

## **UNIT 2: Atoms, Elements, and Compounds**

### **Chapter 4: Properties of Elements and Compounds**

#### 4.1: Studying Matter

- Matter
- Pure Substances
- Mixture
- Element
- Compound

#### 4.2: Physical Properties

- Qualitative and Quantitative Properties
- Viscosity
- State of Matter
- Solubility
- Hardness
- Conductivity
- Density (formula)

#### 4.3: Chemical Properties

- Reactivity with Other Substances
- Combustibility
- Stability and Toxicity

### **Chapter 5: Understanding the Properties of Elements**

#### 5.1: Evolution of the Atomic Model

- Daltons Model of the Atom (Atomic Theory)
- Thomson's Discovery of Electrons
  - Thomson's New Atomic Model
- Rutherford's Discovery of the Nucleus and Results
- Bohr's Description of Energy Levels

#### 5.2: The Structure of the Atom

- Inside the Atom
  - Protons and Neutrons
  - Atomic Number and Mass Number
- Representing Elements (Standard Atomic Notation)

- Representing Atoms with Bohr-Rutherford Diagrams/Models

### 5.3: The Periodic Table

- Mendeleev's arrangement and the Modern Periodic Table
- Synthetic Elements
- Classes of Elements in the Periodic Table (properties of metals, metalloids and non-metals)
- Families and Groups of the Periodic Table

### 5.4: Trends in the Periodic Table

- Reactivity and the Outermost Electrons
- Filling the Outer Energy Levels (Valence)
- Reactivity and Atom Size

Reactivity of Metals Lab – review concepts and results (ex. After testing Mg, Ca, Al, what did you notice about the reactivity? How does this relate to period trends discussed in class?)

## Chapter 6: Understanding the Properties of Compounds

### 6.1: Ionic Compounds

- Forming Ions
- Ionic Bonds
- Ionic Compounds
- Properties of Ionic Compounds (Physical States, Solubility, Conductivity)

### 6.2: Molecular Compounds

- Covalent compounds
- Covalent Bonds
- Recognizing Molecular Compounds
  - Molecules
- Naming Molecular Compounds (Prefix)
- Draw BR Diagrams for Ionic Compounds and Covalent Compounds

### Review Exercises:

- Chapter 4 Review: pg.174 – pg.175 #1-18
- Chapter 5 Review: pg.216 -217 #1-20, 21,25,27,28(point form)
- Chapter 6 Review: pg.254 – 255 #1 – 18,21,23,28

Unit Review: pg. 260-261 #1-18, 22,23,24,25(from handout)