Thinkwell's Homeschool AP Chemistry
Course Lesson Plan: 34 weeks

Welcome to Thinkwell's Homeschool AP Chemistry! We're thrilled that you've decided to make us part of your homeschool curriculum. This lesson plan is meant to be a guide for you and your homeschool student. Each day, you'll tackle a different topic and all the materials associated with that topic, such as video lectures, exercises, and interactivities. If you follow our day-by-day schedule, you'll complete the full curriculum for the course in 34 weeks. Feel free to modify and amend the plan as it best works for you. And, as always, please let us know what we can do to help get you up and running with Thinkwell's Chemistry!

Schedule Overview:

Weeks 1 – 2	Chapter 1: An Introduction to Matter and Measurement
Weeks 3 – 4	Chapter 2: Atoms, Molecules, and Ions
Weeks 4 – 5	Chapter 3: Stoichiometry
Weeks 6 – 7	Chapter 4: Reactions in Aqueous Solutions
Weeks 7 – 9	Chapter 5: Gases
Weeks 9 – 10	Chapter 6: Thermochemistry
Weeks 11 – 12	Chapter 7: Modern Atomic Theory
Week 13	Chapter 8: Electron Configurations and Periodicity
Week 14	Chapter 9: Chemical Bonding: Fundamental Concepts
Weeks 15 – 16	Chapter 10: Molecular Geometry and Bonding Theory
Weeks 16 – 17	Chapter 11: Oxidation-Reduction Reactions
Weeks 17 – 18	Chapter 12: Condensed Phases: Liquids and Solids
Weeks 19 – 20	Chapter 13: Physical Properties of Solutions
Week 20	Midterm
Weeks 21 – 22	Chapter 14: Chemical Kinetics
Weeks 22 – 23	Chapter 15: Chemical Equilibrium
Weeks 24 – 25	Chapter 16: Acids and Bases
Weeks 25 – 26	Chapter 17: Equilibrium in Aqueous Solution
Week 27	Chapter 18: Thermodynamics
Weeks 28 – 29	Chapter 19: Electrochemistry
Weeks 29 – 30	Chapter 20: Nuclear Chemistry
Weeks 30 – 31	Chapter 21: Chemistry of Metals
Week 31 – 32	Chapter 22: Nonmetals
Week 33	*Optional: Chapter 23: Instructional Laboratory Demonstrations*
Week 34	Final Exam

Week 1 Chapter 1: An Introduction to Matter and Measurement	
Assignments	Notes
Week 1, Day 1 ☐ 1.1.1 An Introduction to Chemistry (3:03) ☐ 1.1.2 The Scientific Method (10:07)	
Week 1, Day 2 ☐ 1.2.1 States of Matter (11:15)	
Week 1, Day 3 ☐ 1.2.2 A Word About Laboratory Safety (0:23) ☐ 1.2.3 CIA Demonstration: Differences in Density Due to Temperature (3:33)	
Week 1, Day 4 ☐ 1.2.4 Properties of Matter (6:30) ☐ 1.3.1 The Measurement of Matter (9:30)	
Week 1, Day 5 ☐ 1.3.2 Precision and Accuracy (15:37) ☐ 1.3.3 CIA Demonstration: Precision and Accuracy with Glassware (2:49)	

Week 2 Chapter 1: An Introduction to Matter and Measurement Chapter 1 Test	
Assignments	Notes
Week 2, Day 1 ☐ 1.3.4 Significant Figures (12:01) ☐ 1.3.5 Dimensional Analysis (11:22)	
Week 2, Day 2 ☐ 1.4.1 Scientific (Exponential) Notation (11:40)	
Week 2, Day 3 ☐ 1.4.2 Common Mathematical Functions (11:28)	
Week 2, Day 4 ☐ Chapter 1 Practice Test	
Week 2, Day 5 ☐ Chapter 1 Test	Chapter 1 Test Score: _____

Week 3 Chapter 2: Atoms, Molecules, and Ions	
Assignments	Notes
Week 3, Day 1 ☐ 2.1.1 Early Discoveries and the Atom (10:33) ☐ 2.1.2 Understanding Electrons (8:11)	
Week 3, Day 2	

☐ 2.1.3 Understanding the Nucleus (12:20) ☐ 2.2.1 Mass Spectrometry: Determining Atomic Masses (12:23)	
Week 3, Day 3 ☐ 2.2.2 Examining Atomic Structure (13:45) ☐ 2.2.3 CIA Demonstration: Flame Colors (2:47)	
Week 3, Day 4 ☐ 2.3.1 Creating the Periodic Table (13:21) ☐ 2.4.1 Describing Chemical Formulas (12:40)	
Week 3, Day 5 ☐ 2.4.2 Naming Chemical Compounds (11:27) ☐ 2.4.3 Organic Nomenclature (8:35)	

Week 4 Chapter 2 Test Chapter 3: Stoichiometry	
Assignments	Notes
Week 4, Day 1 ☐ Chapter 2 Practice Test	
Week 4, Day 2 ☐ Chapter 2 Test	Chapter 2 Test Score: _____
Week 4, Day 3 ☐ 3.1.1 An Introduction to Chemical Reactions and Equations (6:42) ☐ 3.1.2 CIA Demonstration: Magnesium and Dry Ice (3:23)	
Week 4, Day 4 ☐ 3.1.3 Balancing Chemical Equations (10:12)	
Week 4, Day 5 ☐ 3.2.1 The Mole and Avogadro's Number (12:45) ☐ 3.2.2 Introducing Conversions of Masses, Moles, and Number of Particles (9:55)	

Week 5 Chapter 3: Stoichiometry Chapter 3 Test	
Assignments	Notes
Week 5, Day 1 ☐ 3.3.1 Finding Empirical and Molecular Formulas (10:59) ☐ 3.3.2 Stoichiometry and Chemical Equations (8:22)	
Week 5, Day 2 ☐ 3.3.3 Finding Limiting Reagents (7:41) ☐ 3.3.4 CIA Demonstration: Self-Inflating Hydrogen Balloons (3:34)	
Week 5, Day 3 ☐ 3.3.5 Theoretical Yield and Percent Yield (9:07) ☐ 3.3.6 A Problem Using the Combined Concepts of Stoichiometry	

(8:21) ☐ 3.3.7 Calculating Mass Percent (10:15)	
Week 5, Day 4 ☐ Chapter 3 Practice Test	
Week 5, Day 5 ☐ Chapter 3 Test	Chapter 3 Test Score: _____

Week 6 Chapter 4: Reactions in Aqueous Solutions	
Assignments	Notes
Week 6, Day 1 ☐ 4.1.1 Properties of Solutions (10:55) ☐ 4.1.2 CIA Demonstration: The Electric Pickle (1:41)	
Week 6, Day 2 ☐ 4.1.3 Concentrations of Solutions (15:03) ☐ 4.1.4 Factors Determining Solubility (10:54)	
Week 6, Day 3 ☐ 4.2.1 Precipitation Reactions (10:59) ☐ 4.2.2 Acid-Base Reactions (14:22)	
Week 6, Day 4 ☐ 4.2.3 Oxidation-Reduction Reactions (10:48) ☐ 4.3.1 Acid-Base Titrations (12:11)	
Week 6, Day 5 ☐ 4.3.2 Solving Titration Problems (6:04) ☐ 4.3.3 Gravimetric Analysis (10:21)	

Week 7 Chapter 4 Test Chapter 5: Gases	
Assignments	Notes
Week 7, Day 1 ☐ Chapter 4 Practice Test	
Week 7, Day 2 ☐ Chapter 4 Test	Chapter 4 Test Score: _____
Week 7, Day 3 ☐ 5.1.1 Properties of Gases (14:20) ☐ 5.1.2 Boyle's Law (6:56)	
Week 7, Day 4 ☐ 5.1.3 Charles's Law (7:16) ☐ 5.1.4 The Combined Gas Law (6:28)	
Week 7, Day 5 ☐ 5.1.5 Avogadro's Law (6:13) ☐ 5.1.6 CIA Demonstration: The Potato Cannon (3:12)	

Week 8 Chapter 5: Gases	
Assignments	Notes
Week 8, Day 1 ☐ 5.2.1 The Ideal Gas Law (8:39) ☐ 5.2.2 Partial Pressure and Dalton's Law (10:04)	
Week 8, Day 2 ☐ 5.2.3 Applications of the Gas Laws (14:21)	
Week 8, Day 3 ☐ 5.2.4 The Kinetic-Molecular Theory of Gases (13:55) ☐ 5.2.5 CIA Demonstration: The Ammonia Fountain (3:50)	
Week 8, Day 4 ☐ 5.3.1 Molecular Speeds (9:21) ☐ 5.3.2 Effusion and Diffusion (12:55)	
Week 8, Day 5 ☐ 5.4.1 Comparing Real and Ideal Gases (11:14)	

Week 9 Chapter 5 Test Chapter 6: Thermochemistry	
Assignments	Notes
Week 9, Day 1 ☐ Chapter 5 Practice Test	
Week 9, Day 2 ☐ Chapter 5 Test	Chapter 5 Test Score: _____
Week 9, Day 3 ☐ 6.1.1 The Nature of Energy (13:14) ☐ 6.1.2 Energy, Calories, and Nutrition (12:05)	
Week 9, Day 4 ☐ 6.1.3 The First Law of Thermodynamics (10:56) ☐ 6.1.4 Work (10:18)	
Week 9, Day 5 ☐ 6.1.5 Heat (10:23) ☐ 6.1.6 CIA Demonstration: Cool Fire (4:05)	

Week 10 Chapter 6: Thermochemistry Chapter 6 Test	
Assignments	Notes
Week 10, Day 1 ☐ 6.2.1 Heats of Reaction: Enthalpy (13:07) ☐ 6.2.2 CIA Demonstration: The Thermite Reaction (2:35)	

Week 10, Day 2 ☐ 6.3.1 Constant Pressure Calorimetry (9:03) ☐ 6.3.2 Bomb Calorimetry (Constant Volume) (8:53)	
Week 10, Day 3 ☐ 6.4.1 Hess's Law (9:46) ☐ 6.4.2 Enthalpies of Formation (12:43)	
Week 10, Day 4 ☐ Chapter 6 Practice Test	
Week 10, Day 5 ☐ Chapter 6 Test	Chapter 6 Test Score: _____

Week 11 Chapter 7: Modern Atomic Theory	
Assignments	Notes
Week 11, Day 1 ☐ 7.1.1 The Wave Nature of Light (12:13) ☐ 7.1.2 Absorption and Emission (12:20)	
Week 11, Day 2 ☐ 7.1.3 CIA Demonstration: Luminol (1:28) ☐ 7.1.4 The Ultraviolet Catastrophe (13:29)	
Week 11, Day 3 ☐ 7.1.5 The Photoelectric Effect (12:13) ☐ 7.1.6 The Bohr Model (13:26)	
Week 11, Day 4 ☐ 7.1.7 The Heisenberg Uncertainty Principle (8:30) ☐ 7.2.1 The Wave Nature of Matter (13:46)	
Week 11, Day 5 ☐ 7.2.2 Radial Solutions to the Schrödinger Equation (14:16) ☐ 7.2.3 Angular Solutions to the Schrödinger Equation (10:58)	

Week 12 Chapter 7: Modern Atomic Theory Chapter 7 Test	
Assignments	Notes
Week 12, Day 1 ☐ 7.3.1 Atomic Orbital Size (9:38) ☐ 7.3.2 Atomic Orbital Shapes and Quantum Numbers (11:54)	
Week 12, Day 2 ☐ 7.3.3 Atomic Orbital Energy (11:52)	
Week 12, Day 3 ☐ Chapter 7 Practice Test	
Week 12, Day 4 ☐ Chapter 7 Test	Chapter 7 Test Score: _____

Week 12, Day 5 ☐ 8.1.1 Understanding Electron Spin (9:08) ☐ 8.1.2 Electron Shielding (9:05)	

Week 13 Chapter 8: Electron Configurations and Periodicity Chapter 8 Test	
Assignments	Notes
Week 13, Day 1 ☐ 8.1.3 Electron Configurations through Neon (10:15) ☐ 8.1.4 Electron Configurations beyond Neon (9:38) ☐ 8.1.5 Periodic Relationships (11:16)	
Week 13, Day 2 ☐ 8.2.1 Periods and Atomic Size (10:19) ☐ 8.2.2 Ionization Energy (17:20) ☐ 8.2.3 Electron Affinity (12:40)	
Week 13, Day 3 ☐ 8.2.4 An Introduction to Electronegativity (5:57) ☐ 8.3.1 Hydrogen, Alkali Metals and Alkaline Earth Metals (15:02) ☐ 8.3.2 Transition Metals and Nonmetals (13:27)	
Week 13, Day 4 ☐ Chapter 8 Practice Test	
Week 13, Day 5 ☐ Chapter 8 Test	Chapter 8 Test Score: _____

Week 14 Chapter 9: Chemical Bonding: Fundamental Concepts Chapter 9 Test	
Assignments	Notes
Week 14, Day 1 ☐ 9.1.1 Valence Electrons and Chemical Bonding (8:26) ☐ 9.1.2 Ionic Bonds (11:35) ☐ 9.1.3 CIA Demonstration: Conductivity Apparatus-Ionic versus Covalent Bonds (4:57)	
Week 14, Day 2 ☐ 9.2.1 Lewis Dot Structures for Covalent Bonds (12:02) ☐ 9.2.2 Predicting Lewis Dot Structures (9:57) ☐ 9.3.1 Resonance Structures (10:02) ☐ 9.3.2 Formal Charge (12:07)	
Week 14, Day 3 ☐ 9.3.3 Electronegativity, Formal Charge, and Resonance (14:10) ☐ 9.4.1 Bond Properties (12:30) ☐ 9.4.2 Using Bond Dissociation Energies (9:56)	
Week 14, Day 4	

☐ Chapter 9 Practice Test	
Week 14, Day 5 ☐ Chapter 9 Test	Chapter 9 Test Score: _____

Week 15 Chapter 10: Molecular Geometry and Bonding Theory	
Assignments	Notes
Week 15, Day 1 ☐ 10.1.1 Valence-Shell Electron-Pair Repulsion Theory (11:37) ☐ 10.1.2 Molecular Shapes for Steric Numbers 2-4 (10:26) ☐ 10.1.3 Molecular Shapes for Steric Numbers 5 & 6 (15:46)	
Week 15, Day 2 ☐ 10.1.4 Predicting Molecular Characteristics Using VSEPR Theory (15:07) ☐ 10.1.5 Molecular Shapes: The AXE Method, Part 1 (17:13) ☐ 10.1.6 Molecular Shapes: The AXE Method, Part 2 (14:14)	
Week 15, Day 3 ☐ 10.2.1 Valence Bond Theory (10:41) ☐ 10.2.2 An Introduction to Hybrid Orbitals (14:10)	
Week 15, Day 4 ☐ 10.2.3 Pi Bonds (8:37) ☐ 10.2.4 Molecular Orbital Theory (12:40) ☐ 10.2.5 Applications of the Molecular Orbital Theory (14:26)	
Week 15, Day 5 ☐ 10.2.6 Beyond Homonuclear Diatomics (14:15) ☐ 10.2.7 CIA Demonstration: The Paramagnetism of Oxygen (3:28)	

Week 16 Chapter 10 Test Chapter 11: Oxidation-Reduction Reactions	
Assignments	Notes
Week 16, Day 1 ☐ Chapter 10 Practice Test	
Week 16, Day 2 ☐ Chapter 10 Test	Chapter 10 Test Score: _____
Week 16, Day 3 ☐ 11.1.1 Oxidation Numbers (13:49)	
Week 16, Day 4 ☐ 11.1.2 Balancing Redox Reactions by the Oxidation Number Method (11:12) ☐ 11.1.3 Balancing Redox Reactions Using the Half-Reaction Method (11:32)	
Week 16, Day 5 ☐ 11.1.4 The Activity Series of the Elements (10:28)	

☐ 11.1.5 CIA Demonstration: The Reaction between Al and Br_2 (2:44)	

Week 17 Chapter 11 Test Chapter 12: Condensed Phases: Liquids and Solids	
Assignments	Notes
Week 17, Day 1 ☐ Chapter 11 Practice Test	
Week 17, Day 2 ☐ Chapter 11 Test	Chapter 11 Test Score: _____
Week 17, Day 3 ☐ 12.1.1 An Introduction to Intermolecular Forces and States of Matter (12:02) ☐ 12.1.2 Intermolecular Forces (17:05) ☐ 12.2.1 Properties of Liquids (15:08)	
Week 17, Day 4 ☐ 12.2.2 CIA Demonstration: Boiling Water at Reduced Pressure (5:45) ☐ 12.2.3 Vapor Pressure and Boiling Point (10:45) ☐ 12.2.4 Molecular Structure and Boiling Point (12:19)	
Week 17, Day 5 ☐ 12.2.5 Phase Diagrams (17:47) ☐ 12.2.6 CIA Demonstration: Boiling Water in a Paper Cup (3:55) ☐ 12.3.1 Types of Solids (13:40)	

Week 18 Chapter 12: Condensed Phases: Liquids and Solids Chapter 12 Test	
Assignments	Notes
Week 18, Day 1 ☐ 12.3.2 CIA Demonstration: The Conductivity of Molten Salts (3:47) ☐ 12.3.3 Crystal Structure (14:59)	
Week 18, Day 2 ☐ 12.3.4 Calculating Atomic Mass and Radius from a Unit Cell (11:02)	
Week 18, Day 3 ☐ 12.3.5 Crystal Packing (11:08)	
Week 18, Day 4 ☐ Chapter 12 Practice Test	
Week 18, Day 5 ☐ Chapter 12 Test	Chapter 12 Test Score: _____

Week 19 Chapter 13: Physical Properties of Solutions	
Assignments	Notes
Week 19, Day 1 ☐ 13.1.1 Types of Solutions (10:22) ☐ 13.1.2 Molarity and the Mole Fraction (12:08) ☐ 13.1.3 Molality (10:16)	
Week 19, Day 2 ☐ 13.1.4 Energy and the Solution Process (11:57) ☐ 13.2.1 Temperature Change and Solubility (11:35) ☐ 13.2.2 Extractions (7:25)	
Week 19, Day 3 ☐ 13.2.3 Pressure Change and Solubility (10:58) ☐ 13.3.1 Vapor Pressure Lowering (12:15)	
Week 19, Day 4 ☐ 13.3.2 Boiling Point Elevation and Freezing Point Depression (9:50) ☐ 13.3.4 Osmosis (13:10)	
Week 19, Day 5 ☐ 13.3.5 Colligative Properties of Ionic Solutions (10:47)	

Week 20 Chapter 13 Test Midterm Exam	
Assignments	Notes
Week 20, Day 1 ☐ Chapter 13 Practice Test	
Week 20, Day 2 ☐ Chapter 13 Test	Chapter 13 Test Score: _____
Week 20, Day 3 ☐ Study for Midterm Exam	
Week 20, Day 4 ☐ Practice Midterm Exam	
Week 20, Day 5 ☐ **Midterm Exam**	Midterm Exam Score: _____

Week 21 Chapter 14: Chemical Kinetics	
Assignments	Notes
Week 21, Day 1 ☐ 14.1.1 An Introduction to Reaction Rates (12:59) ☐ 14.1.2 Rate Laws: How the Reaction Rate Depends on Concentration (12:55) ☐ 14.1.3 Determining the Form of a Rate Law (9:23)	
Week 21, Day 2	

☐ 14.2.1 First-Order Reactions (11:05) ☐ 14.2.2 Second-Order Reactions (8:16) ☐ 14.2.3 A Kinetics Problem (6:30)	
Week 21, Day 3 ☐ 14.3.1 The Collision Model (12:08) ☐ 14.3.2 The Arrhenius Equation (8:10) ☐ 14.3.3 Using the Arrhenius Equation (6:21)	
Week 21, Day 4 ☐ 14.4.1 Defining the Molecularity of a Reaction (8:29) ☐ 14.4.2 Determining the Rate Laws of Elementary Reactions (9:38) ☐ 14.4.3 Calculating the Rate Laws of Multistep Reactions (12:58)	
Week 21, Day 5 ☐ 14.4.4 Steady State Kinetics (16:10) ☐ 14.5.1 Catalysts and Types of Catalysts (12:56) ☐ 14.5.2 A Word About Laboratory Safety (0:23)	

Week 22 Chapter 14: Chemical Kinetics Chapter 14 Test Chapter 15: Chemical Equilibrium	
Assignments	Notes
Week 22, Day 1 ☐ 14.5.3 CIA Demonstration: Elephant Snot (2:22) ☐ 14.5.4 CIA Demonstration: The Cobalt(II)-Catalyzed Reaction of Potassium Sodium Tartrate (4:56) ☐ 14.5.5 CIA Demonstration: The Copper-Catalyzed Decomposition of Acetone (1:17)	
Week 22, Day 2 ☐ Chapter 14 Practice Test	
Week 22, Day 3 ☐ Chapter 14 Test	Chapter 14 Test Score: _____
Week 22, Day 4 ☐ 15.1.1 The Concept of Equilibrium (11:18) ☐ 15.1.2 The Law of Mass Action and Types of Equilibrium (11:33) ☐ 15.1.3 Converting Between K_c and) K_p (8:41	
Week 22, Day 5 ☐ 15.2.1 Approaching Chemical Equilibrium (14:05) ☐ 15.2.2 Predicting the Direction of a Reaction (9:51) ☐ 15.2.3 Strategies for Solving Equilibrium Problems (10:41)	

Week 23 Chapter 15: Chemical Equilibrium Chapter 15 Test	
Assignments	Notes
Week 23, Day 1 ☐ 15.2.4 Solving Problems Far from Equilibrium (12:35) ☐ 15.2.5 An Equilibrium Problem Using the Quadratic Equation (10:21)	
Week 23, Day 2 ☐ 15.3.1 Le Châtelier's Principle (5:55) ☐ 15.3.2 The Effect of Changing Amounts on Equilibrium (8:15) ☐ 15.3.3 The Effect of Pressure and Volume on Equilibrium (11:40)	
Week 23, Day 3 ☐ 15.3.4 The Effects of Temperature and Catalysts on Equilibrium (10:29) ☐ 15.3.5 CIA Demonstration: NO_2/N_2O_4 (2:49) ☐ 15.3.6 CIA Demonstration: Shifting the Equilibrium of $FeSCN^{2+}$ (4:14)	
Week 23, Day 4 ☐ Chapter 15 Practice Test	
Week 23, Day 5 ☐ Chapter 15 Test	Chapter 15 Test Score: _____

Week 24 Chapter 16: Acids and Bases	
Assignments	Notes
Week 24, Day 1 ☐ 16.1.1 Arrhenius/Brønsted-Lowry Definitions of Acids and Bases (11:44) ☐ 16.1.2 Hydronium, Hydroxide, and the pH Scale (11:38)	
Week 24, Day 2 ☐ 16.2.1 Strong Acids and Bases (9:02) ☐ 16.2.2 CIA Demonstration: Natural Acid-Base Indicators (4:39) ☐ 16.2.3 Weak Acids (14:17)	
Week 24, Day 3 ☐ 16.2.4 Weak Bases (8:50) ☐ 16.2.5 Lewis Acids and Bases (10:24)	
Week 24, Day 4 ☐ 16.2.6 Trends in Acid and Base Strengths (15:00)	
Week 24, Day 5 ☐ Chapter 16 Practice Test	

Week 25 Chapter 16 Test Chapter 17: Equilibrium in Aqueous Solution	
Assignments	Notes
Week 25, Day 1 ☐ Chapter 16 Test	Chapter 16 Test Score: _____
Week 25, Day 2 ☐ 17.1.1 Strong Acid-Strong Base and Weak Acid-Strong Base Reactions (10:16) ☐ 17.1.2 Strong Acid-Weak Base and Weak Acid-Weak Base Reactions (12:13) ☐ 17.1.3 The Common Ion Effect (9:18)	
Week 25, Day 3 ☐ 17.2.1 An Introduction to Buffers (13:31) ☐ 17.2.2 CIA Demonstration: Buffers in Action (4:00) ☐ 17.2.3 Acidic Buffers (11:04)	
Week 25, Day 4 ☐ 17.2.4 Basic Buffers (8:21) ☐ 17.2.5 The Henderson-Hasselbalch Equation (13:27)	
Week 25, Day 5 ☐ 17.3.1 Strong Acid-Strong Base Titration (12:26) ☐ 17.3.2 CIA Demonstration: Barium Hydroxide-Sulfuric Acid Titration (3:48) ☐ 17.3.3 Weak Acid-Strong Base Titration (13:43)	

Week 26 Chapter 17: Equilibrium in Aqueous Solution Chapter 17 Test	
Assignments	Notes
Week 26, Day 1 ☐ 17.3.4 Polyprotic Acid-Strong Base Titration (14:34) ☐ 17.3.5 Weak Base-Strong Acid Titration (10:19) ☐ 17.3.6 Acid-Base Indicators (13:15)	
Week 26, Day 2 ☐ 17.4.1 The Solubility Product Constant (10:07) ☐ 17.4.2 CIA Demonstration: Silver Chloride and Ammonia (2:24)	
Week 26, Day 3 ☐ 17.4.3 Solubility and the Common Ion Effect (7:57) ☐ 17.4.4 Fractional Precipitation (12:22)	
Week 26, Day 4 ☐ Chapter 17 Practice Test	
Week 26, Day 5 ☐ Chapter 17 Test	Chapter 17 Test Score: _____

Week 27 Chapter 18: Thermodynamics Chapter 18 Test	
Assignments	Notes
Week 27, Day 1 ☐ 18.1.1 Spontaneous Processes (12:26) ☐ 18.2.1 Entropy and the Second Law of Thermodynamics (14:22) ☐ 18.2.2 Entropy and Temperature (14:13)	
Week 27, Day 2 ☐ 18.3.1 Gibbs Free Energy (10:58) ☐ 18.3.2 Standard Free Energy Changes of Formation (12:03)	
Week 27, Day 3 ☐ 18.4.1 Enthalpy and Entropy Contributions to K (14:13) ☐ 18.4.2 The Temperature Dependence of K (10:46) ☐ 18.4.3 Free Energy Away from Equilibrium (11:38)	
Week 27, Day 4 ☐ Chapter 18 Practice Test	
Week 27, Day 5 ☐ Chapter 18 Test	Chapter 18 Test Score: _____

Week 28 Chapter 19: Electrochemistry	
Assignments	Notes
Week 28, Day 1 ☐ 19.1.1 Reviewing Oxidation-Reduction Reactions (10:16) ☐ 19.2.1 Electrochemical Cells (9:28)	
Week 28, Day 2 ☐ 19.2.2 Electromotive Force (12:29) ☐ 19.2.3 Standard Reduction Potentials (13:10) ☐ 19.2.4 Using Standard Reduction Potentials (13:20)	
Week 28, Day 3 ☐ 19.2.5 The Nernst Equation (12:04) ☐ 19.2.6 Electrochemical Determinants of Equilibria (10:47)	
Week 28, Day 4 ☐ 19.3.1 Batteries (11:01) ☐ 19.3.2 CIA Demonstration: The Fruit-Powered Clock (6:44) ☐ 19.4.1 Corrosion and the Prevention of Corrosion (11:35)	
Week 28, Day 5 ☐ 19.5.1 Electrolytic Cells (11:03) ☐ 19.5.2 The Stoichiometry of Electrolysis (9:22)	

Week 29 Chapter 19: Electrochemistry Chapter 19 Test Chapter 20: Nuclear Chemistry	
Assignments	Notes
Week 29, Day 1 ☐ Chapter 19 Practice Test	
Week 29, Day 2 ☐ Chapter 19 Test	Chapter 19 Test Score: _____
Week 29, Day 3 ☐ 20.1.1 The Nature of Radioactivity (11:54) ☐ 20.1.2 The Stability of Atomic Nuclei (10:28) ☐ 20.1.3 Binding Energy (11:45)	
Week 29, Day 4 ☐ 20.2.1 Rates of Disintegration Reactions (14:48) ☐ 20.2.2 Radiochemical Dating (10:29)	
Week 29, Day 5 ☐ 20.3.1 Nuclear Fission (11:36) ☐ 20.3.2 Nuclear Fusion (11:05) ☐ 20.3.3 Applications of Nuclear Chemistry (13:46)	

Week 30 Chapter 20: Nuclear Chemistry Chapter 20 Test Chapter 21: Chemistry of Metals	
Assignments	Notes
Week 30, Day 1 ☐ Chapter 20 Practice Test	
Week 30, Day 2 ☐ Chapter 20 Test	Chapter 20 Test Score: _____
Week 30, Day 3 ☐ 21.1.1 Metallurgical Processes (14:28) ☐ 21.1.2 Band Theory of Conductivity (11:20) ☐ 21.1.3 Intrinsic Semiconductors (8:35)	
Week 30, Day 4 ☐ 21.1.4 Doped Semiconductors (8:49) ☐ 21.2.1 The Alkali Metals (12:01)	
Week 30, Day 5 ☐ 21.2.2 The Alkaline Earth Metals (14:07) ☐ 21.2.3 Aluminum (12:51) ☐ 21.2.4 CIA Demonstration: The Reaction between Al and Br_2 (2:44)	

Week 31 Chapter 21: Chemistry of Metals Chapter 21 Test Chapter 22: Nonmetals	
Assignments	Notes
Week 31, Day 1 ☐ Chapter 21 Practice Test	
Week 31, Day 2 ☐ Chapter 21 Test	Chapter 21 Test Score: _____
Week 31, Day 3 ☐ 22.1.1 General Properties of Nonmetals (6:32) ☐ 22.1.2 Hydrogen (13:35)	
Week 31, Day 4 ☐ 22.2.1 General Properties of Carbon (14:22) ☐ 22.2.2 Silicon (7:47)	
Week 31, Day 5 ☐ 22.3.1 Nitrogen (9:15) ☐ 22.3.2 Phosphorus (12:48)	

Week 32 Chapter 22: Nonmetals Chapter 22 Test	
Assignments	Notes
Week 32, Day 1 ☐ 22.4.1 Oxygen (9:53) ☐ 22.4.2 CIA Demonstration: Creating Acid Rain (5:32)	
Week 32, Day 2 ☐ 22.4.3 Sulfur (10:45) ☐ 22.5.1 Halogens (13:28)	
Week 32, Day 3 ☐ 22.5.2 Aqueous Halogen Compounds (9:36) ☐ 22.6.1 Properties of Noble Gases (9:13)	
Week 32, Day 4 ☐ Chapter 22 Practice Test	
Week 32, Day 5 ☐ Chapter 22 Test	Chapter 22 Test Score: _____

Week 33 *Optional: Chapter 23: Instructional Laboratory Demonstrations*	
Assignments	Notes
Week 33, Day 1 ☐ 23.1.1 CIA Demonstrations: Laboratory Safety (3:36) ☐ 23.1.2 CIA Demonstrations: Chromatography (10:48)	

Week 33, Day 2 ☐ 23.1.3 CIA Demonstrations: Distillations (10:26) ☐ 23.1.4 CIA Demonstrations: Pipetting (8:14)	
Week 33, Day 3 ☐ 23.1.5 CIA Demonstrations: Dilutions (4:58) ☐ 23.1.6 CIA Demonstrations: Titrations (12:49)	
Week 33, Day 4 ☐ 23.1.7 CIA Demonstrations: Extractions (8:14) ☐ 23.1.8 CIA Demonstration: Filtrations (9:10)	
Week 33, Day 5 ☐ 23.1.9 CIA Demonstrations: Weighing on an Analytical Balance (9:47) ☐ 23.1.10 Recrystallization (7:09)	

Week 34 Final Exam	
Assignments	Notes
Week 34, Day 1 ☐ Study for Final Exam	
Week 34, Day 2 ☐ Study for Final Exam	
Week 34, Day 3 ☐ Study for Final Exam	
Week 34, Day 4 ☐ Practice Final Exam	
Week 34, Day 5 ☐ **Final Exam**	Final Exam Test Score: _____