CVA Honors Chemistry

Class Description

The Honors Chemistry course will cover topics such as the structure of atoms, structure and properties of matter, the conservation and interaction of energy and matter, and the use of Kinetic Molecular Theory to model atomic and molecular motion in chemical and physical processes. Students investigate chemistry concepts through experiences using the process of inquiry. Chemistry students use the periodic table to help with the identification of elements with particular properties, recognize patterns that lead to explain chemical reactivity and bond formation. They use the IUPAC nomenclature in order to predict chemical names for ionic (binary and ternary), acidic, and inorganic covalent compounds, and conduct experiments to manipulate factors that affect chemical reactions. Honors curriculum includes opportunities to go deeper into the study of the applications of chemistry.

This course has three sections: Honors Chemistry A and is the first half of the course and includes Units 1– 4. Honors Chemistry B is the second half of the course and includes Units 5– 8. Honors Chemistry Y is the entire course and includes Units 1– 8.

Click HERE Class Schedule which outlines the Units, Lessons, and Assessments for this course.

Click HERE for the State standards.

Class Outline

Unit 1: Matter
In this unit on chemistry, students explore the fundamental principles of measuring matter and energy, learning how to accurately quantify and describe different substances. The unit introduces the basics of chemistry, including the nature of matter, its various properties, and the methods used to measure these characteristics. Emphasis is placed on understanding physical and chemical properties, the distinction between elements and compounds, and the various techniques for assessing changes in matter.

Unit 2: Atoms and Elements
In this chemistry unit, students delve into atomic theory, exploring the evolution of early models to modern quantum mechanics. They study electromagnetic radiation and quantum energy models to understand how atoms absorb and emit energy, leading to the formation of spectra. The unit also covers the periodic table, highlighting periodic trends such as atomic radius, ionization energy, and electronegativity, which are essential for predicting element behavior and reactivity.

Unit 3: Molecules and Compounds
In this chemistry unit, students focus on the role of valence electrons in determining the bonding behavior of elements. They learn about ionic bonding, where electrons are transferred between atoms, and covalent bonding, where electrons are shared, to form stable compounds. The unit also covers nomenclature, teaching students how to systematically name chemical compounds and understand the rules for writing chemical formulas for both ionic and covalent substances.

Unit 4: Reactions
In this chemistry unit, students explore various types of chemical reactions, including synthesis, decomposition, and combustion, and learn how to balance chemical equations. They study the principle of conservation of mass and apply this concept to predict and analyze reactants and products.

Unit 5: Stoichiometry
In this chemistry unit, students learn about stoichiometry, the method used to calculate the quantities of reactants and products in chemical reactions based on balanced equations. They practice converting between moles, grams, and liters, and apply these calculations to determine the theoretical yield of reactions. The unit emphasizes problem-solving skills and the application of stoichiometric principles to real-world chemical processes.

Unit 6: Phases of Matter
In this chemistry unit, students explore the different phases of matter—solid, liquid, and gas—and understand how substances transition between these phases through phase changes like melting, freezing, and evaporation. They study the principles of gas laws, including Boyle's, Charles's, and Avogadro's laws, to understand how gases behave under varying conditions of pressure, temperature, and volume.

Unit 7: Energy of Matter
n this chemistry unit, students investigate the role of energy in chemical reactions, focusing on the differences between exothermic reactions, which release energy, and endothermic reactions, which absorb energy. They learn about enthalpy, the measure of heat content in a system, and how it relates to the energy changes during reactions. The unit also covers chemical equilibrium, explaining how reactions reach a state of balance where the rates of the forward and reverse reactions are equal, and how changes in conditions can shift the equilibrium position.

Unit 8: Solutions
In this chemistry unit, students explore the properties and behaviors of solutions, including how to calculate molarity to express the concentration of solutes. They learn about dilutions, understanding how to adjust concentrations by adding solvent and apply dilution equations to solve related problems. The unit also covers acids and bases, emphasizing how they interact in solutions and affect chemical reactions.

CVA Work Policy

- All classwork must be completed and submitted using the links in CTLS by the DUE DATE listed on the Class Schedule.
- Work should be completed in the order it is assigned on the Class Schedule.
- All work submitted on time will be graded within 48 hours.
- Assignments not submitted by the due date will be marked missing. Missing assignments are calculated as zeros in the coursework average. When students submit missing work, the assignment will be graded and calculated into the coursework average.

The CVA term ends prior to the end of the traditional school semester. The final date work will be accepted each term is posted on the CVA website (cobbvirtualacademy.org) and the Class Schedule.

Grading

Grades for this course are calculated based on category percentages as follows:

Category	Weight
Assignments	20%
Experiments	25%
Quizzes	15%
Tests	30%
Final Exam	10%

CVA Exemption Incentive

To qualify for CVA's exemption incentive and exempt the Final Exam/lowest unit test or major assessment grade, CVA students must:

- Submit ALL assignments on OR before the due date
- Have an 85% coursework average or higher before the final exam
- Have no more than one academic integrity violation

Academic Integrity

Academic integrity is the cornerstone of learning at CVA and we take the integrity and authenticity of student work very seriously. When academic integrity is maintained, students will make decisions based on values that will prepare them to be productive, meaningful, and ethical citizens.

Students are required to abide by the CVA Academic Integrity Policy. Academic dishonesty in any form will not be tolerated. The CVA Academic Integrity Policy outlines the consequences if students fail to maintain academic integrity in their course. For additional information, the CVA Academic Integrity Policy is posted on the CVA website.

Consequence	Occurrence			
	1st	2nd	3rd	4th
Parent contact by teacher	✓	✓	✓	✓
Resubmit work for full credit	✓			
Resubmit work for half credit		✓		
Automatic Zero			✓	✓
Parent contact by CVA Administration			✓	✓
Mandated proctored exam or course work				✓
Local school is notified of Academic Integrity violation		✓	✓	✓
Other as designated by CVA or local school administration	✓	✓	✓	✓

General Information

- The Cobb Teaching and Learning System (CTLS) is the platform used to deliver Cobb Virtual Academy classes.
- Students must earn 100% on the Student Orientation Quiz located inside each CVA Digital Classroom before they begin their Student Coursework.
- All coursework must be submitted through CTLS.
- All CCSD students have access to Microsoft 365 applications and must submit assignments in the requested format.
- Students in all sections of this course will take an online final exam during the window of time published on the CVA website and the Class Schedule.

Course Specific Information

There is no required textbook for this course. All content is digital and available in the online course.

Technology Requirements

CTLS is geo-restricted to the United States.

- A modern PC or Mac Computer
    - Lightweight or mobile devices such as Chromebooks, iPads, Android tablets, or smartphones **may not** be compatible with many of our courses.
    - Windows or Mac based computer
- Access to Microsoft 365
- Internet access

CVA Expectations

Student

- Maintain consistent access to a computer and internet
- Login to the course daily and review the announcements
- Adhere to the deadlines listed on the Class Schedule
- Read and promptly respond to teacher communication
- Contact the teacher with questions
- Manage your time wisely

Teacher

- Welcome Phone Call in the first two weeks
- 24 – 48-hour turnaround on all communication
- 24 – 48-hour turnaround on grading for items submitted by the due date
- Provide relevant feedback on assignments
- Be accessible via email and phone or text during published hours
- Provide two or more live sessions per term

Remind

CVA students and parents are automatically enrolled in their CVA teacher's Remind class based on the phone numbers provided during registration. If a parent and student provide the same cell phone number, they will not sync to Remind and will have to join the class manually using the join code posted on the Teacher Information page of their course.

Student Support

A student's first source for support is their CVA teacher. However, additional support is available. The **CVA Learning Center** is staffed with facilitators and is available both **in person** and **virtually**.

Facilitators can assist students with getting started, class navigation, assignment instructions, submitting work, technical issues, and strategies for online success.

The in-person Learning Center is on the Cobb Horizon High School campus at 1765 The Exchange Atlanta, GA.

All CVA students are enrolled in the Student Support digital classroom which provides access to the Virtual Learning Center (VLC). Students use the CTLS chat feature to send a message to the Student Support Team during the hours it is open.

Live Sessions

Your teacher will post live session information to the Class Board.