

DETAILED CONTENTS

Each chapter of the book consists of the following exercises in various forms

BE PROMPT

- Filling in the blanks
- True or False
- Multiple choice questions (MCQs)
- Identifying the error(s) in the given statements
- Matching the columns

SHORT AND PRECISE

- Flowcharts
- Giving reasons
- Short answer questions

AT LENGTH

- Explaining the terms
- Differentiating between concepts
- Long answer questions
- Identifying the error(s)

Chapter Name	Details of Contents	Activities	Some More Assessment Tools
1. Introduction to Chemistry	<ul style="list-style-type: none"> • CHEMISTRY—MEANING • DEVELOPMENT OF CHEMISTRY—A HISTORICAL PERSPECTIVE Alchemy • NOTABLE CHEMISTS—Antoine Lavoisier, Dmitri Mendeleev, John Dalton, J.J. Thomson, Ernest Rutherford, Niels Bohr • IMPORTANCE OF CHEMISTRY • FOOD AND CHEMISTRY—Food and Agriculture, Food Processing • COSMETICS AND CHEMISTRY • CLOTHING AND CHEMISTRY • MEDICINES AND CHEMISTRY • CHEMICALS IN INDUSTRIES 	<ol style="list-style-type: none"> 1.1 To identify the chemicals in various products used in daily life 1.2 To create a PowerPoint presentation on Development of Chemistry 1.3 To prepare a PowerPoint presentation on ‘The Great Chemists’ 1.4 To create a chart on food preservatives 1.5 To find the chemicals present in commonly used cosmetics 1.6 To create a presentation on the role of chemistry in clothing industry 1.7 To conduct a discussion on the role of medicine in modern life 	<ul style="list-style-type: none"> • Observe and Perform: Observing the image of scientist and answering the questions • Apply Your Learning: Questions based on thinking skills • Life Skills: Questions based on life skills • Integrate Your Learning: Integrating learning with Language, Biology and Geography • Projects and Activities: Making a web chart and organizing a trip • Review Your Learning: Worksheet
2. Elements, Compounds and Mixtures	<ul style="list-style-type: none"> • ELEMENTS Characteristics of an Element, Classification of Elements • SYMBOLS OF ELEMENTS—Writing Symbols of an Element • COMPOUNDS—Characteristics of a Compound • ATOMS AND MOLECULES—Atom, Molecule • USES OF SOME ELEMENTS AND COMPOUNDS • MIXTURES—Characteristics of a Mixture, Types of Mixtures, Differences between Compounds and Mixtures • SEPARATION OF MIXTURES Need for Separation of Mixtures, Principle of Separation 	<ol style="list-style-type: none"> 2.1 To study the symbols of first 20 elements of the periodic table 2.2 To create a presentation on carbon and its compounds 2.3 To identify mixtures that we come across in our daily lives 2.4 To show that properties of a mixture depend on the quantity of the constituents present 2.5 To separate a mixture of sand and water by sedimentation and decantation 2.6 To separate chalk powder and water by filtration 2.7 To separate salt and water by evaporation 2.8 To separate common salt and ammonium chloride 	<ul style="list-style-type: none"> • Observe and Perform: Observing the image and answering the questions • Apply Your Learning: Questions based on thinking skills • Life Skills: Questions based on life skills • Integrate Your Learning: Integrating learning with Geography • Projects and Activities: Making a chart, making a model and hands on activity • Review Your Learning: Worksheet
3. The Nature of Matter	<ul style="list-style-type: none"> • PROPERTIES OF MATTER Matter has Mass, Matter Occupies Space, Differences between Mass and Weight • STATES OF MATTER—Composition and Properties of Matter • EXPLANATION FOR THE EXISTENCE OF THREE STATES OF MATTER—Solids, Liquids, Gases, Reasons for Differences in Properties of Three States of Matter • EFFECTS OF HEAT ON MATTER Change in States of Matter, Expansion of Matter, Chemical Change on Heating 	<ol style="list-style-type: none"> 3.1 To create a PowerPoint presentation on ‘Classification of Matter’ 3.2 To list the substances that can be made using the given materials 3.3 To observe that matter has mass 3.4 To show that matter has mass 3.5 To show that matter occupies space 3.6 To show that matter offers resistance 3.7 To observe that solids have a definite shape 3.8 To observe that solids have a definite volume 3.9 To observe that liquids have a definite volume but no fixed shape 3.10 To show that gases can be compressed easily whereas solids cannot be compressed and liquids can be compressed a little 3.11 To observe change in state of matter 3.12 To show that a solid expands on heating and contracts on cooling 3.13 To show that a liquid expands on heating and contracts on cooling 3.14 To show expansion of gas on heating 	<ul style="list-style-type: none"> • Observe and Perform: Observing the image and answering the questions • Apply Your Learning: Questions based on thinking skills • Life Skills: Questions based on life skills (cooperation and working together, creative thinking, decision-making and conclusion drawing) • Integrate Your Learning: Integrating learning with Language and Physics • Projects and Activities: Making a model and classifying the objects • Review Your Learning: Worksheet

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4. Water	<ul style="list-style-type: none"> • OCCURRENCE OF WATER • SOURCES OF WATER—Rainwater, Surface Water, Groundwater • STATES OF WATER—Water Cycle, Change in Density and Volume of Water with Temperature • IMPORTANCE OF WATER • WATER—A UNIVERSAL SOLVENT Solute, Solvent and Solution • POTABLE WATER Diseases Caused by Contaminated Water or Waterborne Diseases • PURIFICATION OF WATER—Sedimentation and Decantation, Loading, Filtration, Chlorination, Boiling, Aeration, Ozonization, Water Purifiers and RO System, Distillation • IMPORTANCE OF WATER FOR SUSTENANCE OF LIFE ON EARTH Need to Conserve Water • WATER POLLUTION— Causes of Water Pollution, Prevention of Water Pollution • FLOODS AND DROUGHTS— Flood, Drought 	<p>4.1 To find the water content in different food items</p> <p>4.2 To show that plants require fresh water</p> <p>4.3 To study the presence of dissolved impurities in natural water</p> <p>4.4 To show that ice is lighter than water</p> <p>4.5 To show that water expands on freezing</p> <p>4.6 To find application of specific capacity of water and of latent heat of fusion</p> <p>4.7 To observe the effect of stirring on the formation of a solution</p> <p>4.8 To observe the effect of size of solute particles on the formation of a solution</p> <p>4.9 To observe the effect of increase in temperature on the formation of a solution</p> <p>4.10 To prepare a saturated solution of salt and water</p> <p>4.11 To separate salt from salt solution by evaporating till the water dries</p>	<ul style="list-style-type: none"> • Observe and Perform: Observing the image and answering the questions • Apply Your Learning: Questions based on thinking skills • Life Skills: Questions based on life skills (cooperation and working together, concern for others, environmental awareness and problem-solving) • Integrate Your Learning: Integrating learning with Geography and Language • Projects and Activities: Solving a crossword puzzle, conducting a survey, performing an activity, preparing a solution, conducting a class discussion, making a project, creating a presentation on 'Saving Water' and creating a presentation on 'Say No to Water Pollution' • Review Your Learning: Worksheet
5. Air and Atmosphere	<ul style="list-style-type: none"> • AIR: A MIXTURE OF GASES Properties of Air, Evidence to Confirm that Air is a Mixture • USES OF COMPONENTS OF AIR Oxygen, Nitrogen, Carbon Dioxide, Water Vapour, Dust and Smoke • IMPORTANCE OF AIR Respiration, Combustion or Burning, Similarities between Respiration and Combustion, Differences between Respiration and Combustion • MAINTENANCE OF AIR COMPOSITION IN NATURE • AIR POLLUTION Causes of Air Pollution, Effects of Air Pollution, Measures for Reducing Air Pollution • ATMOSPHERE 	<p>5.1 To show that air is present everywhere</p> <p>5.2 To observe that oxygen supports combustion</p> <p>5.3 To show that nitrogen does not support burning of candle</p> <p>5.4 To show that air that we breath out contains carbon dioxide</p> <p>5.5 To show that air contains water vapour</p> <p>5.6 To show that air contains dust particles</p> <p>5.7 To show that soil contains trapped air which is used by the organisms living in soil and by the roots of plants to respire</p> <p>5.8 To show respiration in plants</p> <p>5.9 To show that green plants produce oxygen during photosynthesis</p>	<ul style="list-style-type: none"> • Observe and Perform: Observing the image and answering the questions • Apply Your Learning: Questions based on thinking skills • Life Skills: Questions based on life skills (sensitivity towards environment) • Integrate Your Learning: Integrating learning with Biology and Geography • Projects and Activities: Making a chart and organizing a campaign • Review Your Learning: Worksheet