

No.	UNIT Name	Topic	Sub-Topic	Month		Suggested Ice-Breaking Activity	Teaching Pedagogy	Curricular Goals	Competency	Expected Learning Outcome	Assessment
				Starting	Closing						
1	Chemical Reactions and Equations (15Periods)	1.Chemical Reactions 2.Balancing of Chemical equations 3.Types of Chemical Reactions 4.Effects of oxidation and reduction reactions 5.Corrosion Rancidity	3.1 Combination Reaction Exothermic Reaction 3.2 Decomposition Reaction i) Thermal Decomposition ii) Electrolytic Decomposition iii) Photolytic Decomposition reaction 3.3 Displacement Reaction 3.4 Double Displacement Reaction 4.1 Oxidation Reaction 4.2 Reduction Reaction	April	April	1.Food Example Starter Ask: “What happens when you mix bread + butter?” Students say: It becomes one item → sandwich Connect: Same idea as addition reaction (two → one) 2.Picture Prompt Draw a whole circle then split into two halves. Ask: What happened? Students explain verbally → link to reaction 3.Hand Signal Activity Students show: 👉 push → displacement 👉 join → addition ✂ break → decomposition Teacher says reaction → students show signal. 4. Partner swap Activity 5. Remember the Trick Activity Teach : OIL RIG 6. Find the Rust” Activity: Show pictures or real objects (rusty nail, shiny spoon, painted iron) Ask students: Which one is corroded?	1.Hands on Science and visit to Chemistry Lab 2.Inquiry – Based Learning 3.Think -Pair-Share 4.Use of ICT (Technology)	1. To develop a conceptual understanding of chemical changes and the nature of chemical reactions. 2.To enable students to understand the symbolic representation and balancing of chemical reactions. 3. Able to identify types of Chemical reactions as combination, decomposition, displacement and double displacement. 4. Understand and explain corrosion and rancidity; and their causes and preventive measures. 5. Students develop an understanding of how substances deteriorate through processes like corrosion and rancidity, and learn methods to prevent them. 6. Understand energy changes in chemical reactions by identifying and differentiating between exothermic and endothermic processes, and relating these concepts to real-life situations.	1. Identify and distinguish between physical and chemical changes based on observable characteristics (colour change, gas formation, temperature change, etc.). 2.Write and balance chemical equations along with the symbolic representation. 3. Classify and exemplify types of chemical reactions: Combination, decomposition, displacement, double displacement. 3.Identify oxidation and reduction reactions of daily life. 4. Recognize redox reactions in chemical equations. 5. To promote awareness of everyday chemical processes like corrosion and rancidity. 6.Differentiate between exothermic and endothermic reactions: Identify the energy changes involved in reactions from day to day life examples.	1. Learner will able to develop a conceptual understanding of chemical changes and the nature of chemical reactions. 2. Learner will able understand the symbolic representation and balancing of chemical reactions. 3. Learner will able to identify types of Chemical reactions as combination, decomposition, displacement and double displacement. 4. Learner will able to understand and explain corrosion and rancidity; and their causes and preventive measures. 5. Students will able develop an understanding of how substances deteriorate through processes like corrosion and rancidity, and learn methods to prevent them. 6. Learner will able to Understand energy changes in chemical reactions by identifying and differentiating between exothermic and endothermic processes.	

2.	Acids, Bases and Salts (18Periods)	<p>1. General introduction about acids, bases and indicators.</p> <p>2. Understanding the chemical properties of acids and bases.</p> <p>3. What do all acids and all bases have in common?</p> <p>4. How strong are acid or base solutions?</p> <p>5. Importance of pH in everyday life.</p> <p>6. More about salts</p>	<p>1.1 Acids and bases in the lab laboratory.</p> <p>1.2 How do acids and bases react with metals?</p> <p>1.3 How do metal carbonate and metal hydrogen carbonate react with acids?</p> <p>1.4 How do acids and bases react with each other?</p> <p>1.5 Reaction of metallic oxides with acids and base.</p> <p>2.1 What happens to an asset or base in water solution?</p> <p>6.1 Family of salts</p> <p>6.2 pH of salts</p> <p>6.3 Chemicals from Common Salts</p> <p>6.4 Bleaching Powder</p> <p>6.5 Baking Soda</p> <p>6.6 Washing Soda</p> <p>6.7 Are the crystals of salts really Dry?</p>	June	July	<p>1. "Clap or Silent" Teacher says a substance: Acid → clap Base → stay silent Example: Lemon (clap), Soap (silent) 👉 Super easy and fun.</p> <p>2. "Say One Word" Ask: "Acids taste?" → Sour "Bases feel?" → Slippery 👉 Quick recall activity.</p> <p>3. "Yes or No"</p> <ul style="list-style-type: none"> "Is vinegar an acid?" → Yes "Is soap an acid?" → No <p>👉 Fast concept check.</p> <p>4. "Sour Face – Happy Face" Say: Lemon → students make a sour face 😞 Soap → students make a happy face 😊 👉 Fun and easy to understand (taste-based idea).</p>	<p>1.Hands on Science and visit to Chemistry Lab</p> <p>2.Inquiry – Based Learning</p> <p>3.Think -Pair-Share</p> <p>4.Use of ICT (Technology)</p>	<p>1.Describe how acids and bases react with metals, metal carbonates, and each other.</p> <p>2. Explain the formation and characteristics of salts.</p> <p>3. Learn about indicators and the concept of pH.</p> <p>4. Distinguish between strong and weak acids/bases.</p> <p>5. Interpret reactions and chemical equations related to acids and bases.</p> <p>5. Understand the importance of pH balance in the human body and soil.</p> <p>6. Recognize the effects of acid rain and the role of salts in environmental chemistry.</p>	<p>1.Perform experiments to observe acid-base reactions, use indicators, and test pH.</p> <p>2. Analyze reactions involving oxides and identify the acidic or basic nature of substances.</p> <p>3. Apply knowledge to explain everyday phenomena such as indigestion, soil treatment, and cleaning products.</p> <p>4. Assess the impact of pH in water treatment and agriculture.</p> <p>5. Connect the use of acids, bases, and pH in real-life contexts like health, environment, and industries.</p> <p>6. Appreciate the importance of pH in day-to-day life.</p>	<p>1. Learner will able to describe how acids and bases react with metals, metal carbonates, and each other.</p> <p>2. Learner will able to explain the formation and characteristics of salts.</p> <p>3. Learner will able to tell about indicators and the concept of pH.</p> <p>4. Student will able to distinguish between strong and weak acids/bases.</p> <p>5.Learner will able to interpret reactions and chemical equations related to acids and bases.</p> <p>5. Learner will able to understand the importance of pH balance in the human body and soil.</p> <p>6. Learner will able to recognize the effects of acid rain and the role of salts in environmental chemistry.</p>	ASSESSMENT AS LEARNING
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3.	Metals and Non-Metals (18 Periods)	<p>1. Physical properties of matter nonmetals.</p> <p>2. Chemical properties of metals</p> <p>3. How do metals and non-metals react?</p> <p>4. Occurrence of metals</p> <p>5. Corrosion and it's Prevention</p>	<p>2.1 What happens when metals are burnt in air?</p> <p>2.2 What happens when metals react with water?</p> <p>2.3 What happens when metals react with acids?</p> <p>2.4 How do metals react with solutions of other metal salts?</p> <p>2.5 Reactivity series</p> <p>3.1 Properties of ionic compounds</p> <p>4.1 Extraction of metals</p> <p>4.2 Enrichment of ores</p> <p>4.3 Extracting metals low in the activity series</p> <p>4.4 Extracting metals in the middle of the activity series</p> <p>4.5 Extracting metal towards the top of the activity series</p> <p>4.6 Refining of metals</p>	August	September	<p>1. "Shiny or Not?" Activity: Show pictures or real objects. Ask students to quickly say: "Shiny = Metal" "Not shiny = Non-metal" 👉 Builds quick thinking and observation.</p> <p>2. "Guess the Material" Give clues: "I am shiny, used in wires, and conduct electricity." Students guess: Copper (metal) 👉 Improves thinking and concept recall.</p> <p>3 "Odd One Out" Write on board: Iron, Copper, Oxygen, Aluminium Students identify the odd one (Oxygen – non-metal) 👉 Develops classification skills.</p> <p>4. "Word Association" Say "Metal" → students respond with words like "shiny, strong, conductor" Say "Non-metal" → "dull, brittle, insulator" 👉 Helps build vocabulary and concepts.</p> <p>5. "Who Am I?" Guessing Game: "I am shiny, used in jewellery, and expensive" Students guess: Gold 👉 Can increase difficulty level for challenge.</p>	<p>1. Hands on Science and visit to Chemistry Lab</p> <p>2. Inquiry – Based Learning</p> <p>3. Think -Pair-Share</p> <p>4. Use of ICT (Technology)</p>	<p>1. Understand the classification, properties and chemical reactions of metals and non-metals.</p> <p>2. Apply the concept of the reactivity series in predicting displacement reactions.</p> <p>3. Develop scientific thinking through experimentation and observation.</p> <p>4. Recognize the environmental consequences of metal extraction and promote sustainable use.</p>	<p>1. Explain reactions with oxygen, water, acids, and other elements using balanced equations.</p> <p>2. Use the reactivity series to predict and justify outcomes of chemical reactions.</p> <p>3. Perform and interpret experiments demonstrating properties of metals and non-metals.</p> <p>4. Identify the uses and importance of various metals and non-metals in everyday life.</p>	<p>1. Learner will be able to differentiate between metals and non-metals on the basis of physical and chemical properties.</p> <p>2. Learner will be able to predict the product when metals and non-metals react with oxygen, steam, water and acid.</p> <p>3. Learner will be able to draw inference about the reactivity of metals.</p> <p>4. Learner will be able to identify major ores of some common metals.</p> <p>5. Learner will be able to identify ways to prevent corrosion.</p> <p>6. Learner will be able to analyze the properties of ionic compounds and compare it with covalent compounds.</p>	ASSESSMENT OF LEARNING
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4.	Carbon and its Compounds (20Periods)	<p>1. Bonding in carbon-the covalent bond.</p> <p>2. Versatile Nature of carbon?</p> <p>3. Chemical Properties of Carbon Compounds</p> <p>4. Some important chemical compounds-ethanol, and ethanol acid</p> <p>5. Soaps and Detergent</p>	<p>2.1 Saturated and Unsaturated carbon compounds.</p> <p>2.2 Chains, Branches, and Rings</p> <p>2.3 Will you be my Friend?</p> <p>2.4 Homologous series</p> <p>2.5 Nomenclature of carbon compounds</p> <p>3.1 Combustion</p> <p>3.2 Oxidation</p> <p>3.3 Addition reaction</p> <p>3.4 Substitution reaction</p> <p>4.1 Properties of Ethanol</p> <p>4.2 Properties of Ethanoic acids</p> <p>4.3 How do Ethanoic acid react with carbonate and hydrogen carbonate?</p>	November	December	<p>1. "One Word Answer" Gas we exhale?" → CO₂ "Fuel gas?" → Methane Students answer in one word. 👉 Sharpens thinking.</p> <p>2. "Clap if Carbon" Teacher names substances: Sugar → clap Oxygen → silent 👉 Fun and active.</p> <p>3. "Guess the Substance" Give clues: "I am a gas, used as fuel, simplest hydrocarbon" Students guess: Methane 👉 Develops curiosity.</p> <p>4. "Fast Fingers" "How many bonds can carbon form?" Students show answer using fingers (4) 👉 Quick concept recall.</p> <p>5. "Draw in Air": Ask students to draw: A carbon atom (circle with 4 bonds) in the air 👉 Fun + visual learning.</p> <p>6. "Mini Guess" "I am black, used in pencils" Answer: Graphite 👉 Simple and fun.</p>	<p>1.Hands on Science and visit to Chemistry Lab</p> <p>2.Inquiry – Based Learning</p> <p>3.Think -Pair-Share</p> <p>4.Use of ICT (Technology)</p>	<p>1.Understand the covalent bonding nature of carbon and its tetravalency.</p> <p>2.Learn about the versatile nature of carbon due to catenation and multiple bond formation.</p> <p>3. Explore the structure and properties of important carbon compounds like hydrocarbons, alcohols, etc.</p> <p>4. Recognize functional groups and their role in organic chemistry.</p> <p>5. Understand homologous series and the patterns in physical and chemical properties.</p> <p>6. Learn about the importance and consequences of soap, detergent, and cleansing actions.</p> <p>7. Promote awareness of the importance of organic compounds in daily life and environmental health.</p>	<p>1. Identify and name hydrocarbons and common functional groups.</p> <p>2.Perform and interpret experiments on properties of carbon compounds (e.g., combustion, reaction with Na).</p> <p>3.Investigate cleansing action of soaps and detergents.</p> <p>4.Appreciate the role of organic compounds in food, fuel, and industry.</p> <p>6.Show awareness about the environmental impact of excessive use of carbon-based fuels and plastics.</p> <p>7. Discussion on health hazards on consumption of alcohol and health benefits of using saturated hydrocarbon (oil).</p> <p>8.Correlate day-to-day life phenomenon on working of soap and detergents.</p>	<p>1. Learner will able to identify saturated and unsaturated compounds.</p> <p>2. Learner will able to draw the structure of different isomers of hydrocarbons.</p> <p>3.Learner will able to understand and explain the reaction of carbon compounds with various materials, like nickle catalyst, hydrogen etc.</p> <p>4. Learner will able to describe the chemical properties of ethanol, ethanoic acid, and their reactions.</p> <p>5.Analyze structural formulas and derive molecular formulas.</p>	ASSESSMENT OF LEARNING
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