Math Olympiad Syllabus Class 7

1. Integers
   - Integers and their addition
   - Subtraction of integers
   - Understanding absolute value
   - Integers on number lines
   - Absolute value and opposite integers
   - Compare and order integers
   - Integer inequalities with absolute values
   - Evaluate numerical expressions involving integers
   - Compare temperature above and below zero degree celsius
   - Multiplication and division of integers

2. Fractions and decimals
   - Compare and order decimals
   - Decimal number lines
   - Round decimals
   - Equivalent fractions
   - Least common denominator
   - Round mixed numbers
   - Convert Fractions and mixed numbers to decimals
   - Convert between mixed numbers and improper fractions
   - Compare mixed numbers and improper fractions
   - Multiplication of decimal numbers
   - Division of decimal numbers

3. Data handling
   - Collection and organization of Data,
   - Mean & Range
   - Mode
   - Median
   - Bar graphs
   - Chance and Probability

4. Simple Equations
   - Setting up an Equation
   - Solving an Equation by Balancing
   - Solving an Equation by Transposing
   - Linear Equations in the Real World

5. Lines and angles
   - Interior angles of polygons
   - Lines, line segments, and rays
   - Parallel, perpendicular, and intersecting lines
   - Complementary, Supplementary, Vertical, and Adjacent angles
   - Identify alternate interior and alternate exterior angles

6. The triangle and its properties
   - Lines in the Triangle: Median, Altitude
   - Sum of the lengths of two sides of a triangle
   - Difference between lengths of two sides of a triangle
   - Classification of triangles based on sides and on angles
   - Properties of Triangles
   - Right Angled Triangles and Pythagoras Theorem
   - Triangles - Application of properties

7. Rational numbers
   - Rational numbers on number lines
   - Comparing rational numbers
   - Ordering rational numbers
   - Adding and subtracting rational numbers
   - Multiplying and dividing rational numbers

8. Practical Geometry
   - Plane and Point
   - Lines, Segments and rays
   - Parallel, perpendicular and intersecting lines
   - Distance between two points
   - Quadrants and axes
   - Line Bisection
   - Angle Bisector

- Calculating Supplementary and complementary angles

9. Perimeter and area
   - Perimeter and Area of rectangles and parallelograms
   - Area of triangles and trapezoids
   - Circumference and area of circles, Semicircle and quarter circles
   - Area of compound figures
   - Area between two shapes

10. Algebraic expression
   - Identifying expressions and equations
   - Writing algebraic expressions
   - Evaluating expressions
   - Equivalent expressions
   - Simplifying expressions
   - Expanding expressions
   - Factoring expressions
   - Solving equations
   - Multi-step equations

11. Exponents and power
   - Understanding exponents
   - Evaluate exponents
   - Addition and subtraction of exponents
   - Solve equations with variable exponents
   - Laws of exponents
   - Large numbers in Scientific/ Standard Notation

12. Visualising solid shapes
   - Elements of 3D shapes and their nets
   - Drawing Solids on a flat surface
   - Viewing Different Sections Of A Solid