## SCOPE & SEQUENCE

### Unit 1 — Introduction to Chemistry
- 1A: What is Chemistry?
- 1B: Hypotheses and Models
- 1C: Investigating the Problem
- 1D: Experimental Design
- 1E: Performing an Experiment
- 1F: Analyzing Data

**Closer Looks**
- Significant Figures Practice

### Unit 2 — Introduction to Matter
- 2A: Properties of Matter
- 2B: Density Lab Results and Crush Lab
- 2C: Physical Properties and Phase Change
- 2D: Phase Change Demonstrations
- 2E: Chemical Properties
- 2F: Mixtures
- 2G: Separating Mixtures
- 2H: Chromatography Results and Mixtures Challenge
- 2I: Mixtures Challenge Results and Water Treatment

**Closer Looks**
- Metric System and Conversions
- Scientific Notation Practice

### Unit 3 — Atomic Structure
- 3A: Atomic Models
- 3B: The Periodic Table
- 3C: Characteristics of Electrons

**Closer Looks**
- Wavelength, Frequency, and Energy Calculations

### Unit 4 — Bonding
- 4A: Introduction to Bonding
- 4B: Chemical Bonding
- 4C: Intramolecular Bonding
- 4D: Comparing Types of Bonds
- 4E: Intermolecular Bonding
- 4F: Melting Results and Molecular Modeling

**Closer Looks**
- Diagramming Lewis Structures

### Unit 5 — Chemical Reactions
- 5A: Balancing Equations
- 5B: Types of Reactions
- 5C: Reactivity and Predicting Products

**Closer Looks**
- Net Ionic Equations

**Closer Looks**
- Conservation of Matter
Unit 6 — The Mole and Stoichiometry

6A: Dimensional Analysis
6B: The Mole

Closer Looks
- Converting Moles to Particles
- Molar Mass and Mole to Gram

6C: Percent Composition and Empirical Formulas

Closer Looks
- Percent Composition and Empirical Formulas
- Hydrates and Molecular Formulas

6D: Stoichiometric Calculations

Closer Looks
- Mole to Mole Stoichiometry

6E: Limiting Reactants

Closer Looks
- Limiting Reactant Stoichiometry

6F: Combustion Lab
6G: Combustion Lab Results

Closer Looks
- Converting Moles to Volume
- Mass to Mass Practice With Percent Yield

Unit 7 — Solutions, Acids, and Bases

7A: What is a Solution?
7B: Solubility
7C: Solution Concentration

Closer Looks
- Molarity Calculations

7D: Dilution
7E: Dilution Lab Results
7F: Colligative Properties

Closer Looks
- Colligative Property Calculations

7G: Acids and Bases Part I
7H: Acids and Bases Part II

Closer Looks
- pH Calculations
- Titration Calculations

7I: Titration Lab Results and pH
7J: pH Lab Results

Unit 8 — Chemical Thermodynamics

8A: The Laws of Thermodynamics
8B: Specific Heat
8C: Heat Transfer
8D: Greenhouse Lab Results and Calorimetry
8E: Calorimetry Lab
8F: Calorimetry Lab Results

Closer Looks
- Gibbs Free Energy
Unit 9 — Kinetics and Gases
9A: Reaction Rates
9B: Reaction Rate Lab
9C: Reaction Rate Lab Results and Catalysts
9D: Kinetic Molecular Theory
9E: Ideal Gas Law
9F: Air Bag Lab

Closer Looks
-Gas Laws Calculations

9G: Air Bag Lab Results

Unit 10 — Introduction to Equilibrium
10A: Chemical Equilibrium
10B: The Equilibrium Constant Part I
10C: The Equilibrium Constant Part II
10D: Le Chatelier’s Principle
10E: Smog Lab
10F: Smog Lab Results
10G: How Temperature Affects Equilibrium

Closer Looks
-Equilibrium Calculations

Unit 11 — Nuclear Chemistry
11A: Radioactivity
11B: Nuclear Fission and Types of Radiation
11C: Half-Life
11D: Nuclear Fusion
11E: Real World Nuclear Chemistry

Unit 12 — Chemistry Matters Recap
12A: Introduction to Chemistry Review
12B: Introduction to Matter Review
12C: Atomic Structure Review
12D: Bonding Review
12E: Chemical Reactions Review
12F: The Mole and Stoichiometry Review
12G: Solutions, Acids, and Bases Review
12H: Chemical Thermodynamics Review
12I: Kinetics and Gases Review
12J: Introduction to Equilibrium Review
12K: Nuclear Chemistry Review