

Introduction to Chemistry

Course Description

This course is perfect for sixth through eighth graders who have little or no prior experience with chemistry. The prerequisite is algebra 1. We will go over the basics of chemistry and get prepared for high school honors chemistry classes. This class is interactive and there will be minimum homework. The class will be 60 minutes long. No textbook is required.

Course Units

1. Laboratory

- 1.1 Safety and Procedures
- 1.2 Measurement

2. Properties of Water

- 2.1 Types of matter
- 2.2 Types of matter
- 2.3 States of matter
- 2.4 Physical Properties

3. Periodic Table

- 3.1 Organization of the Periodic Table
- 3.2 Periodic Trends

4. Chemical Bonding

- 4.1 Ionic Bonding
 - 4.11 Cations & anions
 - 4.12 Polyatomic Ions
- 4.2 Covalent Bonding

- 4.21 Nomenclature Covalent Compounds
- 4.22 Lewis Structures
- 4.23 VESPR
- 4.24 Intermolecular Forces
- 4.3 Metallic Bonding

5 The Mole

- 5.1 Percent Composition
- 5.2 Chemical Unit of Measure

6 Chemical Reaction Types

- 6.1 Reaction Types
- 6.2 Balancing Reactions
- 6.3 Acid - Base Reactions
- 6.4 Neutralization Reactions
- 6.5 Precipitation Reactions
- 6.6 Oxidation Reduction (Redox) Reactions

7 Stoichiometry

- 7.1 Mole Ratios in a Balanced Equation
- 7.2 Mass Reactant - Mass Product
- 7.3 Limiting Reactant
- 7.4 Molarity

8 Gas Laws and Gas Stoichiometry

- 8.1 Kinetic Molecular Theory
- 8.2 Boyle's Law
- 8.3 Charles's Law
- 8.4 Gay-Lussac's Law
- 8.5 Ideal Gas Law
- 8.6 Gas Density
- 8.7 Gas Stoichiometry