

SCO INTERNATIONAL MATHS OLYMPIAD

SCO IMO COMPILED SYLLABUS

Grade 1 to Grade 12 global mathematics syllabus, chapter notes, and learning outcomes

Designed from the official SCO Maths Olympiad syllabus pathway and aligned with global Mathematical Olympiad pedagogy.

- Grade-wise chapter map from foundation numeracy to advanced secondary mathematics
- Global IMO-style enrichment through reasoning, proof, problem solving, algebra, geometry, number theory, and combinatorics
- Built for students, teachers, parents, and schools participating through SCO online exam cycles

Maths	Number Sense	Algebra	Geometry	Data & Probability
Number Theory	Combinatorics	Proof Skills	Graphs	Problem Solving

SCO International Maths Olympiad (SCO IMO)

Compiled Syllabus & Learning Outcomes | Grade 1 to Grade 12

This publication-ready syllabus document converts the official SCO Maths Olympiad chapter pathway into a globally readable curriculum map. It is designed for website upload, PDF conversion, school circulation, teacher planning, parent guidance and student preparation.

SCO IMO follows the SCO Olympiad online model with three annual cycles and multiple exam dates, while the syllabus remains grade-wise and stable so learners can prepare progressively across the academic year.

1. Global Mathematics Olympiad Alignment

The International Mathematical Olympiad (IMO) is globally recognised as the world championship mathematics competition for high-school students. Its educational spirit emphasizes mathematical challenge, international exchange of school syllabuses and practices, and the promotion of mathematics worldwide.

For senior preparation, global Mathematical Olympiad pathways commonly emphasize pre-university mathematics with major problem areas such as algebra, combinatorics, geometry and number theory. SCO IMO adapts this spirit to Grade 1-12 by building a continuous bridge from foundational numeracy to advanced reasoning.

How SCO IMO brings global Olympiad pedagogy online

- Concept-first learning: every chapter is linked to a clear skill and learning outcome rather than only formula memorisation.
- Reasoning-first assessment: students are encouraged to explain patterns, justify steps and apply concepts in unfamiliar situations.
- Grade-wise progression: early grades build number fluency and visual reasoning; middle grades build algebraic and geometric thinking; senior grades build abstract problem solving.
- Online accessibility: the three-cycle model and multiple dates allow international schools and families to participate without waiting for one fixed global date.
- Future readiness: the syllabus supports STEM pathways, mathematical confidence, analytics-based feedback and long-term academic enrichment.

2. SCO IMO Three-Cycle Exam Model

The following cycle view is included for clarity because SCO IMO is conducted across Spring, Summer and Winter cycles. Schools may guide students to select a suitable cycle while following the same grade-wise syllabus framework.

Exam Year	Cycle	International Round / Cycle Window	Result / Publish Date	Exam Availability
2026	Spring	01 Jan 2026 - 31 Mar 2026	30 Apr 2026	Multiple configured exam dates within the cycle
2026	Summer	01 Apr 2026 - 31 Jul 2026	31 Aug 2026	Multiple configured exam dates within the cycle
2026	Winter	01 Aug 2026 - 31 Dec 2026	28 Feb 2027	Multiple configured exam dates within the cycle
2027	Spring	01 Jan 2027 - 31 Mar 2027	30 Apr 2027	Multiple configured exam dates within the cycle
2027	Summer	01 Apr 2027 - 31 Jul 2027	31 Aug 2027	Multiple configured exam dates within the cycle
2027	Winter	01 Aug 2027 - 31 Dec 2027	29 Feb 2028	Multiple configured exam dates within the cycle

Date format used throughout this document: DD Mon YYYY, for example 03 Jan 2026.

3. Syllabus Architecture for Grade 1 to Grade 12

Grade Band	Mathematical Stage	Core Coverage	Pedagogical Goal
Grades 1-2	Foundation Numeracy	Numbers, shapes, comparison, time, money, measurement, pictorial data and early logic.	Build comfort with numbers and mathematical language.
Grades 3-5	Primary Mathematical Fluency	Place value, operations, geometry, measurement, money, data, decimals and reasoning.	Move from concrete examples to multi-step problems.
Grades 6-8	Middle School Reasoning	Fractions, integers, rational numbers, algebra, geometry, mensuration, graphs and proportion.	Develop symbolic, spatial and proportional reasoning.
Grades 9-10	Secondary Problem Solving	Number systems, polynomials, equations, geometry, trigonometry, statistics and probability.	Prepare for formal mathematical proof and exam-level problem solving.
Grades 11-12	Senior Secondary / Olympiad Bridge	Functions, combinatorics, complex numbers, conics, calculus, vectors, matrices, probability and 3D geometry.	Build advanced modeling, abstraction and strategic reasoning.

Global IMO-style enrichment should be embedded especially from Grades 8-12 through proof, number theory, geometry, algebraic identities, inequalities, combinatorics and problem-solving discussions.

4. Grade-Wise SCO IMO Syllabus with Chapter Notes and Learning Outcomes

The following syllabus tables use the official SCO Maths Olympiad grade-wise chapters and add concise chapter notes with learner-friendly outcomes for schools, teachers, parents and students.

Class 1 SCO IMO Syllabus

Foundation numeracy: visual mathematics, number recognition, counting, shapes, simple operations and early logical reasoning.

Chapter No.	Chapter Title	Chapterwise Note	Key Learning Outcome
1	Shapes and Space	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.
2	Addition Two Digits	Strengthens core arithmetic through mental, written and problem-based methods.	Students solve multi-step arithmetic problems with speed, accuracy and clear reasoning.
3	Subtraction Two Digits	Strengthens core arithmetic through mental, written and problem-based methods.	Students solve multi-step arithmetic problems with speed, accuracy and clear reasoning.
4	Weights and Comparisons	Develops measurement sense using units, comparison and estimation.	Students select suitable units, compare measures and solve practical measurement questions.
5	Money - (Puts together small amounts of money)	Connects mathematics with financial reasoning, value comparison and everyday decision-making.	Students solve money, percentage and simple financial problems using logical steps.
6	Lines and Plane Shapes	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.

Chapter No.	Chapter Title	Chapterwise Note	Key Learning Outcome
7	Introduction of Time	Develops measurement of time, sequencing and interpretation of real-life schedules.	Students read time/calendar data and solve duration or sequencing problems.
8	Logical and Analytical Reasoning	Strengthens logic, pattern recognition, deduction and proof-readiness.	Students analyze statements, identify relationships and explain why a conclusion follows.

Class 2 SCO IMO Syllabus

Foundation numeracy: arithmetic operations, comparison, measurement, shapes, pictorial data and logical reasoning.

Chapter No.	Chapter Title	Chapterwise Note	Key Learning Outcome
1	Addition and Subtraction	Strengthens core arithmetic through mental, written and problem-based methods.	Students solve multi-step arithmetic problems with speed, accuracy and clear reasoning.
2	Multiplication	Strengthens core arithmetic through mental, written and problem-based methods.	Students solve multi-step arithmetic problems with speed, accuracy and clear reasoning.
3	Division	Strengthens core arithmetic through mental, written and problem-based methods.	Students solve multi-step arithmetic problems with speed, accuracy and clear reasoning.
4	Number Comparison	Builds number sense, operation fluency and flexible use of numerical representations.	Students calculate accurately, compare quantities, recognize patterns and justify numerical choices.
5	Length	Develops measurement sense using units, comparison and estimation.	Students select suitable units, compare measures and solve practical measurement questions.
6	Weight and Capacity	Develops measurement sense using units, comparison and estimation.	Students select suitable units, compare measures and solve practical measurement questions.
7	Time and Money	Connects mathematics with financial reasoning, value comparison and everyday decision-making.	Students solve money, percentage and simple financial problems using logical steps.
8	Lines	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.
9	Shapes and Solids	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.
10	Pictographs	Develops data interpretation, chance reasoning and evidence-based problem solving.	Students read tables/graphs, analyze patterns and apply probability or optimization ideas.
11	Logical Reasoning	Strengthens logic, pattern recognition, deduction and proof-readiness.	Students analyze statements, identify relationships and explain why a conclusion follows.

Class 3 SCO IMO Syllabus

Primary progression: number sense, time, money, measurement, geometry, data and arithmetic fluency.

Chapter No.	Chapter Title	Chapterwise Note	Key Learning Outcome
1	Number Sense	Builds number sense, operation fluency and flexible use of numerical representations.	Students calculate accurately, compare quantities, recognize patterns and justify numerical choices.
2	Calendar and Time	Develops measurement of time, sequencing and interpretation of real-life schedules.	Students read time/calendar data and solve duration or sequencing problems.

Chapter No.	Chapter Title	Chapterwise Note	Key Learning Outcome
3	Money	Connects mathematics with financial reasoning, value comparison and everyday decision-making.	Students solve money, percentage and simple financial problems using logical steps.
4	Length	Develops measurement sense using units, comparison and estimation.	Students select suitable units, compare measures and solve practical measurement questions.
5	Weight	Develops measurement sense using units, comparison and estimation.	Students select suitable units, compare measures and solve practical measurement questions.
6	Capacity	Develops measurement sense using units, comparison and estimation.	Students select suitable units, compare measures and solve practical measurement questions.
7	Geometry	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.
8	Addition, Subtraction, Multiplication, Division	Strengthens core arithmetic through mental, written and problem-based methods.	Students solve multi-step arithmetic problems with speed, accuracy and clear reasoning.

Class 4 SCO IMO Syllabus

Primary progression: number systems, Roman numerals, factors, geometry, area-perimeter, data and decimals.

Chapter No.	Chapter Title	Chapterwise Note	Key Learning Outcome
1	Number System	Builds number sense, operation fluency and flexible use of numerical representations.	Students calculate accurately, compare quantities, recognize patterns and justify numerical choices.
2	Roman Numerals	Builds number sense, operation fluency and flexible use of numerical representations.	Students calculate accurately, compare quantities, recognize patterns and justify numerical choices.
3	Factors and multiples	Develops grade-appropriate mathematical understanding through concept clarity, practice and reasoning.	Students apply the concept in structured and unfamiliar problems with clear working.
4	Geometrical Concepts	Develops grade-appropriate mathematical understanding through concept clarity, practice and reasoning.	Students apply the concept in structured and unfamiliar problems with clear working.
5	Area and Perimeter of Geometrical Figures	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.
6	Graphical Representation of Data	Develops data interpretation, chance reasoning and evidence-based problem solving.	Students read tables/graphs, analyze patterns and apply probability or optimization ideas.
7	Addition and Subtraction of Decimal Numbers	Builds number sense, operation fluency and flexible use of numerical representations.	Students calculate accurately, compare quantities, recognize patterns and justify numerical choices.

Class 5 SCO IMO Syllabus

Upper primary progression: decimals, mensuration, financial mathematics, data handling and logical reasoning.

Chapter No.	Chapter Title	Chapterwise Note	Key Learning Outcome
1	Number Systems	Builds number sense, operation fluency and flexible use of numerical representations.	Students calculate accurately, compare quantities, recognize patterns and justify numerical choices.
2	Addition and Subtraction of Decimal Numbers	Builds number sense, operation fluency and flexible use of numerical representations.	Students calculate accurately, compare quantities, recognize patterns and justify numerical choices.
3	Multiplication and Division of Decimal Numbers	Builds number sense, operation fluency and flexible use of numerical representations.	Students calculate accurately, compare quantities, recognize patterns and justify numerical choices.
4	Area and Perimeter of Geometrical Figures	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.
5	Profit and Loss	Connects mathematics with financial reasoning, value comparison and everyday decision-making.	Students solve money, percentage and simple financial problems using logical steps.
6	Introduction of Data handling	Develops data interpretation, chance reasoning and evidence-based problem solving.	Students read tables/graphs, analyze patterns and apply probability or optimization ideas.
7	Simple Interest	Connects mathematics with financial reasoning, value comparison and everyday decision-making.	Students solve money, percentage and simple financial problems using logical steps.

Chapter No.	Chapter Title	Chapterwise Note	Key Learning Outcome
8	Logical and Analytical Reasoning	Strengthens logic, pattern recognition, deduction and proof-readiness.	Students analyze statements, identify relationships and explain why a conclusion follows.

Class 6 SCO IMO Syllabus

Middle school bridge: integers, fractions, decimals, geometry, data, algebra, ratio, symmetry and practical construction.

Chapter No.	Chapter Title	Chapterwise Note	Key Learning Outcome
1	Knowing our Numbers	Builds number sense, operation fluency and flexible use of numerical representations.	Students calculate accurately, compare quantities, recognize patterns and justify numerical choices.
2	Whole Numbers	Builds number sense, operation fluency and flexible use of numerical representations.	Students calculate accurately, compare quantities, recognize patterns and justify numerical choices.
3	Playing with Numbers	Builds number sense, operation fluency and flexible use of numerical representations.	Students calculate accurately, compare quantities, recognize patterns and justify numerical choices.
4	Basic Geometrical Ideas	Develops grade-appropriate mathematical understanding through concept clarity, practice and reasoning.	Students apply the concept in structured and unfamiliar problems with clear working.
5	Understanding Elementary Shapes	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.
6	Integers	Builds number sense, operation fluency and flexible use of numerical representations.	Students calculate accurately, compare quantities, recognize patterns and justify numerical choices.
7	Fractions	Builds number sense, operation fluency and flexible use of numerical representations.	Students calculate accurately, compare quantities, recognize patterns and justify numerical choices.
8	Decimals	Builds number sense, operation fluency and flexible use of numerical representations.	Students calculate accurately, compare quantities, recognize patterns and justify numerical choices.
9	Data Handling	Develops data interpretation, chance reasoning and evidence-based problem solving.	Students read tables/graphs, analyze patterns and apply probability or optimization ideas.
10	Mensuration	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.
11	Algebra	Introduces symbolic thinking, generalization, equations and algebraic problem-solving strategies.	Students translate problems into symbols, manipulate expressions and solve equations logically.
12	Ratio And Proportion	Develops grade-appropriate mathematical understanding through concept clarity, practice and reasoning.	Students apply the concept in structured and unfamiliar problems with clear working.
13	Symmetry	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.
14	Practical Geometry	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.

Class 7 SCO IMO Syllabus

Middle school reasoning: rational numbers, equations, geometry, congruence, quantities, exponents, symmetry and solids.

Chapter No.	Chapter Title	Chapterwise Note	Key Learning Outcome
1	Integers	Builds number sense, operation fluency and flexible use of numerical representations.	Students calculate accurately, compare quantities, recognize patterns and justify numerical choices.
2	Fractions and Decimals	Builds number sense, operation fluency and flexible use of numerical representations.	Students calculate accurately, compare quantities, recognize patterns and justify numerical choices.
3	Data Handling	Develops data interpretation, chance reasoning and evidence-based problem solving.	Students read tables/graphs, analyze patterns and apply probability or optimization ideas.
4	Simple Equations	Introduces symbolic thinking, generalization, equations and algebraic problem-solving strategies.	Students translate problems into symbols, manipulate expressions and solve equations logically.
5	Lines and Angles	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.
6	The Triangle and its Properties	Develops grade-appropriate mathematical understanding through concept clarity, practice and reasoning.	Students apply the concept in structured and unfamiliar problems with clear working.
7	Congruence of Triangles	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.
8	Comparing Quantities	Builds number sense, operation fluency and flexible use of numerical representations.	Students calculate accurately, compare quantities, recognize patterns and justify numerical choices.
9	Rational Numbers	Builds number sense, operation fluency and flexible use of numerical representations.	Students calculate accurately, compare quantities, recognize patterns and justify numerical choices.
10	Practical Geometry	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.
11	Perimeter and Area	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.
12	Algebraic Expressions	Introduces symbolic thinking, generalization, equations and algebraic problem-solving strategies.	Students translate problems into symbols, manipulate expressions and solve equations logically.
13	Exponents and Powers	Builds number sense, operation fluency and flexible use of numerical representations.	Students calculate accurately, compare quantities, recognize patterns and justify numerical choices.
14	Symmetry	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.
15	Visualising Solid Shapes	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.

Class 8 SCO IMO Syllabus

Pre-secondary reasoning: rational numbers, linear equations, quadrilaterals, data, roots, algebraic identities, graphs and factorisation.

Chapter No.	Chapter Title	Chapterwise Note	Key Learning Outcome
1	Rational Numbers	Builds number sense, operation fluency and flexible use of numerical representations.	Students calculate accurately, compare quantities, recognize patterns and justify numerical choices.
2	Linear Equation in One Variables	Introduces symbolic thinking, generalization, equations and algebraic problem-solving strategies.	Students translate problems into symbols, manipulate expressions and solve equations logically.
3	Understanding Quadrilaterals	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.
4	Practical Geometry	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.
5	Data Handling	Develops data interpretation, chance reasoning and evidence-based problem solving.	Students read tables/graphs, analyze patterns and apply probability or optimization ideas.
6	Squares and Square Roots	Builds number sense, operation fluency and flexible use of numerical representations.	Students calculate accurately, compare quantities, recognize patterns and justify numerical choices.
7	Cube and Cube Roots	Builds number sense, operation fluency and flexible use of numerical representations.	Students calculate accurately, compare quantities, recognize patterns and justify numerical choices.
8	Comparing Quantities	Builds number sense, operation fluency and flexible use of numerical representations.	Students calculate accurately, compare quantities, recognize patterns and justify numerical choices.
9	Algebraic Expression and Identities	Introduces symbolic thinking, generalization, equations and algebraic problem-solving strategies.	Students translate problems into symbols, manipulate expressions and solve equations logically.
10	Visualising Solid Shapes	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.
11	Mensuration	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.
12	Exponents and Powers	Builds number sense, operation fluency and flexible use of numerical representations.	Students calculate accurately, compare quantities, recognize patterns and justify numerical choices.
13	Direct and Inverse Proportions	Develops grade-appropriate mathematical understanding through concept clarity, practice and reasoning.	Students apply the concept in structured and unfamiliar problems with clear working.
14	Factorisation	Develops grade-appropriate mathematical understanding through concept clarity, practice and reasoning.	Students apply the concept in structured and unfamiliar problems with clear working.
15	Introduction of Graphs	Develops data interpretation, chance reasoning and evidence-based problem solving.	Students read tables/graphs, analyze patterns and apply probability or optimization ideas.

Chapter No.	Chapter Title	Chapterwise Note	Key Learning Outcome
16	Playing with Numbers	Builds number sense, operation fluency and flexible use of numerical representations.	Students calculate accurately, compare quantities, recognize patterns and justify numerical choices.

Class 9 SCO IMO Syllabus

Secondary foundations: number systems, polynomials, coordinate geometry, linear equations, Euclidean geometry, statistics and probability.

Chapter No.	Chapter Title	Chapterwise Note	Key Learning Outcome
1	Number System	Builds number sense, operation fluency and flexible use of numerical representations.	Students calculate accurately, compare quantities, recognize patterns and justify numerical choices.
2	Polynomials	Introduces symbolic thinking, generalization, equations and algebraic problem-solving strategies.	Students translate problems into symbols, manipulate expressions and solve equations logically.
3	Coordinate Geometry	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.
4	Linear Equations In two variables	Introduces symbolic thinking, generalization, equations and algebraic problem-solving strategies.	Students translate problems into symbols, manipulate expressions and solve equations logically.
5	Introduction to Euclids Geometry	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.
6	Lines and Angles	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.
7	Triangles	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.
8	Quadrilaterals	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.
9	Areas of Parallelograms and Triangles	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.
10	Circles	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.
11	Constructions	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.
12	Herons Formula	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.
13	Surface areas and Volumes	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.

Chapter No.	Chapter Title	Chapterwise Note	Key Learning Outcome
14	Statistics	Develops data interpretation, chance reasoning and evidence-based problem solving.	Students read tables/graphs, analyze patterns and apply probability or optimization ideas.
15	Probability	Develops data interpretation, chance reasoning and evidence-based problem solving.	Students read tables/graphs, analyze patterns and apply probability or optimization ideas.

Class 10 SCO IMO Syllabus

Secondary consolidation: real numbers, algebra, quadratic equations, progressions, geometry, trigonometry, mensuration, statistics and probability.

Chapter No.	Chapter Title	Chapterwise Note	Key Learning Outcome
1	Real Numbers	Builds number sense, operation fluency and flexible use of numerical representations.	Students calculate accurately, compare quantities, recognize patterns and justify numerical choices.
2	Polynomials	Introduces symbolic thinking, generalization, equations and algebraic problem-solving strategies.	Students translate problems into symbols, manipulate expressions and solve equations logically.
3	Pair of Linear Equations in two variables	Introduces symbolic thinking, generalization, equations and algebraic problem-solving strategies.	Students translate problems into symbols, manipulate expressions and solve equations logically.
4	Quadratic Equations	Introduces symbolic thinking, generalization, equations and algebraic problem-solving strategies.	Students translate problems into symbols, manipulate expressions and solve equations logically.
5	Arithmetic Progression	Develops grade-appropriate mathematical understanding through concept clarity, practice and reasoning.	Students apply the concept in structured and unfamiliar problems with clear working.
6	Triangles	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.
7	Coordinate Geometry	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.
8	Introduction to Trigonometry	Develops angle, ratio, function and application-based reasoning in trigonometry.	Students use trigonometric identities, ratios and graphs to solve theoretical and applied problems.
9	Some Applications of Trigonometry	Develops angle, ratio, function and application-based reasoning in trigonometry.	Students use trigonometric identities, ratios and graphs to solve theoretical and applied problems.
10	Circles	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.
11	Constructions	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.
12	Areas Related to circles	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.
13	Surface Areas and Volumes	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.

Chapter No.	Chapter Title	Chapterwise Note	Key Learning Outcome
14	Statistics	Develops data interpretation, chance reasoning and evidence-based problem solving.	Students read tables/graphs, analyze patterns and apply probability or optimization ideas.
15	Probability	Develops data interpretation, chance reasoning and evidence-based problem solving.	Students read tables/graphs, analyze patterns and apply probability or optimization ideas.

Class 11 SCO IMO Syllabus

Senior Olympiad bridge: sets, functions, induction, complex numbers, inequalities, combinatorics, sequences, conics and probability.

Chapter No.	Chapter Title	Chapterwise Note	Key Learning Outcome
1	Sets	Builds the language of modern mathematics through sets, mappings and function behavior.	Students classify relations, interpret functions and use notation accurately.
2	Relation and Functions	Builds the language of modern mathematics through sets, mappings and function behavior.	Students classify relations, interpret functions and use notation accurately.
3	Trigonometric Functions	Develops angle, ratio, function and application-based reasoning in trigonometry.	Students use trigonometric identities, ratios and graphs to solve theoretical and applied problems.
4	Principle of Mathematical Induction	Develops grade-appropriate mathematical understanding through concept clarity, practice and reasoning.	Students apply the concept in structured and unfamiliar problems with clear working.
5	Complex Numbers and Quadratic Equations	Builds number sense, operation fluency and flexible use of numerical representations.	Students calculate accurately, compare quantities, recognize patterns and justify numerical choices.
6	Linear Inequalities	Introduces symbolic thinking, generalization, equations and algebraic problem-solving strategies.	Students translate problems into symbols, manipulate expressions and solve equations logically.
7	Permutations and Combinations	Develops counting, pattern generalization and combinatorial reasoning used in Olympiad mathematics.	Students count systematically, extend patterns and solve arrangements or series problems.
8	Binomials	Develops counting, pattern generalization and combinatorial reasoning used in Olympiad mathematics.	Students count systematically, extend patterns and solve arrangements or series problems.
9	Sequences and Series	Develops counting, pattern generalization and combinatorial reasoning used in Olympiad mathematics.	Students count systematically, extend patterns and solve arrangements or series problems.
10	Straight Lines	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.
11	Conic Sections	Connects algebra and geometry through coordinates, graphs, vectors and spatial models.	Students represent shapes and relationships analytically and solve geometry problems using equations.
12	Introduction to three dimensional geometry	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.
13	Limits and Derivatives	Introduces change, accumulation and functional analysis for senior secondary mathematical maturity.	Students model rates, areas and optimization problems using calculus concepts where appropriate.

Chapter No.	Chapter Title	Chapterwise Note	Key Learning Outcome
14	Mathematical Reasonings	Strengthens logic, pattern recognition, deduction and proof-readiness.	Students analyze statements, identify relationships and explain why a conclusion follows.
15	Statistics	Develops data interpretation, chance reasoning and evidence-based problem solving.	Students read tables/graphs, analyze patterns and apply probability or optimization ideas.
16	Probability	Develops data interpretation, chance reasoning and evidence-based problem solving.	Students read tables/graphs, analyze patterns and apply probability or optimization ideas.
17	Basic Mathematics	Develops grade-appropriate mathematical understanding through concept clarity, practice and reasoning.	Students apply the concept in structured and unfamiliar problems with clear working.

Class 12 SCO IMO Syllabus

Senior readiness: functions, matrices, determinants, calculus, vectors, 3D geometry, linear programming and probability.

Chapter No.	Chapter Title	Chapterwise Note	Key Learning Outcome
1	Relation and Functions	Builds the language of modern mathematics through sets, mappings and function behavior.	Students classify relations, interpret functions and use notation accurately.
2	Inverse Trigonometric Function	Develops angle, ratio, function and application-based reasoning in trigonometry.	Students use trigonometric identities, ratios and graphs to solve theoretical and applied problems.
3	Matrices	Introduces symbolic thinking, generalization, equations and algebraic problem-solving strategies.	Students translate problems into symbols, manipulate expressions and solve equations logically.
4	Determinants	Introduces symbolic thinking, generalization, equations and algebraic problem-solving strategies.	Students translate problems into symbols, manipulate expressions and solve equations logically.
5	Continuity and Differentiability	Introduces change, accumulation and functional analysis for senior secondary mathematical maturity.	Students model rates, areas and optimization problems using calculus concepts where appropriate.
6	Application of Derivatives	Introduces change, accumulation and functional analysis for senior secondary mathematical maturity.	Students model rates, areas and optimization problems using calculus concepts where appropriate.
7	Integral	Introduces change, accumulation and functional analysis for senior secondary mathematical maturity.	Students model rates, areas and optimization problems using calculus concepts where appropriate.
8	Application of Integrals	Introduces change, accumulation and functional analysis for senior secondary mathematical maturity.	Students model rates, areas and optimization problems using calculus concepts where appropriate.
9	Differential Equations	Introduces symbolic thinking, generalization, equations and algebraic problem-solving strategies.	Students translate problems into symbols, manipulate expressions and solve equations logically.
10	Vector Algebra	Introduces symbolic thinking, generalization, equations and algebraic problem-solving strategies.	Students translate problems into symbols, manipulate expressions and solve equations logically.
11	Three Dimensional Geometry	Builds spatial reasoning, geometric properties, construction skills and proof-style thinking.	Students identify properties, compute measures and use geometric reasoning to justify answers.
12	Linear Programming	Develops data interpretation, chance reasoning and evidence-based problem solving.	Students read tables/graphs, analyze patterns and apply probability or optimization ideas.

Chapter No.	Chapter Title	Chapterwise Note	Key Learning Outcome
13	Probability	Develops data interpretation, chance reasoning and evidence-based problem solving.	Students read tables/graphs, analyze patterns and apply probability or optimization ideas.

5. Global IMO-Style Enrichment Strand for SCO IMO

The SCO syllabus covers grade-wise school mathematics. To make the pathway more globally aligned with IMO-style mathematical thinking, teachers should enrich higher-grade preparation using the following cross-cutting strands.

Olympiad Strand	Global Scope	SCO IMO Classroom Adaptation
Algebra	Identities, equations, inequalities, functions, sequences and proof-based manipulation.	Start with pattern generalization, then move to transformations, bounds and functional thinking.
Geometry	Angles, triangles, circles, similarity, coordinates, constructions, vectors and 3D reasoning.	Use diagrams, multiple solution routes and proof writing from middle school onward.
Number Theory	Divisibility, factors, primes, remainders, parity, modular reasoning and integer patterns.	Integrate with number systems, factors, multiples and algebraic reasoning.
Combinatorics	Counting, arrangements, selections, recursion, pigeonhole thinking and probability connections.	Use puzzles, cases, systematic listing and explanation-based solutions.
Mathematical Communication	Clear steps, diagrams, definitions, symbols and final answer justification.	Students should learn to explain why their answer is correct, not only how to compute it.

6. Preparation Guidance for Students, Teachers, Parents and Schools

For students

- Read the chapter concept first, then solve examples and finally attempt mixed Olympiad-style questions.
- Maintain a mistake notebook: write the concept, the error type and the corrected method.
- Practice mental calculations, diagrams, estimation and logical elimination for multiple-choice accuracy.
- For Grades 8-12, add proof-style reasoning and non-routine problem solving every week.

For teachers

- Use the chapter sequence to create a weekly school preparation plan aligned with the selected SCO cycle.
- Teach multiple strategies for one problem: visual, arithmetic, algebraic, geometric and logical.
- Encourage students to justify answers orally or in writing; this develops global Olympiad thinking.
- Use SCO reports to identify topic gaps and create re-teaching groups.

For parents

- Support regular practice in short sessions rather than last-minute memorisation.
- Focus on confidence, curiosity and reasoning, not only rank or score.
- Discuss mistakes positively and ask the child to explain the method in simple words.

For schools

- Use SCO IMO as a year-round mathematics enrichment program, not only as a one-day competition.
- Plan participation across Spring, Summer or Winter cycles according to school calendars and readiness.
- Create clubs or enrichment groups for advanced reasoning, puzzles and proof-style problem solving.

8. Research and Alignment References

Reference	How it informs this SCO IMO syllabus
International Mathematical Olympiad official site	Used for global positioning of IMO as the world championship mathematics competition for high-school students.
IMO Regulations / aims	Used to align SCO IMO with mathematical challenge, fair conduct, international exchange of school syllabuses and promotion of mathematics.
HBCSE Mathematical Olympiad syllabus note	Used to benchmark senior Olympiad preparation around pre-degree mathematics and major areas including algebra, combinatorics, geometry and number theory.
SCO Maths Olympiad Syllabus 2026-27	Used as the official SCO grade-wise chapter pathway from Class 1 to Class 12.

Independence note: SCO International Maths Olympiad (SCO IMO) is a School Connect Olympiad programme and is not presented as the official International Mathematical Olympiad. The document uses global IMO-style educational principles to strengthen SCO's online mathematics pathway.