

## **General Syllabus for Chemistry 1 - Conneaut School District**

**Text Information:** Pearson Prentice Hall Chemistry ©2008 Grade 11-12

**Online Text Book:** [www.pearsonsuccessnet.com](http://www.pearsonsuccessnet.com)

**Course Description:** Chemistry is designed to provide students opportunities to learn Chemistry and act as scientists to develop a fundamental understanding of natural systems, use scientific methods to investigate the natural world, and make responsible decisions regarding personal, social, and technological issues.

### **Objectives:**

- to give students a breadth and depth study in inorganic Chemistry
- to provide common knowledge, scientific and problem solving skills, and investigations within the Chemistry discipline
- to promote national and state science standards that promote unifying concepts at each grade level and within the Chemistry discipline.
- to enhance understanding through the use of technology

### **Topics Covered:**

#### **Scientific Measurement (approximately 25 hours)**

**PA Anchors: (S11.A.2.1.1; S11.A.2.2.1; S11.A.2.2.2;; S11.A.1.1.5)**

- Parts of a measurement
- Uncertainty in Measurement
  - Precision
  - Accuracy
- Rounding
- Significant Digits
- Base Units
- Derived Units
  - Volume
  - Density
- Conversions
- Temperature

## **Properties of Matter (approximately 30 hours)**

**PA Anchors: (S11.A.1.1.4; S11.A.2.2.1; S11.A.3.2.3; S11.A.3.3.2; S11.A.3.3.1; S11.A.1.1.5; S11.C.1.1.1; S11.C.1.1.3; S11.C.1.1.4)**

- Mixtures
- Elements
- Compounds
- Atomic Structure
  - Electron Configuration
  - Orbital Diagrams
  - Quantum Numbers
- States of Matter
  - Solids
  - Liquids
  - Gasses
  - Change in State
- Periodic Table
  - Organization
  - Classification
  - Trends

## **Bonding (approximately 10 hours)**

**PA Anchors: (S11.C.2.1.2; S11.A.3.3.1; S11.A.1.1.4; S11.A.1.1.5)**

- Ionic Bonds
  - Ionic Compounds
  - Octet Rule
  - Cations
  - Anions
  - Polyatomic Ions
  - Chemical Formulas
- Covalent Bonds
  - Diatomic Elements
  - Molecular Formulas
  - Apparent Charge
  - Multiple Bonds
  - Polar Bonds
- Metallic Bonds

## **Chemical Names and Formulas (approximately 10 hours)**

### **PA Anchors: (S11.A.1.1.5)**

- Naming Ions
- Writing and Naming Ionic Compounds
- Writing and Naming Molecular Compounds
- Writing and Naming Acids and Bases

## **Chemical Quantities and Reactions (approximately 30 hours)**

### **PA Anchors: (S11.A.2.1.1; S11.A.1.1.4; S11.A.1.1.5)**

- Atomic and Molecular Weight
- Chemical Reactions
  - Types of Chemical Reactions
- Mole Theory
  - Mole-Mass
  - Mole-Volume
  - Mole-Mole
- Stoichiometry
  - Limiting Reactants
  - Percent Yield
- Percent Composition

## **Solutions (approximately 15 hours)**

### **PA Anchors: (S11.A.2.1.1; S11.A.2.2.1; S11.C.1.1.6; S11.A.1.1.5)**

- Solubility
- Concentration
  - Molarity
  - Molality
  - Normality
  - Percent w/w
  - Percent w/v
  - Percent v/v
- Colligative properties
  - Vapor pressure lowering
  - Boiling Point Elevation
  - Freezing Point Depression

## **Gas Laws (approximately 15 hours)**

**PA Anchors: (S11.A.2.1.1; S11.A.2.2.1; S11.C.1.1.5; S11.A.3.3.1; S11.A.1.1.4)**

- Properties of Gasses
- Gas Laws
  - Boyles Law
  - Dalton's Law of Partial Pressure
  - Charles' Law
  - Gay-Lussac's Law
  - Combined Gas Law
- Ideal Gas Equation

### **Instruction:**

- Lecture
- Power point presentations
- Streaming Media
- Demonstrations
- Student inquiry labs/Guided labs
- Videos
- CD-ROM instruction
- Cooperative learning

### **Assessment:**

- Success Tracker (online testing and remediation)
- Projects/independent research (power point presentation, research paper)
- Teacher observation
- Tests
- Quizzes
- Lab activities with writing component

### **Parent/Student Resources:**

- Online Textbook with audio capabilities
- Success Tracker (online assessment tool)
- Online Leveled Readers
- Edline