



Introductory Chemistry

Full Year: 24 Labs

Version 3

Introduction to Chemistry and Experimental Procedures

- Lab 1: Laboratory Safety and Procedures
- Lab 2: Thinking Like a Chemist: The Scientific Method

Measurements and Their Applications

- Lab 3: Data Analysis and Graphing
- Lab 4: Types of Matter

Properties of Matter and Energy

- Lab 5: Exploring Solubility
- Lab 6: Examination of Physical and Chemical Properties
- Lab 7: Measuring Heats of Reactions
- Lab 8: Distinguishing Between Endothermic and Exothermic Reactions

Atoms and Atomic Theory

- Lab 9: Electron Configuration
- Lab 10 : Electromagnetic Radiation

Chemical Bonding and Molecular Structure

- Lab 11: Molecular Geometry: The VSEPR Model
- Lab 12: Types of Chemical Bonds
- Lab 13 : Bond Polarity and Dipole Moments





Introductory Chemistry

Chemical Reactions

Lab 14: Evaluating Precipitation Reactions

Lab 15: Types of Chemical Reactions

Lab 16: Oxidation-Reduction Reactions

Classification of Elements

Lab 17: Molar Mass

Lab 18: Periodic Trends in Atomic Properties

Lab 19: Stoichiometric Calculations:
Reactants and Products

Overview of the Gas Laws

Lab 20: Using the Ideal Gas Law

Introduction to Kinetics and Reaction Rates

Lab 21: Exploring Reaction Rates

Lab 22: Chemical Kinetics and Catalysis

Acids and Bases

Lab 23: The Nature of Acids and Bases:
Exploring the pH Scale

Lab 24: Titrations and Equivalence Points

Appendix: Good Lab Techniques