

## Detailed Contents

Each chapter contains different exercises which include the following:

- Multiple Choice Questions
- Let's Evaluate (long and short calculations)
- Values and Life skills
- Exemplar Problems
- Solve Mentally (True or False/Fill in the Blanks/Answer in One Word or a Line)
- Thinking Skills
- NCERT Textbook Questions

Chapter	Content	Tasks to Perform
1. Integers	Integers, Modulus or Absolute Value, Representation of Integers on a Number Line, Properties of Addition and Subtraction of Integers, Multiplication of Integers, Multiplication of Integers on a Number Line, Properties of Multiplication of Integers, Division of Integers, Properties of Division of Integers, Order of Operations and Use of Brackets	<ul style="list-style-type: none"> <li>• Integrating Fun and Facts (The barrel operators) — Conceptual Understanding, Thinking Skills</li> </ul>
2. Fractions	Types of Fractions (Proper, Improper, Mixed, Like, Unlike and Unit), Multiplication of Fractions, Value of the Product, Division of Fractions, Order of Operations	<ul style="list-style-type: none"> <li>• Maths Lab Activity (Multiplication of a fraction by a whole number) — Application of Concepts</li> <li>• Maths Lab Activity (Fraction multiplied by a fraction) — Application of Concepts</li> <li>• Reason It Out! — Thinking Skills, Logical Reasoning</li> <li>• Grid Fun — Application of Knowledge, Observation Skills</li> <li>• Group Activity (Fun with fractions) — Team Spirit, Learning Skills, Application of Concepts</li> </ul>
3. Decimals	Expanded Form of Decimals, Decimal Places, Like and Unlike Decimals, Comparison of Decimals, Use of Decimals in Money, Length and Mass, Addition and Subtraction of Decimals, Multiplication of Decimal Numbers by 10, 100, 1,000, etc., Multiplication of a Decimal Number by a Whole Number, Multiplication of Decimal Number by Another Decimal Number, Division of Decimal Numbers by 10, 100, 1,000, etc., Division of a Decimal Number by a Non-Zero Whole Number, Division of a Decimal Number by Another Decimal Number	<ul style="list-style-type: none"> <li>• Group Project (Plug in the missing decimals) — Team Spirit, Reasoning, Analysis</li> <li>• Reason It Out! — Reasoning, Analysis, Logical Reasoning</li> <li>• Changing Fractions to Decimals — Observation, Understanding, Interpretation</li> </ul>
4. Rational Numbers	Rational Numbers, Positive and Negative Rational Numbers, Equivalent Rational Numbers, Representation of Rational Numbers on a Number Line, Standard Form of Rational Numbers, Comparison of Rational Numbers, Rational Numbers between Two Rational Numbers, Absolute Value of a Rational Number, Addition of Rational Numbers, Additive Inverse of a Rational Number, Subtraction of Rational Numbers, Multiplication of Rational Numbers, Reciprocal of a Rational Number, Division of Rational Numbers, Decimal Representation of Rational Numbers	<ul style="list-style-type: none"> <li>• Maths Lab Activity (Worksheet) — Thinking Skills, Application of Knowledge</li> <li>• Exploring Extended Concepts — Conceptual Understanding, Analytical Thinking</li> <li>• Reason It Out! — Critical Thinking, Analytical Thinking</li> <li>• Brainstorming — Logical Thinking, Reasoning</li> </ul>
5. Exponents and Powers	Exponents, Laws of Exponents, Scientific Notation of Numbers	<ul style="list-style-type: none"> <li>• Try It Out! — Application of Knowledge</li> </ul>
6. Algebraic Expressions	Introduction to Algebraic Expressions, Addition and Subtraction of Algebraic Expressions, Value of an Expression, Use of Algebraic Expressions	<ul style="list-style-type: none"> <li>• Brainstorming — Application of Knowledge, Application of Concepts</li> </ul>
7. Linear Equations in One Variable	Equation, Linear Equation, Solution of a Linear Equation, Trial and Error Method, Rules for Solving an Equation, Transposing a Term of an Equation, Applications of Linear Equations to Practical Situations	<ul style="list-style-type: none"> <li>• An Age Old Trick — Logical Thinking, Reasoning</li> </ul>
8. Percentage and Its Applications	Ratio, Proportion, Percentage, Percentage When Total Number of Items is 100, Percentage When Total is Not 100, Converting Fractional Numbers to Percentage, Converting Decimals to Percentage, Converting Percentage to Fractions or Decimals, Uses of Percentage, Converting Ratio into Percentage, Increase or Decrease as Percent, Other Applications of Percentage— Profit and Loss, Simple Interest	<ul style="list-style-type: none"> <li>• Project Work — Data Handling, Application of Concepts, Analytical Thinking, Understanding, Verification</li> </ul>

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Chapter	Content	Tasks to Perform
9. Lines and Angles	Related Angles—Complementary Angles, Supplementary Angles, Adjacent Angles, Linear Pair and Vertically Opposite Angles, Intersecting Lines, Transversal, Angles made by a Transversal, Parallel Lines Cut by a Transversal	<ul style="list-style-type: none"> <li>A Challenge!               <ul style="list-style-type: none"> <li>— Observation Skills, Analytical Thinking, Critical Thinking</li> </ul> </li> </ul>
10. Properties of Triangles	Classification of Triangles According to Sides and Angles, Medians and Altitudes of a Triangle, Exterior Angle of a Triangle and Its Relation with Interior Opposite Angles, Sum of Three Angles of a Triangle, Sum of the Lengths of Two Sides of a Triangle, Pythagoras Theorem, Converse of Pythagoras Theorem, Pythagorean Triplet	<ul style="list-style-type: none"> <li>Pair Activity (Verify exterior angle property)               <ul style="list-style-type: none"> <li>— Conceptual Understanding, Logical Thinking</li> </ul> </li> <li>Pair Activity (Verify angle sum property)               <ul style="list-style-type: none"> <li>— Analytical Thinking, Evaluation</li> </ul> </li> <li>Maths Lab Activity (Verify sum of lengths of two sides is greater than third side)               <ul style="list-style-type: none"> <li>— Learning Skills, Observation, Evaluation</li> </ul> </li> <li>Maths Lab Activity (Verify Pythagoras theorem)               <ul style="list-style-type: none"> <li>— Learning Skills, Interpretation</li> </ul> </li> </ul>
11. Congruence of Triangles	Congruent Figures, Congruence of Line Segments and Angles, Congruency of Triangles (SSS, SAS, ASA and RHS criteria)	<ul style="list-style-type: none"> <li>Maths Lab Activity (SSS congruency and rigidity of triangles)               <ul style="list-style-type: none"> <li>— Learning Skills, Observation, Creative Thinking, Analytical Thinking</li> </ul> </li> </ul>
12. Constructions	Construction of a Line Parallel to a given Line through a Point Not on It, Construction of Triangles (SSS, SAS, ASA and RHS criterions)	<ul style="list-style-type: none"> <li>Maths Lab Activity (Construction of an equilateral triangle by paper folding)               <ul style="list-style-type: none"> <li>— Application of Concepts, Critical Thinking, Observation, Understanding</li> </ul> </li> </ul>
13. Reflection and Rotational Symmetry	Line Symmetry, Lines of Symmetry of a Line Segment, Line, Angle, Isosceles Triangle, Rectangle, Rhombus, Kite, Isosceles Trapezium and a Semicircle, Lines of Symmetry of Some Regular Polygons, Lines of Symmetry and Reflection, Translation Symmetry, Rotation, Angle of Rotation, Rotational Symmetry, Order of Rotational Symmetry, Line Symmetry and Rotational Symmetry	<ul style="list-style-type: none"> <li>Maths Lab Activity (To find the rotational symmetry of a parallelogram)               <ul style="list-style-type: none"> <li>— Application of Concepts, Creative Thinking, Observation, Analytical Thinking, Deductive Reasoning</li> </ul> </li> <li>Fun with Reflection               <ul style="list-style-type: none"> <li>— Understanding, Creative Thinking, Thinking Skills, Presentation</li> </ul> </li> </ul>
14. Perimeter and Area	Squares and Rectangles, Triangles on Same Base and between Same Parallel Lines, Circumference, Area of a Circle, Conversion of Units, Area of Some More Plane Figures	<ul style="list-style-type: none"> <li>Maths Lab Activity (Area of a parallelogram and triangle)               <ul style="list-style-type: none"> <li>— Application of Concepts, Learning Skills, Observation</li> </ul> </li> <li>Maths Lab Activity (Ratio of circumference of a circle to its diameter)               <ul style="list-style-type: none"> <li>— Analytical Thinking, Deductive Reasoning</li> </ul> </li> <li>Polygon Puzzle               <ul style="list-style-type: none"> <li>— Conceptual Understanding</li> </ul> </li> </ul>
15. Visualizing Solid Shapes	Faces, Edges and Vertices, Nets of 3-D Shapes, Drawing Solids on a Flat Surface—Oblique Sketch and Isometric Sketch, Visualizing Solid Objects, Viewing Different Sections of a Solid—Cross-Section by Slicing, Kitchen Play and Shadow Play	<ul style="list-style-type: none"> <li>Pair Activity (Visualizing a cube and cross-section of a cube by a plane)               <ul style="list-style-type: none"> <li>— Creative Thinking, Critical Thinking, Analytical Thinking</li> </ul> </li> <li>Group Activity (To form a three-layered structure using cubes)               <ul style="list-style-type: none"> <li>— Team Spirit, Thinking Skills, Logical Reasoning</li> </ul> </li> </ul>
16. Data Handling	Collection of Relevant Data, Organization of Data, Measures of Central Tendency—Mean, Median and Mode, Bar Graphs, Multiple Bar Graphs	<ul style="list-style-type: none"> <li>Maths Lab Activity (To collect data, convert it into frequency distribution and find central tendencies)               <ul style="list-style-type: none"> <li>— Data Handling, Application of Concepts</li> </ul> </li> </ul>
17. Probability	Probability, Terms Related to Probability—Random Experiment, Trial, Sample Space and Event, Experimental Probability	<ul style="list-style-type: none"> <li>Maths Lab Activity               <ul style="list-style-type: none"> <li>— Creative Thinking, Application of Concepts</li> </ul> </li> <li>Project Work               <ul style="list-style-type: none"> <li>— Observation, Conceptual Understanding, Interpretation</li> </ul> </li> </ul>