Week 1: Science - Chemical Reactions and Equations Fu

Subject: Science | Grade: 10 | Generated: 7/23/2025

Ø=ÜÚ Lesson Overview Subject: Science Grade: 10 Week: 1 Curriculur
Objectives To introduce students to the structure, expectations, and safety protocols for Class 10 Science.To enable students to identify and describe physical and chemical changes with everyday Indian examples.To teach students the correct method for writing and balancing simple chemical equations, adhering to the Law of Conservation of Mass.To help students understand and classify different types of chemical reactions: combination, decomposition, displacement, and double displacement.To explain the concepts of oxidation and reduction, and their real-world implications such as corrosion and rancidity, along with preventive measures. Ø=Ü
Monday - Introduction to Class 10 Science & Observing Chemical Cha
Students will be able to identify and describe chemical changes in their daily environment.Students will differentiate between physical and chemical changes with releva
minutes): **Ice-breaker & Syllabus Overview (10 min):** Welcome students, discuss the scope of Class 10 Science, highlight key topics, and briefly cover essential lab safety rules. Emphasize the importance of observation in science.**'Everyday Chemistry' Discussion (15 min):** Initiate a discussion on common changes observed at home. Provide examples like: - Burning of an 'agarbatti' (incense stick) during morning prayers. - Making 'dahi' (curd) from milk. - Ripening of a mango or banana. - Cooking 'roti' (flatbread) on a 'tawa'. Students differentiate between physical and chemical changes based on observations.**Simple Demonstration/Video (10 min):** - **Option 1 (Safe Demo):** Mix baking soda ('meetha soda') with lemon juice in a small bowl to observe gas evolution. - **Option 2 (Video):** Show a short video of burning magnesium ribbon to demonstrate a vigorous chemical change. Discuss the 'new substance' formed.**Q&A and Wrap-up (5 min):** Address student questions and summarize the day's learning. Ø=Üæ M
Whiteboard/Blackboard, Markers/ChalkNCERT Science Textbook for Class XSmall bowl, baking soda, lemon juice (for demonstration)Projector/Smartboard (optional
5 chemical changes and 5 physical changes observed at home, describing each briefly. (e.g., 'Rusting of the iron gate at my home is a chemical change because a new substance, rust, is formed.') Ø=ÜÖ NCERT Reference: Science Textbook for Class X, Cha
Equations - Introduction (Page 1) and Section 1.1 (Chemical Equations - focusing on observable changes that define a chemical reaction, Page 2) Ø=ÜË Teaching Note
observation and critical thinking for distinguishing changes. Connect learning to common Indian household activities. Tuesday - Writing and Balancing Chemical Equa
will understand the components of a chemical equation.Students will grasp the significance of the Law of Conservation of Mass in chemical reactions.Students will learn and apply the method of balancing simple chemical equations. Ø<ßª Activities (40 minutes): **
Briefly recap chemical vs. physical changes. Introduce the concept of representing chemical reactions symbolically using chemical equations. Emphasize the conciseness and information conveyed by equations.**Law of Conservation of Mass (15 min):** Explain the Law of Conservation of Mass in the context of chemical reactions ('mass can neither be created nor destroyed'). Discuss why balancing equations is essential (to satisfy this law). Use a simple analogy like arranging building blocks (atoms) to form structures (molecules).**Guided Practice: Balancing Equations (15 min):** - Demonstrate balancing simple equations step-by-step on th
Fe + O‚!’ Fe‚O*f*). - Provide 2-3 simple unbalanced equations (e.g., N
to attempt in pairs. Provide hints and common pitfalls. Ø=Üæ Material
Markers/ChalkNCERT Science Textbook for Class XWorksheet with unbalanced chemical equations Ø=ÜÝ Homework: Practice balancing equations from NCERT
Balance 5 additional practice equations provided by the teacher. Ø=Ü
Textbook for Class X, Chapter 1: Chemical Reactions and Equations - Section 1.2 (Writing a Chemical Equation & Balancing a Chemical Equation, Pages 2-6) Ø=ÜË
trial-and-error approach for balancing. Encourage students to check their balanced equations by counting atoms on both sides. Connect to 'Jugaad' mindset in problem-solving. Wednesday - Types of Chemical Reactions: Combination & Decomposition Ø<ß¯ Objectives
define and identify combination reactions with examples.Students will be able to define and identify decomposition reactions with examples.Students will understand the difference between exothermic and endothermic reactions. Ø<ßª Activities (40 minutes): *
Quick review of balanced equations. Introduce the classification of chemical reactions based on their patterns.**Combination Reactions (15 min):** - Explain 'combination' (reactants combining to