

Chapter 1: Large Numbers Around Us

Topic

Large Numbers, Place Value, Comparison and Estimation

Learning Objectives

- To understand the Indian number system and place value of large numbers.
- To read, write and compare large numbers.
- To estimate and apply numbers in real-life situations.

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- Use of place value charts and number cards.
- Activity based on population, distance and financial data.
- Data collection project using newspapers and internet resources.
- Linkage with Social Science through census and population data.
- Preparation of creative number charts.

Expected Learning Outcomes

Students will be able to:

- Read and write large numbers correctly.
- Compare and arrange numbers.
- Use estimation in practical situations.

Assignment and Assessment

- Worksheet on place value and comparison.
- Data interpretation questions.
- Class quiz and oral assessment.

Remedial Measures

- Extra practice using place value charts.
- Peer learning activities.
- Individual guidance for weak learners.

Chapter 2: Arithmetic Expressions

Topic

Numerical Expressions, Operations and Simplification

Learning Objectives

- To understand formation of arithmetic expressions.
- To apply rules of operations and brackets.
- To solve numerical expressions systematically.

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- Expression card activities.
- Number puzzles and group discussions.
- Application through shopping bills and money calculations.
- Logical reasoning activities.

Expected Learning Outcomes

Students will be able to:

- Form and simplify arithmetic expressions.
- Explain the steps involved in solving expressions.

Assignment and Assessment

- Practice exercises.
- Competency-based questions.
- Short test.

Remedial Measures

- Step-by-step explanation.
 - Additional worksheets.
 - Re-teaching of basic operations.
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Chapter 3: A Peek Beyond the Point

Topic

Decimals and Their Operations

Learning Objectives

- To understand decimal place value.
- To compare and perform operations on decimals.
- To apply decimals in daily life.

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- Activities using money and measurements.
- Decimal number line activities.
- Linkage with Science through measurement.
- Creation of decimal charts.

Expected Learning Outcomes

Students will be able to:

- Compare decimals.
- Add and subtract decimals.
- Apply decimal concepts practically.

Assignment and Assessment

- Decimal worksheets.
- Activity-based assessment.
- Class test.

Remedial Measures

- Use of visual aids.
- Number line practice.
- Additional examples.

Chapter 4: Expressions Using Letter-Numbers

Topic

Variables, Algebraic Expressions and Patterns

Learning Objectives

- To introduce variables and algebraic expressions.
- To identify patterns and generalise relationships.

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- Pattern finding activities.
- Algebra tiles and cards.
- Art integration through decorative patterns.
- Linkage with logical reasoning and coding concepts.

Expected Learning Outcomes

Students will be able to:

- Identify variables.
- Form algebraic expressions.
- Generalise mathematical patterns.

Assignment and Assessment

- Expression formation tasks.
- Pattern-based questions.
- Quiz.

Remedial Measures

- Use concrete examples.
- Provide guided practice.
- Individual support.

Chapter 5: Parallel and Intersecting Lines

Topic

Lines, Angles and Geometrical Relationships

Learning Objectives

- To identify parallel and intersecting lines.
- To understand angles formed by lines.

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- Drawing activities using ruler and protractor.
- Geometrical designs and patterns.
- Link with architecture and art.

Expected Learning Outcomes

Students will be able to:

- Draw and identify different types of lines.
- Explain geometrical relationships.

Assignment and Assessment

- Diagram-based questions.
- Practical geometry activity.
- Worksheet.

Remedial Measures

- More construction practice.
 - Use of models and demonstrations.
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Chapter 6: Number Play

Topic

Factors, Multiples, Divisibility and Number Patterns

Learning Objectives

- To understand factors and multiples.
- To apply divisibility rules.
- To explore number patterns.

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- Number games and puzzles.
- Group competitions.
- Pattern exploration activities.

Expected Learning Outcomes

Students will be able to:

- Find factors and multiples.
- Apply divisibility rules.
- Solve number-based problems.

Assignment and Assessment

- Puzzle activities.
- Worksheets.
- Unit test.

Remedial Measures

- Factor tree practice.
 - Revision exercises.
 - Peer support.
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Chapter 7: A Tale of Three Intersecting Lines

Topic

Angles Formed by Intersecting Lines

Learning Objectives

- To understand relationships between angles.
- To solve problems based on intersecting lines.

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- Paper folding activities.
- Angle measurement experiments.
- Symmetry-based art activities.

Expected Learning Outcomes

Students will be able to:

- Identify different angle relationships.
- Solve geometrical problems.

Assignment and Assessment

- Geometry worksheets.
- Construction activities.
- Written assessment.

Remedial Measures

- Re-teaching with models.
- Extra practice diagrams.

Chapter 8: Working with Fractions

Topic

Fractions, Equivalent Fractions and Operations

Learning Objectives

- To understand fractions and their applications.
- To compare and perform operations on fractions.

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- Fraction strips and paper folding.
- Real-life sharing activities.
- Link with cooking measurements.
- Fraction-based art patterns.

Expected Learning Outcomes

Students will be able to:

- Identify equivalent fractions.
- Perform operations on fractions.
- Apply fractions in real situations.

Assignment and Assessment

- Fraction worksheets.
- Activity records.
- Class test.

Remedial Measures

- Use of visual fraction models.
- Extra practice questions.
- Individual support.

General Remedial Strategies

- Continuous assessment to identify learning gaps.
- Level-based worksheets.

- Peer learning and group activities.
- Regular revision sessions.
- Use of teaching-learning materials for better understanding.

Chapter: Geometric Twins

Topic:

Understanding symmetry, shapes, reflections, and properties of geometric figures.

Learning Outcome:

- Students will identify symmetrical figures and lines of symmetry.
- Students will understand relationships between different geometric shapes.
- Students will develop visualization and reasoning skills.

Pedagogical Strategy:

- Activity-based learning using paper folding and mirror reflection activities.
- Group discussion and exploration of real-life symmetrical objects.
- Use of drawings and geometrical tools.

Expected Learning Outcome:

Students will be able to recognize, draw, and explain symmetry in geometric figures.

Assignment and Assessment:

- Draw symmetrical and non-symmetrical figures.
- Identify lines of symmetry in given shapes.
- Oral questioning and worksheet assessment.

Remedial Measure:

- Provide additional practice with simple shapes.
 - Use concrete objects and visual examples for better understanding.
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Chapter: Operations with Integers

Topic:

Addition, subtraction, multiplication, and division of integers.

Learning Outcome:

- Students will understand rules of operations with positive and negative integers.
- Students will solve problems involving integers.

Pedagogical Strategy:

- Use number line activities to demonstrate integer operations.
- Connect concepts with real-life situations like temperature and money transactions.
- Practice through guided examples.

Expected Learning Outcome:

Students will accurately perform operations on integers and apply them in daily-life problems.

Assignment and Assessment:

- Solve exercise questions based on integer operations.
- Conduct a short quiz.
- Check classwork and homework.

Remedial Measure:

- Provide extra practice worksheets.
 - Revise integer rules using number lines.
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Chapter: Finding Common Ground

Topic:

Understanding common factors, common multiples, and related concepts.

Learning Outcome:

- Students will find factors and multiples of numbers.
- Students will understand the importance of common factors and multiples.

Pedagogical Strategy:

- Use factor trees and activity-based examples.
- Encourage peer learning and problem-solving discussions.

Expected Learning Outcome:

Students will find common factors and multiples and apply them in mathematical situations.

Assignment and Assessment:

- Find factors and multiples of given numbers.
- Solve word problems.
- Worksheet-based assessment.

Remedial Measure:

- Practice basic multiplication facts.
 - Provide step-by-step examples.
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Chapter: Another Peek Beyond the Point

Topic:

Understanding decimals and their applications.

Learning Outcome:

- Students will understand decimal numbers and place values.
- Students will perform operations involving decimals.

Pedagogical Strategy:

- Use money, measurement, and real-life examples.
- Use place value charts and activities.

Expected Learning Outcome:

Students will compare, add, subtract, and use decimals confidently.

Assignment and Assessment:

- Solve decimal-based questions.
- Convert and compare decimal values.
- Class test.

Remedial Measure:

- Revise place value concepts.
 - Provide additional practice exercises.
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Chapter: Connecting the Dot

Topic:

Understanding patterns, relationships, and mathematical connections.

Learning Outcome:

- Students will identify patterns and relationships.
- Students will develop logical thinking and reasoning skills.

Pedagogical Strategy:

- Pattern-based activities and puzzles.
- Discussion and exploration of mathematical connections.

Expected Learning Outcome:

Students will recognize patterns and use logical reasoning to solve problems.

Assignment and Assessment:

- Complete pattern-based exercises.

- Solve reasoning questions.
- Activity evaluation.

Remedial Measure:

- Provide simpler pattern activities.
 - Support students through guided practice.
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Chapter: Construction and Tiling

Topic:

Geometrical constructions, shapes, and tessellations.

Learning Outcome:

- Students will use geometrical instruments correctly.
- Students will understand tiling patterns and properties of shapes.

Pedagogical Strategy:

- Demonstration of constructions using ruler and compass.
- Hands-on tiling activities with paper cut-outs.

Expected Learning Outcome:

Students will construct geometric figures and create tiling patterns.

Assignment and Assessment:

- Construct given geometrical figures.
- Create a tiling design.
- Evaluate accuracy and creativity.

Remedial Measure:

- Provide guided practice with instruments.
 - Repeat construction steps with individual support.
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Chapter: Finding Unknown

Topic:

Understanding variables, equations, and solving unknown quantities.

Learning Outcome:

- Students will identify unknown values.

- Students will form and solve simple equations.

Pedagogical Strategy:

- Use balance method for explaining equations.
- Relate equations to everyday problem situations.
- Encourage step-by-step problem solving.

Expected Learning Outcome:

Students will solve simple equations and apply algebraic thinking.

Assignment and Assessment:

- Solve equations with unknown values.
- Word problem practice.
- Class test and notebook checking.

Remedial Measure:

- Revise basic arithmetic operations.
- Provide simplified equations and extra worksheets.