

Core Content – Chemistry
2022-2023

Student Name: _____ School: _____

Teacher: _____

Atoms and the Periodic Table

- ☐ Historical Development of Atomic Theory
- ☐ Modern Atomic Theory
- ☐ The Structure of the Atom
- ☐ Elements, Compounds, and Mixtures
- ☐ Atomic Numbers and Electron Configurations
- ☐ The History and Arrangement of the Periodic Table
- ☐ Periodic Trends

States and Changes of Matter

- ☐ Gases
- ☐ Liquids
- ☐ Solids and Plasmas
- ☐ Phase Changes
- ☐ Changes in Matter
- ☐ Lab: Physical and Chemical Changes

Chemical Bonding and Reactions

- ☐ Ionic Bonding
- ☐ Covalent Bonding
- ☐ Lab: Ionic and Covalent Bonds
- ☐ Evidence of Chemical Reactions
- ☐ Writing and Balancing Chemical Equations
- ☐ Types of Chemical Reactions
- ☐ Lab: Types of Reactions
- ☐ Oxidation-Reduction
- ☐ Balancing Oxidation-Reduction Equations

Stoichiometry and the Gas Laws

- ☐ Molar Masses
- ☐ Introduction to Stoichiometry
- ☐ Stoichiometric Calculations
- ☐ Limiting Reactant and Percent Yield
- ☐ Gas Laws
- ☐ Lab: Charles' Law
- ☐ Lab: Boyles Law
- ☐ The Ideal Gas Law

Reaction Rates and Equilibrium

- ☐ Reaction Rate
- ☐ Lab: Reaction Rate
- ☐ Reversible Reactions and Equilibrium
- ☐ Shifts in Equilibrium

Energy in Chemical Reactions

- ☐ Energy
- ☐ Heat
- ☐ Calorimetry
- ☐ Lab: Calorimetry and Specific Heat
- ☐ Thermochemical Equations
- ☐ Enthalpy of Reaction

Mixtures, Solutions, and Acid-Base Reactions

- ☐ Mixtures and Solutions
- ☐ Solutions and Solubility
- ☐ Lab: Solubility
- ☐ Measures of Concentration: Molarity
- ☐ Properties of Acids and Bases
- ☐ Arrhenius, Bronsted-Lowry, and Lewis Acids and Bases
- ☐ pH
- ☐ Lab: Measuring pH
- ☐ Neutralization Reactions

Organic Chemistry

- ☐ Organic Compounds
- ☐ Properties and Uses of Saturated Hydrocarbons
- ☐ Properties and Uses of Unsaturated Hydrocarbons
- ☐ Functional Groups
- ☐ Organic Reactions

Nuclear Chemistry

- ☐ Types of Radioactive Decay
- ☐ Balancing Nuclear Reactions
- ☐ Half-Life
- ☐ Lab: Half-Life
- ☐ Nuclear Fission and Nuclear Fusion
- ☐ Nuclear Energy