

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. Matter and Its Composition	<ul style="list-style-type: none"> • MATTER — Properties of Matter • PARTICLE THEORY OF MATTER — Arrangement of Particles in Solids, Arrangement of Particles in Liquids, Arrangement of Particles in Gases • STATES OF MATTER — Solids, Liquids, Gases • COMPOSITION OF MATTER— Elements, Compounds • DIFFERENCES BETWEEN THE THREE STATES OF MATTER 	1.1 To demonstrate that matter has mass 1.2 To show that matter occupies space	<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, working together and drawing conclusion) • Integrate Your Learning: Integrating learning with Physics • Projects and Activities: Creating a presentation and making a model • Review Your Learning: Worksheet
2. Physical and Chemical Changes	<ul style="list-style-type: none"> • TYPES OF CHANGES — Desirable Changes and Undesirable Changes, Reversible Changes and Irreversible Changes, Exothermic Changes and Endothermic Changes • PHYSICAL CHANGES — Characteristics of a Physical Change, Identifying Physical Changes • CHEMICAL CHANGES — Characteristics of a Chemical Change, How to Know that a Chemical Change has Occurred?, Importance of Chemical Changes, Identifying Chemical Changes • CHANGES INVOLVING CHANGE IN STATE OF MATTER • CHANGES INVOLVING CHANGE IN ENERGY 	2.1 To show that dissolution of salt is a physical change 2.2 To show that sublimation of ammonium chloride is a physical process 2.3 To understand that burning of paper is a chemical change 2.4 To understand that curdling of milk is a chemical change 2.5 To understand that baking a chapatti is a chemical change 2.6 To observe caramelising of sugar 2.7 To show that heat energy is released during a chemical change 2.8 To show that heat is evolved when water is added to quicklime	<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 (problem-solving and critical thinking) • Integrate Your Learning: Integrating learning with Physics, Geography and Biology • Projects and Activities: Making a web chart and creating a presentation • Review Your Learning: Worksheet
3. Elements, Compounds and Mixtures (Experimental Techniques)	<ul style="list-style-type: none"> • ELEMENTS — Metals, Non-metals, Metalloids, Noble Gases • NAMES AND SYMBOLS OF ELEMENTS • COMPOUNDS — Characteristics of a Compound • ATOMS • MOLECULES • ATOMICITY — Monoatomic Molecules, Diatomic Molecules, Triatomic Molecules, Polyatomic Molecules • MOLECULAR FORMULA — Significance of Formula • MIXTURES — Characteristics of a Mixture, Types of Mixtures, Formation of Mixtures • DIFFERENCES BETWEEN COMPOUNDS AND MIXTURES • METHODS OF SEPARATING MIXTURES — Need for Separation of Mixtures, Solid-Solid Mixtures, Solid-Liquid Mixtures, Liquid-Liquid Mixtures, Gas-Liquid Mixtures • COMBINING METHODS OF SEPARATION — Separating Mixture of Salt, Sand and Grain; Separating Mixture of Iron Filings, Sand and Iodine • CHROMATOGRAPHY — Paper Chromatography 	3.1 To show that the smallest particles of aluminium/zinc also possess the properties of aluminium/zinc 3.2 To prepare a homogeneous mixture 3.3 To prepare a heterogeneous mixture 3.4 To show that the properties of a compound are different from those of a mixture 3.5 To separate a mixture of common salt and ammonium chloride 3.6 To separate salt from a mixture of salt and water 3.7 To get pure water by the process of distillation 3.8 To separate a mixture of alcohol and water 3.9 To separate the mixture of ink consisting of various dyes	<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 (critical thinking, observational skills and application of knowledge) • Integrate Your Learning: Integrating learning with Geography • Projects and Activities: Creating a presentation and organising a class discussion • Review Your Learning: Worksheet

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4. Atomic Structure	<ul style="list-style-type: none"> • ATOMS AND MOLECULES — Atoms, Molecules • WHAT HAPPENS WHEN TWO ATOMS COMBINE • ATOMICITY • VALENCY • IONS • RADICALS • DIFFERENCES BETWEEN ATOMS, MOLECULES AND RADICALS • PERIODIC TABLE • WRITING THE CHEMICAL FORMULA OF A COMPOUND — Rules for Writing the Chemical Formula, Significance of Chemical Formula 		<ul style="list-style-type: none"> • Observe and Perform: Observing the Periodic table and answering the questions • Apply Your Learning: Questions based on thinking skills • Life Skills: Questions based on life skills (critical thinking and observational skills) • Integrate Your Learning: Integrating learning with Physics • Projects and Activities: Creating a presentation and card game • Review Your Learning: Worksheet
5. Language of Chemistry	<ul style="list-style-type: none"> • CHEMICAL REACTIONS • TYPES OF CHEMICAL REACTIONS — Combination Reactions, Decomposition Reactions • CONDITIONS NECESSARY FOR CHEMICAL REACTION TO OCCUR • CHARACTERISTICS OF CHEMICAL REACTIONS • CHEMICAL EQUATIONS — Steps to Write a Chemical Equation 	<p>5.1 To show that some substances react when mixed in a solution form</p> <p>5.2 To show that heating is necessary for some chemical reactions to occur</p> <p>5.3 To show that chemical reaction may involve a change in colour</p> <p>5.4 To show that chemical reaction may involve evolution of gas</p> <p>5.5 To show that evolution of gas occurs on adding dilute HCl to solid sodium carbonate</p> <p>5.6 To show the reaction between potassium iodide (KI) and lead acetate ($\text{Pb}(\text{CH}_3\text{COO})_2$)</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 (critical thinking and observational skills) • Integrate Your Learning: Integrating learning with Physics • Projects and Activities: Creating a presentation and card game • Review Your Learning: Worksheet
6. Metals and Non-Metals	<ul style="list-style-type: none"> • METALS — Occurrence of Metals, Properties of Metals, Noble Metals, Corrosion in Metals, Rusting of Iron, Uses of Metals • NON-METALS — Sources of Non-metals, Properties of Non-metals, Uses of Non-metals • COMPARISON BETWEEN METALS AND NON-METALS • METALLOIDS — Properties of Metalloids, Metalloids and their Uses 	<p>6.1 To show that metals are malleable</p> <p>6.2 To show that metals are lustrous</p> <p>6.3 To show that metals are sonorous</p> <p>6.4 To show that metals are hard</p> <p>6.5 To show that metals are good conductors of electricity</p> <p>6.6 To show that both air and water are necessary for rusting to occur</p> <p>6.7 To show the basic nature of rust</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 • Integrate Your Learning: Integrating learning with Physics and Geography • Projects and Activities: Making a chart, creating a presentation and making a project • Review Your Learning: Worksheet
7. Air and Atmosphere	<ul style="list-style-type: none"> • ATMOSPHERE • NATURE AND COMPOSITION OF AIR • AIR IS A MIXTURE AND NOT A COMPOUND • VARIOUS COMPONENTS OF AIR — Oxygen, Nitrogen, Carbon Dioxide, Water Vapour, Inert Gases • AIR QUALITY — Methods of Reducing Air Pollution 	<p>7.1 To show that air contains carbon dioxide</p> <p>7.2 To show that air contains water vapour</p> <p>7.3 To test the physical properties of oxygen</p> <p>7.4 To show that sodium burns in oxygen to form sodium oxide</p> <p>7.5 To show that sulphur reacts with oxygen to produce sulphur dioxide</p> <p>7.6 To show that magnesium increases in mass on burning in air</p> <p>7.7 To observe that carbon dioxide is heavier than air and non-supporter of combustion</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 • Integrate Your Learning: Integrating learning with Physics, Geography, Biology and Language • Projects and Activities: Making a report and creating a presentation • Review Your Learning: Worksheet