



Chemistry I Syllabus



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Course Description

This chemistry course is designed to meet the needs of the student who plans to continue taking science courses or take a college chemistry class. The course will cover important laboratory and research skills. Additionally, you will learn about chemical and physical properties of matter. Chemistry is required to graduate. Sometimes learning will come easily and sometimes it may not. If it does not come easily, do not get frustrated; remember that if you think you can and you work hard, then you will get smart! One very important thing for you to remember is that YOU are the one ultimately responsible for your learning. No one else can do it for you. But we will be here to help all that we can!

Units of Study

<u>Tri A</u>	<u>Tri B</u>
Unit 1 - Matter and the Atom	Unit 7 - Chemical Reactions
Unit 2 - The Periodic Table	Unit 8 - The Mole
Unit 3 - Ionic Bonding and Naming	Unit 9 - Stoichiometry
Unit 4 - Covalent Bonding and Naming	Unit 10 - Chemical Equilibrium and Kinetics
Unit 5 - Solution Chemistry	Unit 11 - Gas Behavior
Unit 6 - Measurement and Data Collection	

Required Materials

- Pencil
- Notebook
- Folder
- Scientific Calculator recommended.

Textbook - Chemistry: Matter and Change Glencoe 2008

We will usually have enough textbooks to send one home with a student as well as provide them in class. Some teachers may choose to provide a digital copy of the textbook to their students.

Grading

Grades in this classroom are not based purely on points. Instead they are determined by the quality of work received. Determinations for the grades are roughly outlined below.

A students: work very hard, make school their biggest priority, know when assignments are due, study for tests even when there is no homework, usually have the most fun in class, keep a daily planner, actively seek help when they need it.

B students: work hard, school is a high priority, almost always turn assignments in on time, come to class prepared.

C students: do most of the required work, rarely study besides doing homework, would not change social plans if there is a big test.

D students: often don't come prepared to class, have no idea when assignments are due, don't study.

F students: are simply not interested, have few study skills.

I (incomplete/0%) grades are used to communicate when students have not done the required work for the assignment. The student must either finish or redo the assignment to earn a grade

<u>Grading Categories</u>	<u>Grading Scale</u>
Assessments (test/quiz/lab) - 80% of final grade	93%=A, 90%=A-
Assignments - 10% of final grade	87%=B+, 83%=B, 80%=B-
Final Exam - 10% of final grade	77%=C+, 73%=C, 70%=C-
	67%=D+, 60%=D
	<60%=F
	<50% = Incomplete

Grading modifications may be made for students with IEP or 504 plans.

Retake Policy

Students will be allowed to retake the mastery quizzes. Unit tests may be retaken at the discretion of the teacher. The retake score is limited to 85% (B). Retaking a test must be done before or after school. The retake score will be the final score, even if worse than the original test.

Late Work

If you miss a day you have 2 days to make up assignments or labs.

If you are absent the day of the test, expect to take it the day you return.

Late = 75% of the grade you would have gotten if it were on time. 0% of credit after the unit test.

Learning Targets

Unit 1 - Matter and the Atom

- I can explain the importance of learning chemistry in terms of how chemistry is learned in the world.
- I can recognize and state the general steps scientists use in solving problems
- I can recognize and use safety procedures in the lab.
- I can recognize and state the use of common laboratory equipment.
- I can explain the difference between solids, liquids, and gases relative to their shapes, volumes, and spaces between atoms or molecules.
- I can explain the difference between a physical and chemical change given an example of each.
- I can explain the difference between a physical property and chemical property and give examples of each.
- I can classify matter as a pure substance or a mixture, determine/describe the difference between a compound and an element, and determine/describe the difference between homogenous and heterogenous mixtures.
- I can determine which separation technique is best for separating mixtures based on the constituents' phases.

Unit 2 - The Periodic Table

- I can locate and describe the three parts of the atom.
- I can determine the atomic number, mass number, and number of protons, neutrons, and electrons if given an isotope symbol.
- I can calculate atomic weight of isotopes if given their masses and percent abundance.
- I can explain the progression of how we view the atom from John Dalton all the way until the modern Wave Mechanical Model.
- I can explain how it is we see fireworks on the atomic level and know the difference between an atom at ground state and excited state.
- I can relate the amount of energy released by an atom according to the colored flame that is seen.
- I can write the electron configuration and draw orbital diagrams for any atom on the periodic table.
- I can explain the difference between an orbit and an orbital.
- I can explain and know how to find valence electrons.
- I can locate and describe properties of metals, nonmetals, and metalloids.
- I can use my periodic table to predict atomic size, ion size, ionization energy, and chemical properties.
- I can graph, identify, compare periodic and group trends for atomic radius, ionic radius, ionization energy, and electronegativity.
- I can identify what family a certain atom belongs to on the periodic table, and explain their properties.

Unit 3 - Ionic Bonding and Naming

- I can determine whether atoms gain or lose electrons to become ions. And I can determine how to write and name these ions.
- I can represent ionic bonds with electron dot notation (octet rule).
- I can explain how and why neutral atoms become ions.
- I can identify which type of elements form ionic and/or covalent bonds.
- I can write formulas for and name ionic compounds.

Unit 4 - Covalent Bonding and Naming

- I can describe the difference between ionic, polar covalent, and nonpolar covalent bonds.
- I can use electronegativity values to predict bond type.
- I can circle this learning target, show my teacher, and get 10 bonus points.
- I can write formulas for and name covalent molecules, including acids.
- I can show/draw how atoms in a molecule covalently bond (Lewis structures and octet rule).
- I can determine polarity of molecules and show by drawing dipoles.
- I can understand intermolecular attractive forces.
- I can explain water's physical properties based on intermolecular attractive forces.
- I can understand how bond type affects compound's physical and chemical properties.

Unit 5 - Solution Chemistry

- I can define solvent, solute, unsaturated, supersaturated, saturated, soluble, and insoluble.
- I can use a solubility chart to determine a number of grams needed to make various types of solutions.
- I can explain the process of solvation and relate it to competing intramolecular and intermolecular forces of attraction.
- I can make unsaturated, saturated, and supersaturated solutions. I can determine the number of significant figures a measurement has.

Unit 6 - Measurement and Data Collection

- I can determine the number of significant figures a measurement has.
- I can calculate and answer based on measurements and round to the proper number of significant figures.
- I can convert numbers from standard notation to scientific notation and vice versa.
- I can use dimensional analysis to convert units whether converting metric to metric, or English to metric.
- I can measure things with the right level of precision and accuracy.

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| | <ul style="list-style-type: none">• I can use algebra to manipulate variables to solve for the unknown variable. |
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Parent/Guardian Input Sheet

(Please return this to your teacher ASAP)

Student's Name _____

Your Name _____

**Circle your preferred method
of communication.**

Phone _____

e-mail _____

Please answer the following questions.

GENERAL INFORMATION (Please provide any information about your student that may assist me in teaching him/her.)

COMMENTS/CONCERNS:

☐ I/We do NOT have regular access to the Internet. (Other accommodations will be made.)

☐ I prefer to communicate in a language other than English: _____.

☐ I HAVE READ THE ATTACHED SYLLABUS AND BEHAVIORAL POLICIES AND I UNDERSTAND ALL EXPECTATIONS.

Parent/Guardian Signature

Student Signature