generalisation and solution modelling.	Translate patterns into symbols, manipulate expressions, solve equations and interpret mathematical relationships.
10	Visualising Solid Shapes	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Use definitions, diagrams and properties to solve geometric problems and justify each step clearly.
11	Mensuration	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Calculate measures accurately, choose correct formulae and connect measurement to real-world modelling.
12	Exponents and Powers	Builds concept clarity and reasoning skills needed for grade-level Olympiad preparation.	Understand the core concept, solve related problems and explain mathematical reasoning in a clear way.
13	Direct and Inverse Proportions	Connects mathematics with daily-life quantitative reasoning and financial numeracy.	Apply percentage, ratio and financial reasoning to practical and Olympiad-style word problems.
14	Factorisation	Builds symbolic thinking, pattern generalisation and solution modelling.	Translate patterns into symbols, manipulate expressions, solve equations and interpret mathematical relationships.
15	Introduction of Graphs	Introduces data interpretation, chance reasoning and evidence-based mathematical communication.	Read, organise and interpret data; reason about probability and communicate conclusions from evidence.
16	Playing with Numbers	Strengthens number fluency, operation sense and efficient calculation strategies.	Represent, compare and operate with numbers accurately; apply number properties in unfamiliar problems.

Class 9 SCO IMO Syllabus

Secondary stage: formal algebra, geometry, coordinate methods, trigonometry, statistics and probability.

Chapter No.	Chapter Title	Chapter Note	Key Learning Outcome
1	Number System	Strengthens number fluency, operation sense and efficient calculation strategies.	Represent, compare and operate with numbers accurately; apply number properties in unfamiliar problems.
2	Polynomials	Builds symbolic thinking, pattern generalisation and solution modelling.	Translate patterns into symbols, manipulate expressions, solve equations and interpret mathematical relationships.
3	Coordinate Geometry	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Use definitions, diagrams and properties to solve geometric problems and justify each step clearly.
4	Linear Equations In two variables	Builds symbolic thinking, pattern generalisation and solution modelling.	Translate patterns into symbols, manipulate expressions, solve equations and interpret mathematical relationships.
5	Introduction to Euclids Geometry	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Use definitions, diagrams and properties to solve geometric problems and justify each step clearly.
6	Lines and Angles	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Use definitions, diagrams and properties to solve geometric problems and justify each step clearly.
7	Triangles	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Use definitions, diagrams and properties to solve geometric problems and justify each step clearly.
8	Quadrilaterals	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Use definitions, diagrams and properties to solve geometric problems and justify each step clearly.
9	Areas of Parallelograms and Triangles	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Use definitions, diagrams and properties to solve geometric problems and justify each step clearly.
10	Circles	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Use definitions, diagrams and properties to solve geometric problems and justify each step clearly.
11	Constructions	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Use definitions, diagrams and properties to solve geometric problems and justify each step clearly.
12	Herons Formula	Builds concept clarity and reasoning skills needed for grade-level Olympiad preparation.	Calculate measures accurately, choose correct formulae and connect measurement to real-world modelling.
13	Surface areas and Volumes	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Calculate measures accurately, choose correct formulae and connect measurement to real-world modelling.
14	Statistics	Introduces data interpretation, chance reasoning and evidence-based mathematical communication.	Read, organise and interpret data; reason about probability and communicate conclusions from evidence.
15	Probability	Introduces data interpretation, chance reasoning and evidence-based mathematical communication.	Read, organise and interpret data; reason about probability and communicate conclusions from evidence.

Class 10 SCO IMO Syllabus

Secondary stage: formal algebra, geometry, coordinate methods, trigonometry, statistics and probability.

Chapter No.	Chapter Title	Chapter Note	Key Learning Outcome
1	Real Numbers	Strengthens number fluency, operation sense and efficient calculation strategies.	Represent, compare and operate with numbers accurately; apply number properties in unfamiliar problems.
2	Polynomials	Builds symbolic thinking, pattern generalisation and solution modelling.	Translate patterns into symbols, manipulate expressions, solve equations and interpret mathematical relationships.
3	Pair of Linear Equations in two variables	Builds symbolic thinking, pattern generalisation and solution modelling.	Translate patterns into symbols, manipulate expressions, solve equations and interpret mathematical relationships.
4	Quadratic Equations	Builds symbolic thinking, pattern generalisation and solution modelling.	Translate patterns into symbols, manipulate expressions, solve equations and interpret mathematical relationships.
5	Arithmetic Progression	Builds concept clarity and reasoning skills needed for grade-level Olympiad preparation.	Understand the core concept, solve related problems and explain mathematical reasoning in a clear way.
6	Triangles	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Use definitions, diagrams and properties to solve geometric problems and justify each step clearly.
7	Coordinate Geometry	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Use definitions, diagrams and properties to solve geometric problems and justify each step clearly.
8	Introduction to Trigonometry	Extends senior mathematical reasoning through functions, rates of change and advanced modelling.	Apply advanced concepts to model change, optimise quantities and solve structured senior-level problems.
9	Some Applications of Trigonometry	Extends senior mathematical reasoning through functions, rates of change and advanced modelling.	Apply advanced concepts to model change, optimise quantities and solve structured senior-level problems.
10	Circles	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Use definitions, diagrams and properties to solve geometric problems and justify each step clearly.
11	Constructions	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Use definitions, diagrams and properties to solve geometric problems and justify each step clearly.

Chapter No.	Chapter Title	Chapter Note	Key Learning Outcome
12	Areas Related to circles	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Use definitions, diagrams and properties to solve geometric problems and justify each step clearly.
13	Surface Areas and Volumes	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Calculate measures accurately, choose correct formulae and connect measurement to real-world modelling.
14	Statistics	Introduces data interpretation, chance reasoning and evidence-based mathematical communication.	Read, organise and interpret data; reason about probability and communicate conclusions from evidence.
15	Probability	Introduces data interpretation, chance reasoning and evidence-based mathematical communication.	Read, organise and interpret data; reason about probability and communicate conclusions from evidence.

Class 11 SCO IMO Syllabus

Senior stage: functions, proof-oriented reasoning, combinatorics, calculus foundations, vectors, matrices and advanced modelling.

Chapter No.	Chapter Title	Chapter Note	Key Learning Outcome
1	Sets	Builds symbolic thinking, pattern generalisation and solution modelling.	Translate patterns into symbols, manipulate expressions, solve equations and interpret mathematical relationships.
2	Relation and Functions	Builds symbolic thinking, pattern generalisation and solution modelling.	Translate patterns into symbols, manipulate expressions, solve equations and interpret mathematical relationships.
3	Trigonometric Functions	Builds symbolic thinking, pattern generalisation and solution modelling.	Translate patterns into symbols, manipulate expressions, solve equations and interpret mathematical relationships.
4	Principle of Mathematical Induction	Builds structured counting, pattern proof and recursive mathematical thinking.	Use counting principles, recurrence ideas and proof strategies to solve non-routine mathematical problems.
5	Complex Numbers and Quadratic Equations	Strengthens number fluency, operation sense and efficient calculation strategies.	Represent, compare and operate with numbers accurately; apply number properties in unfamiliar problems.
6	Linear Inequalities	Builds symbolic thinking, pattern generalisation and solution modelling.	Translate patterns into symbols, manipulate expressions, solve equations and interpret mathematical relationships.
7	Permutations and Combinations	Builds structured counting, pattern proof and recursive mathematical thinking.	Use counting principles, recurrence ideas and proof strategies to solve non-routine mathematical problems.
8	Binomials	Builds structured counting, pattern proof and recursive mathematical thinking.	Use counting principles, recurrence ideas and proof strategies to solve non-routine mathematical problems.
9	Sequences and Series	Builds structured counting, pattern proof and recursive mathematical thinking.	Use counting principles, recurrence ideas and proof strategies to solve non-routine mathematical problems.
10	Straight Lines	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Use definitions, diagrams and properties to solve geometric problems and justify each step clearly.
11	Conic Sections	Builds concept clarity and reasoning skills needed for grade-level Olympiad preparation.	Understand the core concept, solve related problems and explain mathematical reasoning in a clear way.
12	Introduction to three dimensional geometry	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Use definitions, diagrams and properties to solve geometric problems and justify each step clearly.
13	Limits and Derivatives	Extends senior mathematical reasoning through functions, rates of change and advanced modelling.	Apply advanced concepts to model change, optimise quantities and solve structured senior-level problems.
14	Mathematical Reasonings	Encourages puzzle-solving, pattern recognition and creative mathematical exploration.	Understand the core concept, solve related problems and explain mathematical reasoning in a clear way.
15	Statistics	Introduces data interpretation, chance reasoning and evidence-based mathematical communication.	Read, organise and interpret data; reason about probability and communicate conclusions from evidence.
16	Probability	Introduces data interpretation, chance reasoning and evidence-based mathematical communication.	Read, organise and interpret data; reason about probability and communicate conclusions from evidence.
17	Basic Mathematics	Builds concept clarity and reasoning skills needed for grade-level Olympiad preparation.	Understand the core concept, solve related problems and explain mathematical reasoning in a clear way.

Class 12 SCO IMO Syllabus

Senior stage: functions, proof-oriented reasoning, combinatorics, calculus foundations, vectors, matrices and advanced modelling.

Chapter No.	Chapter Title	Chapter Note	Key Learning Outcome
1	Relation and Functions	Builds symbolic thinking, pattern generalisation and solution modelling.	Translate patterns into symbols, manipulate expressions, solve equations and interpret mathematical relationships.
2	Inverse Trigonometric Function	Builds concept clarity and reasoning skills needed for grade-level Olympiad preparation.	Translate patterns into symbols, manipulate expressions, solve equations and interpret mathematical relationships.
3	Matrices	Builds symbolic thinking, pattern generalisation and solution modelling.	Translate patterns into symbols, manipulate expressions, solve equations and interpret mathematical relationships.
4	Determinants	Builds symbolic thinking, pattern generalisation and solution modelling.	Translate patterns into symbols, manipulate expressions, solve equations and interpret mathematical relationships.
5	Continuity and Differentiability	Extends senior mathematical reasoning through functions, rates of change and advanced modelling.	Apply advanced concepts to model change, optimise quantities and solve structured senior-level problems.
6	Application of Derivatives	Extends senior mathematical reasoning through functions, rates of change and advanced modelling.	Apply advanced concepts to model change, optimise quantities and solve structured senior-level problems.
7	Integral	Extends senior mathematical reasoning through functions, rates of change and advanced modelling.	Apply advanced concepts to model change, optimise quantities and solve structured senior-level problems.
8	Application of Integrals	Extends senior mathematical reasoning through functions, rates of change and advanced modelling.	Apply advanced concepts to model change, optimise quantities and solve structured senior-level problems.
9	Differential Equations	Builds symbolic thinking, pattern generalisation and solution modelling.	Translate patterns into symbols, manipulate expressions, solve equations and interpret mathematical relationships.
10	Vector Algebra	Builds symbolic thinking, pattern generalisation and solution modelling.	Translate patterns into symbols, manipulate expressions, solve equations and interpret mathematical relationships.
11	Three Dimensional Geometry	Develops diagram reading, spatial reasoning, geometric properties and visual proof habits.	Use definitions, diagrams and properties to solve geometric problems and justify each step clearly.
12	Linear Programming	Builds symbolic thinking, pattern generalisation and solution modelling.	Translate patterns into symbols, manipulate expressions, solve equations and interpret mathematical relationships.
13	Probability	Introduces data interpretation, chance reasoning and evidence-based mathematical communication.	Read, organise and interpret data; reason about probability and communicate conclusions from evidence.

7. Preparation Roadmap for Students

Preparation Stage	What Students Should Do
Step 1: Learn the concept	Read the chapter, understand definitions, properties, formulas and examples.
Step 2: Practise standard problems	Solve class-level exercises to build fluency and accuracy.
Step 3: Move to Olympiad questions	Attempt non-routine problems with diagrams, patterns and multi-step reasoning.
Step 4: Review mistakes	Classify errors as concept gaps, reading errors, calculation mistakes or strategy issues.
Step 5: Explain the method	Write or speak the reasoning clearly; proof-thinking begins with explanation.
Step 6: Simulate online tests	Practise under timed online conditions and review question analytics after each attempt.

8. Guidance for Teachers, Parents and Schools

For teachers

- Use the syllabus to create a grade-wise weekly preparation calendar.
- Teach multiple strategies for a problem: arithmetic, visual, algebraic and logical approaches where appropriate.
- Ask students to explain why an answer is correct; explanation builds Olympiad confidence.
- Use mistakes as diagnostic data for reteaching and grouped practice.

For parents

- Encourage steady practice rather than last-minute memorisation.
- Focus on reasoning, confidence and curiosity, not only score comparison.
- Review reports with the child and celebrate improvement in accuracy, speed and problem-solving approach.

For schools

- Schedule participation within Spring, Summer or Winter cycles depending on the academic calendar.
- Use SCO IMO as an enrichment pathway for mathematics clubs, gifted learners and whole-class skill development.
- Use results to identify class-level strengths, topic gaps and enrichment needs across grades.

9. Online Integrity and Fair Competition Expectations

A global online Maths Olympiad must protect fairness. SCO IMO should maintain clear identity checks, time control, question security, device and browser instructions, and honest participation rules. Students should attempt the exam independently without external help, calculators or communication tools unless explicitly permitted in the official test instructions.

- Students must follow the official test window, login rules and exam instructions.
- Schools and parents should support a quiet, supervised and distraction-free exam environment.
- SCO may use online monitoring, activity logs and result review rules to protect academic integrity.
- Any suspicious attempt, impersonation or unfair assistance can lead to review, score hold, penalty or disqualification according to SCO policy.

10. Future-Ready Benefits of SCO IMO

Benefit Area	Value for Learners and Schools
Academic growth	Improves accuracy, logic, problem-solving stamina and conceptual clarity.
Global readiness	Introduces learners to international mathematical expectations in an accessible online format.
Career foundation	Builds skills useful for STEM, coding, AI, finance, engineering, data science and research.
School improvement	Helps schools identify mathematical talent and topic-level improvement needs.
Parent insight	Gives families a clear view of strengths, gaps and next preparation steps.

11. Research and Alignment References

This guide is benchmarked against official International Mathematical Olympiad information and regulations, while adapting the spirit of global Olympiad mathematics to an independent online SCO Grade 1-12 pathway.

Reference	How it informs SCO IMO
International Mathematical Olympiad official site	Describes the IMO as the world championship mathematics competition for high-school students, held annually in different countries and expanded to over 100 countries.
IMO General Regulations	States the aims of discovering, encouraging and challenging mathematically gifted young people; promoting mathematics; and encouraging international exchange of school syllabuses and practices.
IMO General Regulations - contest format	The official contest takes place over two consecutive days, with 4.5 hours each day and three problems per paper. SCO IMO adapts the spirit of rigorous problem solving for a broader online school audience.
IMO official problem archive	Provides historic IMO problem papers and shortlists, supporting the importance of high-quality non-routine problem solving and mathematical creativity.

Important independence note

SCO International Maths Olympiad (SCO IMO) should be presented as an independent School Connect Olympiad programme. It is benchmarked against global Maths Olympiad expectations, but it should not be described as the official International Mathematical Olympiad unless a formal official affiliation exists.