

SCO INTERNATIONAL OLYMPIAD

CLASS 4 MATHS SYLLABUS

A comprehensive syllabus guide for schools, teachers, parents, and students

Designed from Class 4 Maths syllabus pathways and aligned with SCO's platform flow for guided preparation, practice, reporting, and future-ready academic growth.

- age-fit learning guidance for Class 4 / primary-level learners globally
- focused pathway across number sense, Roman numerals, factors, geometry, measurement, graphs, and decimals
- preparation roadmap, classroom implementation ideas, and future-benefit framing for mathematical confidence and Olympiad readiness

Maths	English	Science	Mental Ability	Finance Knowledge
AI	Entrepreneurship	GK	Coding	Life Skills

SCO International Maths Olympiad - Class 4

Syllabus

A structured syllabus guide for students, teachers, parents, and schools to understand the Class 4 Maths Olympiad learning pathway at a glance. The syllabus develops number fluency, mathematical reasoning, measurement sense, geometry awareness, data interpretation, and careful problem-solving habits through age-fit examples and Olympiad-style thinking.

How students benefit

- Builds confidence in numbers, patterns, shapes, money, measurement, and data.
- Connects classroom mathematics with daily-life situations and Olympiad reasoning.
- Improves accuracy through step-by-step calculation, checking, and explanation habits.
- Prepares students for mixed question types: direct concepts, reasoning, case studies, and achiever-level tasks.

How teachers and schools can use this syllabus

- Plan weekly practice around one chapter focus and one mixed-revision focus.
- Use chapter outcomes to design worksheets, class activities, remedial support, and enrichment tasks.
- Track skill gaps across number system, geometry, data, and decimal calculations.
- Align classroom preparation with SCO practice, assessment, reporting, and feedback flow.

SYLLABUS AT A GLANCE

Class 4 Maths chapter pathway and learning focus

Chapter	Chapter Name	Quick Learning Focus
1	Number System	Place value, comparison, ordering, rounding, estimation, and number formation.
2	Roman Numerals	Reading, writing, and converting Roman numerals using valid symbol rules.
3	Factors and Multiples	Finding factors, multiples, divisibility patterns, and simple common multiples.
4	Geometrical Concepts	Lines, rays, angles, polygons, circles, symmetry, 2-D and 3-D shapes.
5	Area and Perimeter of Geometrical Figures	Perimeter and area of squares, rectangles, and daily-life measurement problems.
6	Graphical Representation of Data	Reading pictographs, bar graphs, tables, scales, totals, comparisons, and simple averages.

7	Addition and Subtraction of Decimal Numbers	Decimal place value, money-based decimals, alignment of decimal points, and estimation.
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CHAPTER-WISE SYLLABUS, NOTES AND LEARNING OUTCOMES

Chapter 1

Number System

Chapter note: Students strengthen the foundation of whole numbers by reading, writing, comparing, ordering, and decomposing numbers using place value. The chapter also develops estimation and number-formation skills required in Olympiad problem solving.

Learning outcomes

- Read and write large numbers using correct place-value language.
- Identify face value, place value, predecessor, successor, expanded form, and standard form.
- Compare and arrange numbers in ascending or descending order.
- Use estimation and rounding to check whether an answer is reasonable.

Classroom / practice examples: Form the largest and smallest numbers from given digits; compare prices, distances, or population numbers; estimate sums and differences before calculating.

Assessment focus: Place-value reasoning, number comparison, expanded notation, digit-interchange logic, and estimation-based MCQs.

Chapter 2

Roman Numerals

Chapter note: This chapter introduces the logic of Roman numerals as a different number-writing system. Students learn symbol values, combination rules, and common restrictions so that they can convert between Hindu-Arabic numerals and Roman numerals accurately.

Learning outcomes

- Recognize I, V, X, L, C, D, and M and their values.
- Apply addition and subtraction rules in simple Roman numeral combinations.
- Convert selected Class 4 level numbers to and from Roman numerals.
- Identify invalid Roman numeral patterns and common mistakes.

Classroom / practice examples: Write dates, clock numbers, chapter numbers, and puzzle clues in Roman numerals; compare pairs like XLVIII and LVIII.

Assessment focus: Conversion accuracy, valid formation rules, symbol-value mapping, and Roman numeral reasoning.

Chapter 3

Factors and Multiples

Chapter note: Students explore how numbers are built through multiplication and division. The chapter supports mental arithmetic, divisibility, arrangements, sharing, grouping, and introductory common-factor/common-multiple thinking.

Learning outcomes

- List factors and multiples of given numbers.

- Recognize prime and composite numbers at an introductory level.
- Use divisibility rules for 2, 3, 5, 6, 9, and 10 where age appropriate.
- Solve arrangement and grouping questions using factors and multiples.

Classroom / practice examples: Find possible equal rows of chairs, packets, or seeds; identify numbers divisible by both 3 and 5; find the first common multiple in a pattern.

Assessment focus: Divisibility checks, common multiples, factor pairs, multiplication relationships, and everyday grouping problems.

Chapter 4

Geometrical Concepts

Chapter note: Students learn to identify and describe shapes, lines, corners, sides, angles, diagonals, solids, nets, and symmetry. The focus is on visual reasoning and correct mathematical vocabulary.

Learning outcomes

- Differentiate point, line, line segment, ray, angle, and simple curves.
- Identify properties of triangles, squares, rectangles, circles, and common quadrilaterals.
- Recognize basic 3-D shapes such as cube, cuboid, cone, cylinder, and sphere.
- Use properties to classify shapes and solve visual puzzles.

Classroom / practice examples: Identify the solid represented by stacked coins; select nets; count sides/corners; compare polygons; locate symmetry in simple designs.

Assessment focus: Shape identification, properties, 2-D/3-D reasoning, net recognition, and visual-spatial logic.

Chapter 5

Area and Perimeter of Geometrical Figures

Chapter note: This chapter connects measurement with real-life spaces such as gardens, rooms, tiles, paths, and frames. Students learn the difference between measuring boundary and measuring surface.

Learning outcomes

- Find the perimeter of squares and rectangles using side lengths.
- Find the area of squares and rectangles using unit squares or formulae.
- Choose correct units such as cm, m, square cm, and square m.
- Solve word problems involving fencing, patches, floors, and play areas.

Classroom / practice examples: Calculate fencing required for a garden; find cloth needed for square patches; compare area and perimeter in real-life situations.

Assessment focus: Formula selection, unit awareness, real-life measurement modelling, and multi-step perimeter/area problems.

Chapter 6

Graphical Representation of Data

Chapter note: Students learn how information can be organized visually through tables, pictographs, and bar graphs. They practise reading scales, comparing quantities, finding totals, and drawing conclusions from data.

Learning outcomes

- Read and interpret pictographs, bar graphs, tally charts, and simple tables.
- Use graph scales correctly when each symbol or bar unit represents more than one item.
- Compare data values and find least, greatest, difference, total, and simple average.
- Answer case-study style questions based on charts and classroom surveys.

Classroom / practice examples: Read favourite ice-cream graphs, attendance charts, temperature charts, and books-read bar graphs.

Assessment focus: Data interpretation, scale reading, comparison, totals, differences, and simple conclusion-making.

Chapter 7

Addition and Subtraction of Decimal Numbers

Chapter note: Students extend place-value understanding into tenths and hundredths. The chapter emphasizes careful decimal alignment, money-based calculations, estimation, and real-life contexts.

Learning outcomes

- Understand decimal place value up to tenths and hundredths.
- Add and subtract decimal numbers by aligning decimal points.
- Use decimals in money, measurement, and daily-life word problems.
- Estimate and check decimal answers for reasonableness.

Classroom / practice examples: Calculate change after shopping; add weights of grocery items; compare decimal sums; round money to the nearest rupee when required.

Assessment focus: Decimal alignment, money problems, subtraction with borrowing, rounding, and multi-step decimal reasoning.

OLYMPIAD SKILL MAP

How the chapters build mathematical thinking

Skill Area	Connected Chapters	Expected Growth
Number fluency	Number System, Roman Numerals, Factors and Multiples	Quick calculation, number sense, place value, and divisibility reasoning.
Visual reasoning	Geometrical Concepts	Shape recognition, spatial thinking, properties of figures, and net identification.
Measurement thinking	Area and Perimeter	Choosing formulae, selecting units, and modelling real-world spaces.
Data literacy	Graphical Representation of Data	Reading tables/graphs, comparing values, and drawing evidence-based conclusions.
Financial and decimal accuracy	Addition and Subtraction of Decimals	Money calculations, change, estimation, and decimal alignment.
Problem-solving habit	All chapters	Understand the question, identify the method, calculate carefully, and verify the answer.

INDICATIVE ASSESSMENT BLUEPRINT

Suggested structure for practice and internal school preparation

Area	Indicative Weightage	Question Focus
Concept Understanding	12-14 questions	Direct concept checks from number system, Roman numerals, factors, geometry, area, perimeter, graphs, and decimals.
Application and Word Problems	8-10 questions	Daily-life situations such as shopping, gardens, classroom data, distance, money, and measurement.
Reasoning and Logical Thinking	5-6 questions	Find the correct statement, identify error, compare methods, choose the most reasonable option.
Graph / Data Interpretation	4-5 questions	Read pictographs, bar graphs, tables, totals, differences, and averages.
Achiever-Level Challenge	4-5 questions	Multi-step problems requiring careful reading and more than one concept.

PREPARATION ROADMAP

A simple school and home planning sequence

Stage	Focus	Recommended Practice
Week 1	Number System + Roman Numerals	Daily place-value drills; one conversion exercise; one mixed worksheet.
Week 2	Factors and Multiples + Geometry	Multiplication/factor games; shape-property chart; visual MCQ practice.
Week 3	Area, Perimeter + Data	Garden/floor/tile problems; read a classroom bar graph or pictograph.
Week 4	Decimals + Mixed Olympiad Practice	Money problems, decimal addition/subtraction, timed mixed paper, and error correction.
Final Revision	All Chapters	Review formulae, Roman symbols, divisibility rules, graph scales, and common mistakes.

Student checklist before the Olympiad

- Can read and compare large numbers confidently.
- Can convert common Roman numerals without invalid repeats.
- Can identify factors, multiples, and divisibility patterns.
- Can distinguish perimeter from area and use correct units.

Classroom activity ideas

- Create a class shop and practise decimal money calculations.
- Build shape cards showing sides, corners, diagonals, and examples.
- Use classroom attendance or reading records to create bar graphs.
- Use graph-paper rectangles to compare area and perimeter.

- Can read a graph carefully before choosing an answer.
- Can align decimal points in money and measurement sums.

- Run a Roman numeral treasure hunt using clock and chapter numbers.
- Play factor-pair bingo and multiple-chain games.

TEACHER AND SCHOOL IMPLEMENTATION GUIDANCE

Planning principles

- Begin each chapter with concrete examples before abstract calculations.
- Use at least one real-life problem in every practice session.
- Ask students to explain why an option is correct and why other options are incorrect.
- Maintain an error notebook for wrong operations, wrong units, wrong graph scale reading, and decimal misalignment.
- Use short mixed quizzes after every two chapters to build Olympiad readiness.

STUDENT-FRIENDLY GLOSSARY

Term	Meaning
Place Value	The value of a digit based on its position in the number.
Expanded Form	Writing a number as the sum of its place values.
Roman Numeral	A number written using symbols such as I, V, X, L, C, D, and M.
Factor	A number that divides another number exactly.
Multiple	A number obtained by multiplying a number by 1, 2, 3, and so on.
Perimeter	The total distance around the boundary of a shape.
Area	The amount of surface covered by a shape.
Bar Graph	A graph that uses bars to show and compare data.
Decimal	A number with a decimal point, often used for money and measurement.
Estimate	A reasonable approximate answer used to check calculation sense.

FINAL LEARNING MESSAGE

Class 4 Maths Olympiad preparation should help every learner become accurate, curious, logical, and confident. Strong preparation is not limited to memorising formulae; it includes reading the question carefully, choosing the right method, showing mental discipline, checking units, interpreting data, and explaining mathematical thinking clearly. **The SCO International Maths Olympiad encourages students to connect mathematics with classroom learning, daily-life decisions, visual reasoning, and future-ready problem-solving.**