**Honors Gifted Chemistry**

**Mr. C-Rodriguez- Room 375**

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This is a first year Honors Chemistry course that will prepare students that will be continuing to AP/IB Chemistry and students that are interested in STEM careers.

Things to know:

* TI Calculators 84
* Class Folder
* Pen and pencil
* All Labs will be typed or written in blue/black pen. Never use white out in a lab report and only write on front side of paper.
* Exams will be worth 3 grades
* Labs will be worth 2 grades
* Quizzes and Homework will count 1 grade.
* Make up will only be given for excused absences and will be scheduled after school. It will be different from the test/quiz you missed.
* Participation in class discussions will be expected from all students.
* Attendance is important so please make sure you limit your absences and that you are in class on time.
* Respect for EVERYONE in class is expected at all times.
* Lab Fee $5.00

Material to be covered:

**First Nine weeks:**

1. Introduction to Significant Figures and it uses in calculations.
2. Lab Safety Procedures
3. Introduction to Chemistry
4. Describing Matter **(How are properties used to describe matter?)** 
   1. Classification of Matter
   2. Properties of Matter
   3. Density calculations
   4. Separation Techniques
5. Periodic Table **(What Is the stuff that the universe is made of?)** 
   1. Describe Changes in the Atomic Model Over Time
   2. Explore The Scientific Theory of Atoms
   3. Relate Properties of Atoms and Their Position in the Periodic Table
6. Electrons In Atoms **(Why do metals emit different colors when heated?)** 
   1. Electron Configuration
   2. Electromagnetic Spectrum and Atomic Emission Spectra
   3. Quantum of Energy
   4. Calculating Frequency, Wavelength and Energy
7. Chemical Bonding and Molecular Structures **(What keeps substances together?)** 
   1. Develop the Concept of Bonding
   2. Types of Bonds
   3. Bonding Structures
   4. Intermolecular Forces

**Second Nine Weeks:**

1. Nomenclature and Formulas **(How do we name compounds?)** 
   * 1. Writing Formulas
     2. Naming Ionic and Covalent Compounds
2. Energy and States **(How can matter change its form?)** 
   * 1. Develop concept of molecular motion (Kinetic-Molecular Theory (KMT))
     2. Review concept of Forces of Attraction
     3. Develop concept of phase changes

III. Chemical Reactions **(How do things change over time?)** Chemical changes

* + 1. Develop the concept of conservation of mass as introduction to chemical reactions
    2. Classification of Chemical Reactions
    3. Balancing Chemical Reactions

IV. The Mole **(How do we count very small particles?)**

* + 1. Develop the concept of the Mole
    2. Conversions with the Mole
    3. Empirical and Molecular Formulas

**Third Nine Weeks:**

1. Stoichiometry **(How do scientists predict and calculate quantities?)** 
   * 1. Mole Ratios in Chemical Reactions
     2. Stoichiometric Calculations
2. Solutions **(Why does salt dissolve in water?)** 
   * 1. The Special Properties of Water
     2. Water as a Universal Solvent
     3. How substances dissolve in other substances (Like dissolves like)
     4. Components of a Solution
     5. Concentration vs. Dilution
3. Acids and Bases **(How do antacids neutralize stomach acid?)** 
   * 1. Acids and bases
     2. Properties of Acids and Bases
     3. pH Scale
     4. Strengths of Acids and Bases
     5. Neutralization
     6. pH Based on Hydronium and Hydroxide Concentrations

**Fourth Nine weeks**

1. Reaction Rates **(Why do some reactions occur faster than others?)** 
   * 1. Develop the concept of Collision Theory
     2. Factors Affecting Reaction Rates
     3. Energy Diagrams
     4. Develop the Concept of Reversible Reactions and Equilibrium
2. Gas Behavior **(Why is the atmospheric pressure low during a hurricane?)** 
   * 1. Review KMT and Properties of Gases
     2. Gas Laws
3. Nuclear Chemistry **(What are the risks of living near a nuclear power plant?)** 
   * 1. Nuclear Radiation
     2. Chemical and nuclear reactions.
     3. Real world examples of chemical and nuclear reactions

I have read the Honors Chemistry Syllabus and Lab Safety Rules for Mr. C-Rodriguez’s class and agree to abide by them.

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Student Signature Parent Signature

Print Student Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_