



School District of Marshfield Course Syllabus

Course Name: Regular Chemistry

Length of Course: Year

Credits: 1

Course Description:

Study the classification of matter; electron configuration and atomic structure; the periodic classification of the elements; chemical bonding; chemical formulas and equations; the mathematics of chemistry; physical characteristics and molecular composition of gases, liquids, and solids; carbon and some of its compounds. In addition you will study solutions and their behavior and properties, ions in solutions, acids, and bases; chemical equilibrium; oxidation-reduction reactions; and nuclear chemistry

Learning Targets:

- Understand the rules scientists use
- Describe and classify matter
- Collect and analyze data
- Understand the contribution to chemistry of relevant scientists
- Understand the Atomic Theory
- Explain changes in matter and energy in terms of types of reactions
- Explain changes in matter and energy in terms of the kinetic molecular theory
- Understand and apply the mole concept

First Quarter

1. Properties of Matter: 3 weeks
 - A. Chemical and Physical properties and changes
 - B. Law of Conservation of Mass
 - C. States of Matter
2. Scientific Measurement: 2 weeks
 - A. SI Units and Conversions
 - B. Dimensional Analysis
 - C. Scientific Notation
 - D. Graphing and Data Analysis

3. Atomic Structure: 3 weeks
 - A. Subatomic particles
 - B. History of Atomic Theory
 - C. Isotopes and Atomic Mass
 - D. Electron Configuration

Second Quarter

4. Periodicity: 3 weeks
 - A. Periodic Table and History
 - B. Periodic Trends
 - C. Predicting properties of elements
5. Ionic and Metallic Bonding: 3 weeks
 - A. Lewis Dot Structures for ions and ionic compounds
 - B. Write names and formulas for ionic compounds
 - C. Identify properties of ionic compounds
 - D. Understand the "sea of electron" model to explain properties of metals
6. Covalent Bonding and Intermolecular Forces of Attraction: 2-3 weeks
 - A. Lewis Dot structures for covalent molecules
 - B. VSEPR theory of molecular geometry
 - C. Model molecular shapes
 - D. Write names and formulas of molecular compounds and acids
 - E. Strength of Intermolecular Forces

Third Quarter

7. Chemical Reactions: 3 weeks
 - A. Balancing equations
 - B. Types of reactions
 - C. Predicting Products
8. Chemical Quantities: 2 weeks
 - A. Molar mass
 - B. Mole conversions
 - C. Percent Composition
 - D. Hydrates
9. Stoichiometry: 2 weeks
 - A. Stoichiometric calculations
 - B. States of Matter

Fourth Quarter

10. Solution Chemistry: 2-3 weeks
 - A. Factors effecting solubility
 - B. Solution Concentration
 - C. Reading Solubility Curves

11. Acids / Bases: 2 weeks
 - A. pH
 - B. Neutralization Reactions
 - C. Titrations
12. Gas Laws: 2 weeks
 - A. Properties of gases
 - B. Gas Laws
13. Qualitative Analysis: 2 weeks
 - A. Analysis of cations in solution
14. School Forest Environmental Chemistry and Tie Dying T-Shirts

Required Core Resources:

Text: Pearson Chemistry

Lab Notebook-purchased