

Unit 1: Matter and Atomic Bonding

Safety

Review of Classification of Matter and Definitions

Nomenclature: Oxidation Numbers

Balancing equations

Types of Reactions

Lab: Types of Reactions

Standard Atomic Notation

Introduction to Periodic Table/Periodic Law, Isotopes, Radioisotopes

Early Atomic Theories- Bohr Theory, Bohr Rutherford Diagrams

Spectroscopy and Modern Atomic Theory/Bohr Model

Lab: Spectroscopy

Introduction to the Quantum Mechanical Model

Periodic Table and Electron Configurations

Periodic Trends: Atomic Radius, Ionic Radius, Ionization Energy, Electron Affinity, Electronegativity, Chemical Reactivity

Multiple Ionization Energies

Lab: Trends in Atomic Radii and Ionization Energies

Lab(a) & (b): Reactivity and Displacement Reactions of Metals, and Halogens

Ionic Bonding

Covalent Bonding

Draw Lewis Structures

Shapes of Molecules

The Bond Continuum and Polar Bonds and Polar Covalent Molecules

Lab: Model Building: Shapes of Covalent Molecules

Intermolecular Forces and Intramolecular Forces

Relate Type of Bonding to Properties of Compounds