

Honors Chemistry

1st QUARTER:

I. Matter and Change

- A. Chemistry is a Physical Science
- B. Matter and Its Properties
- C. Elements

II. Measurements and Calculations

- A. Scientific Method
- B. Units of Measurement
- C. Using Scientific Measurements

III. Atoms: The Building Blocks of Matter

- A. The Atom
- B. The Structure of the Atom
- C. Counting Atoms

BENCHMARK I

2nd QUARTER:

IV. Arrangement of Electrons in Atoms

- A. The Development of a New Atomic Model
- B. The Quantum Model of the Atom
- C. Electron Configurations

V. The Periodic Law

- A. History of the Periodic Table
- B. Electron Configuration and the Periodic Table
- C. Electron Configuration and Periodic Properties

VI. Chemical Bonding

- A. Introduction to Chemical Bonding
- B. Covalent Bonding and Molecular Compounds
- C. Ionic Bonding and Ionic Compounds
- D. Metallic Bonding
- E. Molecular Geometry

VII. Chemical Formulas and Chemical Compounds

- A. Chemical Names and Formulas
- B. Oxidation Numbers (Honors)

BENCHMARK II

3rd QUARTER:

VII. Chemical Formulas and Chemical Compounds

- A. Using Chemical Formulas
- B. Determining Chemical Formulas – Percent Composition

VIII. Chemical Equations and Reactions

- A. Describing Chemical Reactions
- B. Types of Chemical Reactions
- C. Activity Series of the Elements

IX. Stoichiometry

- A. Introduction to Stoichiometry
- B. Ideal Stoichiometric Calculations
- C. Limiting Reactants and Percent Yield

BENCHMARK III

4th QUARTER:

X. States of Matter

- A. Kinetic Theory of Matter
- B. Liquids
- C. Solids
- D. Changes of State
- E. Water

XI. Gases

- A. Gas and Pressure
- B. The Gas Laws
- C. Gas Volumes and the Ideal Gas Law
- D. Diffusion and Effusion

XII. Solutions

- A. Types of Mixtures
- B. The Solution Process
- C. Concentration of Solutions

XIII. Ions in Aqueous Solutions and Colligative Properties

- A. Compounds in Aqueous Solution
- B. Colligative Properties of Solutions

XIV. Reaction Energy (Thermochemistry)

- A. Thermochemistry

XV. Acids, Bases, Salts

- A. Properties of Acids and Bases
- B. Acid-Base Theories
- C. Acid-Base Reactions
- D. Aqueous Solutions and the Concept of pH
- E. Indicators

BENCHMARK IV