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SCO INTERNATIONAL MENTAL ABILITY OLYMPIAD

COMPILED SYLLABUS

Chapter-wise notes and learning outcomes for Grades 1-12

Designed as a complete grade-wise syllabus reference for students, teachers, parents and schools.

- chapter-wise mental ability notes with measurable learning outcomes
- progression from visual observation and patterns to advanced critical reasoning
- aligned with Olympiad preparation, classroom enrichment and future-ready thinking skills

Maths	Grade 1-12	Chapters	Notes	Logic
Spatial	Data	Verbal	Puzzles	Reasoning

1. Syllabus Design Principles

This compiled syllabus organizes SCO International Mental Ability Olympiad learning across Grades 1-12. It combines the uploaded SCO grade-wise syllabus with a globally aligned reasoning progression. The aim is to make each chapter useful for classroom teaching, student practice, parent guidance and official Olympiad preparation.

Grade Band	Learning Progression	Main Outcomes
Grades 1-2	Foundational visual and everyday reasoning.	Identify patterns, shapes, positions, groups, odd-one-out and simple analogies.
Grades 3-4	Expanding verbal and non-verbal reasoning.	Solve figure matrices, coding, direction, ranking, images, dates and classification.
Grades 5-7	Structured Olympiad reasoning.	Apply series, operations, puzzle test, calendar, blood relations, cubes/dice and verbal reasoning.
Grades 8-10	Advanced reasoning and data sufficiency.	Use syllogism, non-verbal series, statements, data sufficiency, images and timed reasoning.
Grades 11-12	Senior advanced critical and abstract reasoning.	Evaluate evidence, solve complex cases, interpret data and apply strategy to unfamiliar problems.

2. Grade-Wise Syllabus with Chapter Notes and Learning Outcomes

Class 1 Mental Ability Olympiad

Learning focus: Foundational observation, shape/space awareness, simple sequences and early reasoning vocabulary.

Chapter No.	Chapter Name	Small Teaching Note	Learning Outcome
1	Reasoning Patterns	Pattern reasoning trains students to observe repetition, change, position and hidden rules before choosing an answer.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will use pictures, simple comparisons and everyday examples.
2	Measuring Units	Measuring units build early quantitative comparison, length/weight/time sense and practical reasoning.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will use pictures, simple comparisons and everyday examples.
3	Reasoning Geometrical Shapes	Geometry reasoning builds recognition of shapes, solids, sides, faces, vertices, nets and spatial relationships.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will use pictures, simple comparisons and everyday examples.
4	Odd One Out	This chapter strengthens structured reasoning by asking students to observe information, identify the rule, test options and justify the best answer.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will use pictures, simple comparisons and everyday examples.
5	Spatial Understanding	Spatial understanding builds position vocabulary, orientation, size comparison and mental movement of objects.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will use pictures, simple comparisons and everyday examples.
6	Grouping of Figures	This chapter strengthens structured reasoning by asking students to observe information, identify the rule, test options and justify the best answer.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will use pictures, simple comparisons and everyday examples.
7	Analogy and Ranking Test	Ranking tasks train students to compare positions, arrange information and interpret relative order accurately.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will use pictures, simple comparisons and everyday examples.
8	Embedded Figures	Embedded figures train students to locate a target shape inside a complex visual pattern.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will use pictures, simple comparisons and everyday examples.

Class 2 Mental Ability Olympiad

Learning focus: Foundational observation, shape/space awareness, simple sequences and early reasoning vocabulary.

Chapter No.	Chapter Name	Small Teaching Note	Learning Outcome
1	Patterns	Pattern reasoning trains students to observe repetition, change, position and hidden rules before choosing an answer.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will use pictures, simple comparisons and everyday examples.
2	Measuring Units	Measuring units build early quantitative comparison, length/weight/time sense and practical reasoning.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will use pictures, simple comparisons and everyday examples.
3	Geometrical Shapes	Geometry reasoning builds recognition of shapes, solids, sides, faces, vertices, nets and spatial relationships.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will use pictures, simple comparisons and everyday examples.
4	Odd One Out	This chapter strengthens structured reasoning by asking students to observe information, identify the rule, test options and justify the best answer.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will use pictures, simple comparisons and everyday examples.
5	Spatial Understanding	Spatial understanding builds position vocabulary, orientation, size comparison and mental movement of objects.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will use pictures, simple comparisons and everyday examples.
6	Grouping of Figures	This chapter strengthens structured reasoning by asking students to observe information, identify the rule, test options and justify the best answer.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will use pictures, simple comparisons and everyday examples.
7	Analogy and Ranking Test	Ranking tasks train students to compare positions, arrange information and interpret relative order accurately.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will use pictures, simple comparisons and everyday examples.
8	Embedded Figures	Embedded figures train students to locate a target shape inside a complex visual pattern.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will use pictures, simple comparisons and everyday examples.
9	Series Completion	Series work develops rule discovery, number sense, symbol logic and step-by-step prediction.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will use pictures, simple comparisons and everyday examples.

Class 3 Mental Ability Olympiad

Learning focus: Growing pattern logic, verbal and non-verbal reasoning, ranking, images, directions and classification.

Chapter No.	Chapter Name	Small Teaching Note	Learning Outcome
1	Patterns	Pattern reasoning trains students to observe repetition, change, position and hidden rules before choosing an answer.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.
2	Figure Matrix	This chapter strengthens structured reasoning by asking students to observe information, identify the rule, test options and justify the best answer.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.
3	Grouping of Figures	This chapter strengthens structured reasoning by asking students to observe information, identify the rule, test options and justify the best answer.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.
4	Alphabet Test	Alphabet tests strengthen ordering, positional value, sequence tracking and verbal-symbol logic.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.

5	Analogy and Classification	Analogy develops relationship recognition between pairs, figures, words, numbers and ideas.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.
6	Ranking Test	Ranking tasks train students to compare positions, arrange information and interpret relative order accurately.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.
7	Coding Decoding	Coding-decoding builds symbolic thinking by transforming letters, numbers or figures using a stated or hidden rule.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.
8	Geometrical Shapes	Geometry reasoning builds recognition of shapes, solids, sides, faces, vertices, nets and spatial relationships.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.
9	Mirror Images and Water Images	Mirror and water images develop visual rotation, reflection awareness and attention to orientation.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.
10	Direction Sense Test	Direction sense develops route tracing, left-right orientation, compass logic and spatial memory.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.
11	Logical Sequence of Words	This chapter strengthens structured reasoning by asking students to observe information, identify the rule, test options and justify the best answer.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.

Class 4 Mental Ability Olympiad

Learning focus: Growing pattern logic, verbal and non-verbal reasoning, ranking, images, directions and classification.

Chapter No.	Chapter Name	Small Teaching Note	Learning Outcome
1	Patterns	Pattern reasoning trains students to observe repetition, change, position and hidden rules before choosing an answer.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.
2	Alphabet Test	Alphabet tests strengthen ordering, positional value, sequence tracking and verbal-symbol logic.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.
3	Coding-Decoding	Coding-decoding builds symbolic thinking by transforming letters, numbers or figures using a stated or hidden rule.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.
4	Ranking Test	Ranking tasks train students to compare positions, arrange information and interpret relative order accurately.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.
5	Mirror Images and Water Images	Mirror and water images develop visual rotation, reflection awareness and attention to orientation.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.
6	Geometrical Shapes and Solids	Geometry reasoning builds recognition of shapes, solids, sides, faces, vertices, nets and spatial relationships.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.
7	Embedded Figures	Embedded figures train students to locate a target shape inside a complex visual pattern.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.

8	Direction Sense Test	Direction sense develops route tracing, left-right orientation, compass logic and spatial memory.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.
9	Days and Dates & Possible Combinations	This chapter strengthens structured reasoning by asking students to observe information, identify the rule, test options and justify the best answer.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.
10	Analogy and Classification	Analogy develops relationship recognition between pairs, figures, words, numbers and ideas.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.

Class 5 Mental Ability Olympiad

Learning focus: Structured reasoning with series, coding, operations, calendars, puzzles, blood relations and verbal logic.

Chapter No.	Chapter Name	Small Teaching Note	Learning Outcome
1	Series Completion	Series work develops rule discovery, number sense, symbol logic and step-by-step prediction.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.
2	Coding and Decoding	Coding-decoding builds symbolic thinking by transforming letters, numbers or figures using a stated or hidden rule.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.
3	Alphabet Test	Alphabet tests strengthen ordering, positional value, sequence tracking and verbal-symbol logic.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.
4	Mathematical Operations	Operation-based reasoning checks students ability to interpret symbols and apply rule changes accurately.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.
5	Puzzle Test	Puzzle tests train multi-condition reasoning, deduction, elimination and organised working habits.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.
6	Calendar Test	Calendar and clock work builds time reasoning, date logic, cyclic pattern awareness and calculation accuracy.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.
7	Number-Ranking-Time Sequence	Ranking tasks train students to compare positions, arrange information and interpret relative order accurately.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.
8	Arithmetical Reasoning	Arithmetical reasoning connects word problems, operations and logic to real-life quantitative situations.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.
9	Blood Relations	Blood relations strengthen relationship mapping, family-tree logic and careful interpretation of language.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.
10	Cubes and Dices Test	Cubes and dice develop 3D visualization, face-position logic, rotation and net interpretation.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.
11	Verbal Reasoning	Verbal reasoning strengthens inference, analogy, classification, argument sense and meaning-based logic.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.

Class 6 Mental Ability Olympiad

Learning focus: Structured reasoning with series, coding, operations, calendars, puzzles, blood relations and verbal logic.

Chapter No.	Chapter Name	Small Teaching Note	Learning Outcome
1	Series Completion	Series work develops rule discovery, number sense, symbol logic and step-by-step prediction.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.
2	Coding and Decoding	Coding-decoding builds symbolic thinking by transforming letters, numbers or figures using a stated or hidden rule.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.
3	Alphabet Test	Alphabet tests strengthen ordering, positional value, sequence tracking and verbal-symbol logic.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.
4	Mathematical Operations	Operation-based reasoning checks students ability to interpret symbols and apply rule changes accurately.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.
5	Puzzle Test	Puzzle tests train multi-condition reasoning, deduction, elimination and organised working habits.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.
6	Calendar Test	Calendar and clock work builds time reasoning, date logic, cyclic pattern awareness and calculation accuracy.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.
7	Number-Ranking-Time Sequence	Ranking tasks train students to compare positions, arrange information and interpret relative order accurately.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.
8	Arithmetical Reasoning	Arithmetical reasoning connects word problems, operations and logic to real-life quantitative situations.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.
9	Blood Relations	Blood relations strengthen relationship mapping, family-tree logic and careful interpretation of language.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.
10	Cubes and Dices Test	Cubes and dice develop 3D visualization, face-position logic, rotation and net interpretation.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.
11	Verbal Reasoning	Verbal reasoning strengthens inference, analogy, classification, argument sense and meaning-based logic.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will show the pattern or relationship used to reach the answer.

Class 7 Mental Ability Olympiad

Learning focus: Structured reasoning with series, coding, operations, calendars, puzzles, blood relations and verbal logic.

Chapter No.	Chapter Name	Small Teaching Note	Learning Outcome
1	Series Completion	Series work develops rule discovery, number sense, symbol logic and step-by-step prediction.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will combine multiple clues, eliminate wrong options and interpret simple data.
2	Coding and Decoding	Coding-decoding builds symbolic thinking by transforming letters, numbers or figures using a stated or hidden rule.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will combine multiple clues, eliminate wrong options and interpret simple data.
3	Alphabet Test	Alphabet tests strengthen ordering, positional value, sequence tracking and verbal-symbol logic.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will combine multiple clues, eliminate wrong options and interpret simple data.
4	Mathematical Operations	Operation-based reasoning checks students ability to interpret symbols and apply rule changes accurately.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will combine multiple clues, eliminate wrong options and interpret simple data.
5	Puzzle Test	Puzzle tests train multi-condition reasoning, deduction, elimination and organised working habits.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will combine multiple clues, eliminate wrong options and interpret simple data.
6	Calendar Test	Calendar and clock work builds time reasoning, date logic, cyclic pattern awareness and calculation accuracy.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will combine multiple clues, eliminate wrong options and interpret simple data.
7	Number-Ranking-Time Sequence	Ranking tasks train students to compare positions, arrange information and interpret relative order accurately.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will combine multiple clues, eliminate wrong options and interpret simple data.
8	Arithmetical Reasoning	Arithmetical reasoning connects word problems, operations and logic to real-life quantitative situations.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will combine multiple clues, eliminate wrong options and interpret simple data.
9	Blood Relations	Blood relations strengthen relationship mapping, family-tree logic and careful interpretation of language.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will combine multiple clues, eliminate wrong options and interpret simple data.
10	Cubes and Dices Test	Cubes and dice develop 3D visualization, face-position logic, rotation and net interpretation.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will combine multiple clues, eliminate wrong options and interpret simple data.
11	Verbal Reasoning	Verbal reasoning strengthens inference, analogy, classification, argument sense and meaning-based logic.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will combine multiple clues, eliminate wrong options and interpret simple data.

Class 8 Mental Ability Olympiad

Learning focus: Advanced Olympiad reasoning with syllogism, non-verbal series, data sufficiency, images and critical statements.

Chapter No.	Chapter Name	Small Teaching Note	Learning Outcome
1	Series Completion	Series work develops rule discovery, number sense, symbol logic and step-by-step prediction.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will combine multiple clues, eliminate wrong options and interpret simple data.
2	Coding and Decoding	Coding-decoding builds symbolic thinking by transforming letters, numbers or figures using a stated or hidden rule.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will combine multiple clues, eliminate wrong options and interpret simple data.

3	Alphabet Test	Alphabet tests strengthen ordering, positional value, sequence tracking and verbal-symbol logic.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will combine multiple clues, eliminate wrong options and interpret simple data.
4	Mathematical Operations	Operation-based reasoning checks students ability to interpret symbols and apply rule changes accurately.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will combine multiple clues, eliminate wrong options and interpret simple data.
5	Puzzle Test	Puzzle tests train multi-condition reasoning, deduction, elimination and organised working habits.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will combine multiple clues, eliminate wrong options and interpret simple data.
6	Calendar Test	Calendar and clock work builds time reasoning, date logic, cyclic pattern awareness and calculation accuracy.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will combine multiple clues, eliminate wrong options and interpret simple data.
7	Number-Ranking-Time Sequence	Ranking tasks train students to compare positions, arrange information and interpret relative order accurately.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will combine multiple clues, eliminate wrong options and interpret simple data.
8	Arithmetical Reasoning	Arithmetical reasoning connects word problems, operations and logic to real-life quantitative situations.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will combine multiple clues, eliminate wrong options and interpret simple data.
9	Syllogism	Syllogism develops formal logic by testing conclusions from given statements without relying on assumptions.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will combine multiple clues, eliminate wrong options and interpret simple data.
10	Non-Verbal Series	Series work develops rule discovery, number sense, symbol logic and step-by-step prediction.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will combine multiple clues, eliminate wrong options and interpret simple data.
11	Analogy	Analogy develops relationship recognition between pairs, figures, words, numbers and ideas.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will combine multiple clues, eliminate wrong options and interpret simple data.
12	Classification	Classification strengthens comparison, grouping and identification of shared properties or the odd-one-out.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will combine multiple clues, eliminate wrong options and interpret simple data.
13	Blood Relations	Blood relations strengthen relationship mapping, family-tree logic and careful interpretation of language.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will combine multiple clues, eliminate wrong options and interpret simple data.
14	Cubes and Dices Test	Cubes and dice develop 3D visualization, face-position logic, rotation and net interpretation.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will combine multiple clues, eliminate wrong options and interpret simple data.
15	Statements	Statement reasoning trains evidence evaluation, assumption spotting and conclusion testing.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will combine multiple clues, eliminate wrong options and interpret simple data.
16	Images	Image reasoning develops visual discrimination, symmetry, sequence tracking and non-verbal logic.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will combine multiple clues, eliminate wrong options and interpret simple data.
17	Data Sufficiency	Data sufficiency and interpretation build judgment about whether information is enough to solve a problem.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will combine multiple clues, eliminate wrong options and interpret simple data.

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Class 9 Mental Ability Olympiad

Learning focus: Advanced Olympiad reasoning with syllogism, non-verbal series, data sufficiency, images and critical statements.

Chapter No.	Chapter Name	Small Teaching Note	Learning Outcome
1	Coding-Decoding	Coding-decoding builds symbolic thinking by transforming letters, numbers or figures using a stated or hidden rule.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
2	Series Completion	Series work develops rule discovery, number sense, symbol logic and step-by-step prediction.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
3	Alphabet Test	Alphabet tests strengthen ordering, positional value, sequence tracking and verbal-symbol logic.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
4	Mathematical Operations	Operation-based reasoning checks students ability to interpret symbols and apply rule changes accurately.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
5	Puzzle Test	Puzzle tests train multi-condition reasoning, deduction, elimination and organised working habits.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
6	Calendar and Clock Test	Calendar and clock work builds time reasoning, date logic, cyclic pattern awareness and calculation accuracy.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
7	Number-Ranking-Time Sequence	Ranking tasks train students to compare positions, arrange information and interpret relative order accurately.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
8	Arithmetical Reasoning	Arithmetical reasoning connects word problems, operations and logic to real-life quantitative situations.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
9	Syllogism	Syllogism develops formal logic by testing conclusions from given statements without relying on assumptions.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
10	Non-Verbal Series	Series work develops rule discovery, number sense, symbol logic and step-by-step prediction.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
11	Analogy	Analogy develops relationship recognition between pairs, figures, words, numbers and ideas.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
12	Classification	Classification strengthens comparison, grouping and identification of shared properties or the odd-one-out.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.

13	Blood Relation	Blood relations strengthen relationship mapping, family-tree logic and careful interpretation of language.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
14	Cubes and Dices Test	Cubes and dice develop 3D visualization, face-position logic, rotation and net interpretation.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
15	Statements of Logical Reasoning	Statement reasoning trains evidence evaluation, assumption spotting and conclusion testing.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
16	Images	Image reasoning develops visual discrimination, symmetry, sequence tracking and non-verbal logic.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
17	Data Sufficiency	Data sufficiency and interpretation build judgment about whether information is enough to solve a problem.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
18	Verbal Reasoning	Verbal reasoning strengthens inference, analogy, classification, argument sense and meaning-based logic.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.

Class 10 Mental Ability Olympiad

Learning focus: Advanced Olympiad reasoning with syllogism, non-verbal series, data sufficiency, images and critical statements.

Chapter No.	Chapter Name	Small Teaching Note	Learning Outcome
1	Coding-Decoding	Coding-decoding builds symbolic thinking by transforming letters, numbers or figures using a stated or hidden rule.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
2	Series Completion	Series work develops rule discovery, number sense, symbol logic and step-by-step prediction.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
3	Alphabet Test	Alphabet tests strengthen ordering, positional value, sequence tracking and verbal-symbol logic.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
4	Mathematical Operations	Operation-based reasoning checks students ability to interpret symbols and apply rule changes accurately.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
5	Puzzle Test	Puzzle tests train multi-condition reasoning, deduction, elimination and organised working habits.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.

6	Calendar and Clock Test	Calendar and clock work builds time reasoning, date logic, cyclic pattern awareness and calculation accuracy.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
7	Number-Ranking-Time Sequence	Ranking tasks train students to compare positions, arrange information and interpret relative order accurately.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
8	Arithmetical Reasoning	Arithmetical reasoning connects word problems, operations and logic to real-life quantitative situations.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
9	Syllogism	Syllogism develops formal logic by testing conclusions from given statements without relying on assumptions.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
10	Non-Verbal Series	Series work develops rule discovery, number sense, symbol logic and step-by-step prediction.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
11	Analogy	Analogy develops relationship recognition between pairs, figures, words, numbers and ideas.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
12	Classification	Classification strengthens comparison, grouping and identification of shared properties or the odd-one-out.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
13	Blood Relations	Blood relations strengthen relationship mapping, family-tree logic and careful interpretation of language.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
14	Cubes and Dices Test	Cubes and dice develop 3D visualization, face-position logic, rotation and net interpretation.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
15	Statements of Logical Reasoning	Statement reasoning trains evidence evaluation, assumption spotting and conclusion testing.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
16	Images	Image reasoning develops visual discrimination, symmetry, sequence tracking and non-verbal logic.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
17	Data Sufficiency	Data sufficiency and interpretation build judgment about whether information is enough to solve a problem.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
18	Verbal Reasoning	Verbal reasoning strengthens inference, analogy, classification, argument sense and meaning-based logic.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.

19	Ranking Test	Ranking tasks train students to compare positions, arrange information and interpret relative order accurately.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.

Class 11 Mental Ability Olympiad

Learning focus: Senior advanced reasoning with data interpretation, abstract logic, evidence evaluation and competitive exam readiness.

Chapter No.	Chapter Name	Small Teaching Note	Learning Outcome
1	Advanced Series and Pattern Analysis	Pattern reasoning trains students to observe repetition, change, position and hidden rules before choosing an answer.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
2	Advanced Coding-Decoding	Coding-decoding builds symbolic thinking by transforming letters, numbers or figures using a stated or hidden rule.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
3	Complex Analytical Puzzles	Puzzle tests train multi-condition reasoning, deduction, elimination and organised working habits.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
4	Statement and Argument Evaluation	Statement reasoning trains evidence evaluation, assumption spotting and conclusion testing.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
5	Syllogism and Logical Deduction	Syllogism develops formal logic by testing conclusions from given statements without relying on assumptions.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
6	Data Sufficiency and Decision Making	Data sufficiency and interpretation build judgment about whether information is enough to solve a problem.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
7	Advanced Blood Relations and Family Trees	Blood relations strengthen relationship mapping, family-tree logic and careful interpretation of language.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
8	Clocks, Calendars and Time Reasoning	Calendar and clock work builds time reasoning, date logic, cyclic pattern awareness and calculation accuracy.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
9	Cubes, Dice and 3D Visualization	Cubes and dice develop 3D visualization, face-position logic, rotation and net interpretation.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
10	Input-Output and Process Reasoning	This chapter strengthens structured reasoning by asking students to observe information, identify the rule, test options and justify the best answer.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.

11	Data Interpretation and Quantitative Reasoning	Data sufficiency and interpretation build judgment about whether information is enough to solve a problem.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
12	Abstract Reasoning and Visual Logic	This chapter strengthens structured reasoning by asking students to observe information, identify the rule, test options and justify the best answer.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
13	Critical Reasoning and Assumptions	This chapter strengthens structured reasoning by asking students to observe information, identify the rule, test options and justify the best answer.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
14	Verbal Reasoning and Inference	Verbal reasoning strengthens inference, analogy, classification, argument sense and meaning-based logic.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.

Class 12 Mental Ability Olympiad

Learning focus: Senior advanced reasoning with data interpretation, abstract logic, evidence evaluation and competitive exam readiness.

Chapter No.	Chapter Name	Small Teaching Note	Learning Outcome
1	Advanced Abstract Reasoning	This chapter strengthens structured reasoning by asking students to observe information, identify the rule, test options and justify the best answer.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
2	High-Order Logical Reasoning	This chapter strengthens structured reasoning by asking students to observe information, identify the rule, test options and justify the best answer.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
3	Complex Puzzle Sets and Arrangements	Puzzle tests train multi-condition reasoning, deduction, elimination and organised working habits.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
4	Data Interpretation and Multi-Source Reasoning	Data sufficiency and interpretation build judgment about whether information is enough to solve a problem.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
5	Decision Making and Data Sufficiency	Data sufficiency and interpretation build judgment about whether information is enough to solve a problem.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
6	Critical Argument Analysis	This chapter strengthens structured reasoning by asking students to observe information, identify the rule, test options and justify the best answer.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
7	Advanced Syllogism and Venn Reasoning	Syllogism develops formal logic by testing conclusions from given statements without relying on assumptions.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.

8	Coding-Decoding and Algorithmic Patterns	Pattern reasoning trains students to observe repetition, change, position and hidden rules before choosing an answer.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
9	Spatial Reasoning and 3D Visualization	Spatial understanding builds position vocabulary, orientation, size comparison and mental movement of objects.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
10	Quantitative Aptitude Reasoning	This chapter strengthens structured reasoning by asking students to observe information, identify the rule, test options and justify the best answer.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
11	Probability-Linked Logical Reasoning	This chapter strengthens structured reasoning by asking students to observe information, identify the rule, test options and justify the best answer.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
12	Case-Based Analytical Reasoning	This chapter strengthens structured reasoning by asking students to observe information, identify the rule, test options and justify the best answer.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
13	Research Aptitude and Evidence Evaluation	This chapter strengthens structured reasoning by asking students to observe information, identify the rule, test options and justify the best answer.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.
14	Competitive Exam Readiness Review	This chapter strengthens structured reasoning by asking students to observe information, identify the rule, test options and justify the best answer.	Students will solve age-appropriate questions with clear logic, accuracy and confidence. They will handle multi-step, abstract, data-based and exam-style reasoning under time discipline.

3. Assessment Blueprint

Area	Recommended Weight	Assessment Evidence
Pattern, series and coding	25-30%	Students identify rules, decode symbols and complete number/letter/figure sequences.
Spatial and non-verbal reasoning	20-25%	Students solve shapes, embedded figures, mirror/water images, cubes, dice and visual series.
Logical and verbal reasoning	20-25%	Students solve analogy, classification, ranking, syllogism, statements and verbal inference.
Quantitative and data reasoning	15-20%	Students interpret operations, calendars, time, arithmetic reasoning, data sufficiency and graphs.
Complex puzzles and strategy	10-15%	Students combine multiple conditions, eliminate options and choose efficient solution paths.

4. Teacher and Parent Implementation Notes

- Teach the reasoning method before timed practice: observe, identify the rule, test, eliminate and confirm.
- Keep a chapter-wise error log so that improvement is visible beyond overall marks.
- Use visual manipulatives in early grades and gradually move toward abstract symbolic reasoning.
- For senior grades, use mixed practice sets, data questions and explanation-based review.
- Encourage calm and honest problem solving rather than speed-only guessing.

Reference Basis for Global Alignment

Reference Area	How it supports SCO IMAO
OECD PISA Mathematics Framework	Supports mathematical reasoning, problem solving, real-world contexts, computational thinking, pattern recognition and interpretation.
OECD PISA Creative Thinking Framework	Supports flexible idea generation, evaluation, improvement, social problem solving and scientific problem solving.
Cambridge Thinking Skills	Supports transferable problem solving, critical thinking, evidence evaluation and reasoned decisions.
Future-skill readiness	Connects analytical thinking, creative thinking, attention to detail and resilience to future academic and work readiness.