

AP Chemistry Curriculum Organization

Over the years College Board has repeatedly reorganized the AP Chemistry curriculum – meaning they change the order of the chapters, give chapters new titles, try to “chunk” topics into Big Ideas etc. This has resulted in lots of great online resources and textbooks being “out of order” compared to what College Board publishes. This makes it hard when trying to use these resources since the numbering of chapters/units/topics no longer match. This document is intended to help you keep track of these different systems so you know what you are looking at, or where to find things. I will use my own personal preference of what order to teach the topics in – over the years I have found an order that seems to be the most logical for students and seems to set them up for success the most. While my order may differ than other teachers’ or College Board’s order, the content and topics should be essentially the same. Remember...the chemistry will be the same no matter what number or title we give the chapter! ☺

DVHS AP Chem Unit Order	College Board Unit Order	College Board’s “Big Four Ideas”
0 – Honors Chemistry Review 1 – Thermochemistry 2 – Thermodynamics 3 – Kinetics 4 – Equilibrium 5 – Atomic Structure & Periodicity 6 – Bonding 7 – Gases 8 – Intermolecular Forces 9 – Solutions 10 – Acid Base 11 – Electrochemistry 12 – Full Exam Review	1 – Atomic Structure & Properties 2 – Compound Structure & Properties 3 – Properties of Substances & Mixtures (formally IMFs) 4 – Chemical Reactions 5 – Kinetics 6 – Thermochemistry 7 – Equilibrium 8 – Acids and Bases 9 – Thermodynamics & Electrochemistry	1 – Scale Proportion & Quantity 2 – Structure & Properties 3 – Transformations 4 – Energy <i>The current way they chunk the Big Ideas.</i>
		College Board’s “Big Six Ideas”
		1 – Atoms 2 – Bonds 3 – Reactions 4 – Rates 5 – Thermodynamics 6 – Equilibrium <i>This was an old way of chunking the Big Ideas.</i>

Tro Textbook Unit Order		
1 – Matter, Measurement 2 – Atoms and Elements 3 – Molecules, Compounds & Chemical Equations 4 – Chemical Quantities and Aqueous Reactions 5 – Gases 6 – Thermochemistry 7 – The Quantum Mechanical Model of the Atom	8 – Periodic Properties of the Elements 9 – Chemical Bonding I: The Lewis Model 10 – Chemical Bonding II: Molecular Shapes, Valence Bond Theory, and Molecular Orbital Theory 11 – Liquids, Solids, and Intermolecular Forces	13 – Solutions 14 – Chemical Kinetics 15 – Chemical Equilibrium 16 – Acids and Bases 17 – Aqueous Ionic Equilibrium 18 – Free Energy and Thermodynamics 19 – Electrochemistry <i>Chapters 12, 20-25 are skipped</i>

College Board “Science Practices”	DVHS Honors Chem Unit Order	
1 – Models & Representations 2 – Question & Method 3 – Representing Data & Phenomena 4 – Model Analysis 5 – Mathematical Routines 6 – Argumentation	1 – Chemistry Basics & Atomic Structure 2 – Nuclear Chemistry 3 – Electrons 4 – Periodic Table 5 – Bonding & Structure 6 – Reactions 7 – Stoichiometry	8 – Advanced Chemical Ratios 9 – Gas Laws 10 – Thermochemistry 11 – Solutions 12 – Kinetics 13 – Equilibrium 14 – Acids and Bases

Website Links

Here are some links to things that will be helpful related to the Course Description and the topics that are taught during the year.

College Board Course Description	“Condensed” Course Content List	Mrs. Farmer’s Class Website
https://tinyurl.com/mrzprf9x 	https://tinyurl.com/26k9y5ae 	www.mychemistryclass.net 

AP Chemistry Course at a Glance

This is a list of the broad "learning objectives" in College Board's Course Description. It is not a full list of every fact, skill, piece of info you need to learn this year. The order here is not the order we go in the class. As always, see the full Course Description and the class website for more details.

Unit 1 Atomic Structure and Properties		Unit 2 Compound Structure and Properties		Unit 3 Properties of Substances and Mixtures	
1.1	Moles and Molar Mass	2.1	Types of Chemical Bonds	3.1	Intermolecular and Interparticle Forces
1.2	Mass Spectra of Elements	2.2	Intermolecular Force and Potential Energy	3.2	Properties of Solids
1.3	Elemental Composition of Pure Substances	2.3	Structure of Ionic Solids	3.3	Solids, Liquids, and Gases
1.4	Composition of Mixtures	2.4	Structure of Metals and Alloys	3.4	Ideal Gas Law
1.5	Atomic Structure and Electron Configuration	2.5	Lewis Diagrams	3.5	Kinetics Molecular Theory
1.6	Photoelectron Spectroscopy	2.6	Resonance and Formal Charge	3.6	Deviation from Ideal Gas Law
1.7	Periodic Trends	2.7	VSEPR and Bond Hybridization	3.7	Solutions and Mixtures
1.8	Valence Electrons and Ionic Compounds	Unit 5 Kinetics		3.8	Representations of Solutions
Unit 4 Chemical Reactions		5.1	Reaction Rates	3.9	Separation of Solutions and Mixtures
4.1	Introduction for Reactions	5.2	Introduction to Rate Law	3.10	Solubility
4.2	Net Ionic Equations	5.3	Concentration Changes Over Time	3.11	Spectroscopy and the Electromagnetic Spectrum
4.3	Representations of Reactions	5.4	Elementary Reactions	3.12	Properties of Photons
4.4	Physical and Chemical Changes	5.5	Collision Model	3.13	Beer-Lambert Law
4.5	Stoichiometry	5.6	Reaction Energy Profile	Unit 6 Thermochemistry	
4.6	Introduction to Titration	5.7	Introduction to Reaction Mechanisms	6.1	Endothermic and Exothermic Processes
4.7	Types of Chemical Reactions	5.8	Reaction Mechanism and Rate Law	6.2	Energy Diagrams
4.8	Introduction to Acid-Base Reactions	5.9	Pre-Equilibrium Approximation	6.3	Heat Transfer and Thermal Equilibrium
4.9	Oxidation-Reduction (Redox) Reactions	5.10	Multistep Reaction Energy Profile	6.4	Heat Capacity and Calorimetry
Unit 7 Equilibrium		5.11	Catalysis	6.5	Energy of Phase Changes
7.1	Introduction to Equilibrium	Unit 8 Acids and Bases		6.6	Introduction to Enthalpy of Reaction
7.2	Direction of Reversible Reactions	8.1	Introduction to Acids and Bases	6.7	Bond Energies
7.3	Reaction Quotient and Equilibrium Constant	8.2	pH and pOH of Strong Acids and Bases	6.8	Enthalpy of Formation
7.4	Calculating the Equilibrium Constant	8.3	Weak Acid and Base Equilibria	6.9	Hess's Law
7.5	Magnitude of the Equilibrium Constant	8.4	Acid-Base Reactions and Buffers	Unit 9 Thermodynamics and Electrochemistry	
7.6	Properties of the Equilibrium Constant	8.5	Acid-Base Titrations	9.1	Introduction to Entropy
7.7	Calculating Equilibrium Concentrations	8.6	Molecular Structure of Acids and Bases	9.2	Absolute Entropy and Entropy Change
7.8	Representations of Equilibrium	8.7	pH and pKa	9.3	Gibbs Free Energy and Thermodynamic Favorability
7.9	Introduction to Le Chatelier's Principle	8.8	Properties of Buffers	9.4	Thermodynamic and Kinetic Control
7.10	Reaction Quotient and Le Chatelier's Principle	8.9	Henderson-Hasselbalch Equation	9.5	Free Energy and Equilibrium
7.11	Introduction to Solubility Equilibria	8.10	Buffer Capacity	9.6	Free Energy of Dissolution
7.12	Common-Ion Effect	8.11	pH and Solubility	9.7	Coupled Reactions
				9.8	Galvanic (Voltaic) and Electrolytic Cells
				9.9	Cell Potential and Free Energy
				9.10	Cell Potential Under Nonstandard Conditions
				9.11	Electrolysis and Faraday's Law