Honors Chemistry

Cumberland International Early College High School
Location of class: Mon/Tues/Thurs/Fri: FSU Lyons Science Bld. Room 304W
Wednesday: FSU Lyons Science Bld. Lab Room 316

Instructor: Mrs. Nizio carolynnizio@ccs.k12.nc.us **Phone**: (910)672-2830 ext. 2979
Edmodo Group Code: 3auqe4 Students are required to join and parents are welcome to join!

Required Text: Prentice Hall Chemistry

CHEMISTRY- THE STUDY OF THE COMPOSITION OF MATTER AND THE CHANGES THAT IT UNDERGOES

BRING TO CLASS EVERY DAY:

a. Pencil, colored pencils, tape, notecards
b. composition notebook for CHEM ONLY
c. Scientific Calculator (TI-30 or higher) $8.94 at Walmart

Course Topics in order:

1. **Atoms, Ions, Isotopes**
2. **Electrons**
3. **Bonding/Nomenclature**
4. **Periodic Table**
5. **Types of bonding**
6. **Reactions**
7. **Stoichiometry**
8. **Thermochemistry**
9. **Gases**
10. **Reaction Rates**
11. **Equilibrium**
12. **Solutions**
13. **Nuclear Chemistry**

Standard /Objectives

A. Matter properties and change

Chm.1.1 Analyze the structure of atoms and ions.
- 1.1.1 Analyze the structure of atoms, isotopes, and ions.
- 1.1.2 Analyze an atom in terms of the location of electrons.
- 1.1.3 Explain the emission of electromagnetic radiation in spectral form in terms of the Bohr model.
- 1.1.4 Explain the process of radioactive decay by the use of nuclear equations and half-life.

Chm.1.2 Understand the bonding that occurs in simple compounds in terms of bond type, strength, and properties.
- 1.2.1 Compare (qualitatively) the relative strengths of ionic, covalent, and metallic bonds.
- 1.2.2 Infer the type of bond and chemical formula formed between atoms.
- 1.2.3 Compare inter- and intra- particle forces.
- 1.2.4 Interpret the name and formula of compounds using IUPAC convention.
- 1.2.5 Compare the properties of ionic, covalent, metallic, and network compounds.

Chm.1.3 Understand the physical and chemical properties of atoms based on their position in the Periodic Table.
- 1.3.1 Classify the components of a periodic table (period, group, metal, metalloid, nonmetal, transition).
- 1.3.2 Infer the physical properties (atomic radius, metallic and nonmetallic characteristics) of an element based on its position on the Periodic Table.
- 1.3.3 Infer the atomic size, reactivity, electronegativity, and ionization energy of an element from its position in the Periodic Table.

B. Energy: Conservation and Transfer

Chm.2.1 Understand the relationship among pressure, temperature, volume, and phase.

2.1.1 Explain the energetic nature of phase changes.

2.1.2 Explain heating and cooling curves (heat of fusion, heat of vaporization, heat, melting point, and boiling point).

2.1.3 Interpret the data presented in phase diagrams.

2.1.4 Infer simple calorimetric calculations based on the concepts of heat lost equals heat gained and specific heat.

2.1.5 Explain the relationships between pressure, temperature, volume, and quantity of gas both qualitative and quantitative.

Chm.2.2 Analyze chemical reactions in terms of quantities, product formation, and energy.

2.2.1 Explain the energy content of a chemical reaction.

2.2.2 Analyze the evidence of chemical change.

2.2.3 Analyze the law of conservation of matter and how it applies to various types of chemical equations (synthesis, decomposition, single replacement, double replacement, and combustion).

2.2.4 Analyze the stoichiometric relationships inherent in a chemical reaction.

2.2.5 Analyze quantitatively the composition of a substance (empirical formula, molecular formula, percent composition, and hydrates).

C. Interactions of Energy and Matter

Chm.3.1 Understand the factors affecting rate of reaction and chemical equilibrium.

3.1.1 Explain the factors that affect the rate of a reaction (temperature, concentration, particle size, and presence of a catalyst).

3.1.2 Explain the conditions of a system at equilibrium.

3.1.3 Infer the shift in equilibrium when a stress is applied to a chemical system (Le Chatelier's Principle).

Chm.3.2 Understand solutions and the solution process.

3.2.1 Classify substances using the hydronium and hydroxide ion

3.2.2 Summarize the properties of acids and bases.

3.2.3 Infer the quantitative nature of a solution (molarity, dilution, and titration with a 1:1 molar ratio).

3.2.4 Summarize the properties of solutions.

3.2.5 Interpret solubility diagrams.

3.2.6 Explain the solution process

http://www.ncpublicschools.org/docs/acre/standards/new-standards/science/chemistry.pdf

STUDENT BEHAVIOR/TEACHER EXPECTATIONS:

a. **Tardy- _____or later is Tardy. You will sign in ON YOUR WAY IN if tardy. According to www.time.gov (which is the same as Verizon phones)**

b. **Be Respectful:**

to each other and to your teacher. ex. DO NOT answer cell phones during class!!
Chem is not an "easy" subject, so focus.
Cheating-automatic failing grade for cheater AND cheatee.

Disciplinary and Tardy Procedures

1st offense- verbal warning
2nd-verbal/call parents
3rd-after school detention/call parents
4th-administrative referral

Note-this is for minor offenses, major offenses may skip down to referral

EVALUATION:

a. **Notebooks can be graded at any time. If you do not have it, it's a zero.**
    i. **Table of Contents: CORNELL notes and foldables labeled**
    ii. **Keep it neat and in order of dates!!!**
b. **You will use PENCIL on ALL assignments (I will take off points for assignments done in pen.)**
c. **Honors students cannot retake tests; therefore, be prepared the first time.**
d. **We will have a test or quiz every Friday. We may have pop quizzes randomly.**
e. **Work is due within 3 min of the start of class. After 3 min you may turn in work for 50% credit . I will not accept late work after 1 day late.**
f. **Tutoring is available on Tues/Thurs, but you must tell me at least two days in advance if you plan on coming.**
g. **Labs: we will conduct labs in FSU's Science Laboratory. The FSU Waiver of Liability must be signed and returned prior to being in the laboratory. Our first lab will be this Wednesday. If you fail to complete the form, you will receive 0 for each lab that is missed. Labs are a large portion of your grade, therefore if you fail to complete this form, you are in danger of failing the course.**

Grading will be weighted as follows:
40% Tests/Projects/Papers
25%Quizes/Lab
20% Classwork/Participation
15%Homework

I have read and understand the syllabus

Student Signature: _____ Date:_____

Parent Signature: _____ Date:_____

This will be the 1st "assignment" in your interactive chemistry notebook AKA your external brain☺