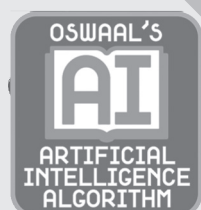




**Latest Edition NCERT
Textbook Questions
Fully Solved**

NCERT & CBSE SYLLABUS 2019-2020



With Most Likely
Questions generated
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CLASS 7

MATHEMATICS

OSWAAL
**EXAM
TOOLS**

- Strictly as per the NCERT and latest CBSE Curriculum
- Chapterwise introduction to enable Quick Revision
- Periodic Tests for better examination preparation
- NCERT Textbook Questions-Fully solved
- Typology of questions includes
- MCQs, VSA, SA and Long Answer Types for examination success
- Flowcharts included for clarity of concepts
- 'Mind maps' for improved learning
- Suggested online videos to aid in depth study

To know about more useful books for class-7 [click here](#)

SYLLABUS

Mathematics Class VII

Number System

(50 hrs)

(i) Knowing our Numbers : Integers

- Multiplication and division of integers (through patterns). Division by zero is meaningless
- Properties of integers (including identities for addition & multiplication, commutative, associative, distributive) (through patterns). These would include examples from whole numbers as well. Involve expressing commutative and associative properties in a general form. Construction of counter examples, including some by children. Counter examples like subtraction is not commutative.
- Word problems including integers (all operations)

(ii) Fractions and rational numbers :

- Multiplication of fractions
- Fraction as an operator
- Reciprocal of a fraction
- Division of fractions
- Word problems involving mixed fractions
- Introduction to rational numbers (with representation on number line)
- Operations on rational numbers (all operations)
- Representation of rational number as a decimal.
- Word problems on rational numbers (all operations)
- Multiplication and division of decimal fractions
- Conversion of units (length & mass)
- Word problems (including all operations)

(iii) Powers :

- Exponents only natural numbers.
- Laws of exponents (through observing patterns to arrive at generalisation.)

(i) $a^m \text{ and } a^n \Rightarrow a^{m+n}$

(ii) $(a^m)^n = a^{mn}$

(iii) $a^m \div a^n = a^{m-n}$, where $m - n \in N$

Algebra

(20 hrs)

Algebraic Expressions :

- Generate algebraic expressions (simple) involving one or two variables
- Identifying constants, coefficient, powers
- Like and unlike terms, degree of expressions e.g., x^2y etc. (exponent ≤ 3 , number of variables)
- Addition, subtraction of algebraic expressions (coefficients should be integers).
- Simple linear equations in one variable (in contextual problems) with two operations (avoid complicated coefficients)

Ratio and Proportion

(20 hrs)

- Ratio and proportion (revision)
- Unitary method continued, consolidation, general expression.
- Percentage- an introduction.
- Understanding percentage as a fraction with denominator 100
- Converting fractions and decimals into percentage and vice-versa.
- Application to profit and loss (single transaction only)
- Application to simple interest (time period in complete years).

Geometry

(60 hrs)

(i) Understanding shapes :

- Pairs of angles (linear, supplementary, complementary, adjacent, vertically opposite) (verification and simple proof of vertically opposite angles)
- Properties of parallel lines with transversal (alternate, corresponding, interior, exterior angles)

(ii) Properties of triangles :

- Angle sum property (with notions of proof & verification through paper folding, proofs using property of parallel lines, difference between proof and verification.)
- Exterior angle property
- Sum of two sides of a triangle is its third side
- Pythagoras Theorem (Verification only)

(iii) Symmetry :

- Recalling reflection symmetry
- Idea of rotational symmetry, observations of rotational symmetry of 2-D objects. (90° , 120° , 180°)
- Operation of rotation through 90° and 180° of simple figures.
- Examples of figures with both rotation and reflection symmetry (both operations)
- Examples of figures that have reflection and rotation symmetry and vice-versa

(iv) Representing 3-D in 2-D :

- Drawing 3-D figures in 2-D showing hidden faces.
- Identification and counting of vertices, edges, faces, nets (for cubes cuboids, and cylinders, cones).
- Matching pictures with objects (Identifying names)
- Mapping the space around approximately through visual estimation.

(v) Congruence :

- Congruence through superposition (examples blades, stamps, etc.)
- Extend congruence to simple geometrical shapes e.g. triangles, circles.
- Criteria of congruence (by verification) SSS, SAS, ASA, RHS

(vi) Construction :

(Using scale, protractor, compass)

- Construction of a line parallel to a given line from a point outside it. (Simple proof as remark with the reasoning of alternate angles)

- Construction of simple triangles. Like given three sides, given a side and two angles on it, given two sides and the angle between them.

Mensuration

(15 hrs)

- Revision of perimeter, Idea of, Circumference of Circle

Area

Concept of measurement using a basic unit area of a square, rectangle, triangle, parallelogram and circle, area between two rectangles and two concentric circles.

Data handling (15 hrs)

- (i) Collection and organisation of data – choosing the data to collect for a hypothesis testing.
- (ii) Mean, median and mode of ungrouped data – understanding what they represent.
- (iii) Constructing bargraphs
- (iv) Feel of probability using data through experiments. Notion of chance in events like tossing coins, dice etc. Tabulating and counting occurrences of 1 through 6 in a number of throws. Comparing the observation with that for a coin. Observing strings of throws, notion of randomness.