Chemistry Name: _____

Section _____ SYLLABUS Date: _____

Syllabus for Chemistry: The NYSED Common Core

and Regents Chemistry Made Easy (Sharon Welcher)

0. Tools of Chemistry
   - Introduction to Chemistry
   - Scientific Inquiry
   - Numbers, Sig. Figs., Math
   - Analyzing Data
   - Dimensional Analysis
   - Introduction to the Periodic Table

Va. Physical Behavior of Matter (Energy, Gases)
   - Matter – Substances and Mixtures
   - Energy and Chemical Change
   - Heat, Temperature, and Phases
   - Heating Curves
   - KMT of Gases
   - Vapor Pressure
   - Particle Models

I. Atomic Concepts
   - Atom Model History
   - Atomic Structure
   - Electrons in Atoms
   - Atomic Particles
   - Atomic Mass
   - Lewis Electron Dot Diagrams (LEDs)

II. The Periodic Table
   - The Periodic Table and Periodic Law
   - Metals, Nonmetals, and Metalloid Trends
   - Group Properties
   - Periodic Trends
   - History of the Periodic Table

IV. Chemical Bonding
   - Introduction to Bonding
   - Intermolecular Forces (IMFs)
   - Electronegativity and Bond Type
   - LED and Bonding
   - Bonding and Phase Properties
   - Chemical Formulas

III. Moles and Stoichiometry
   - Writing Formulas
   - Naming Compounds
   - Gram Formula Mass (gfm)
   - Molecular and Empirical Formulas
   - Percent Composition (by mass)
   - The Mole / Mass – Mole Problems
   - Chemical Reactions / Reaction Types
   - Mole – Mole Stoichiometry

Vb. Physical Behavior of Matter (Solutions)
   - Mixtures and Solutions
   - Concentration / Solubility Curves / Factors
   - Calculating Concentration (%, ppm, M)
   - Colligative Properties

VI. Kinetics/Equilibrium
   - Collision Theory
   - Enthalpy / Entropy
   - Chemical Equilibrium / Le Châtelier
   - Common Ion Effects

IX. Acids, Bases, and Salts
   - Acids – Base Theory, and Neutralization
   - Balancing Acid – Base / Metal Reactions
   - Titration / pH

VIII. Oxidation-Reduction
   - Redox Reactions / Half-Reactions
   - Oxidation Numbers
   - Cells and Electrochemistry

VII. Organic Chemistry
   - Hydrocarbon Names and Functional Groups
   - Isomerism
   - Organic Reactions

X. Nuclear Chemistry
   - Nuclear Reactions / Radiation / Half-Life
   - Transmutation / Radioisotopes
   - Nuclear Energy