

**MIAMI-DADE COUNTY PUBLIC SCHOOLS
DISTRICT PACING GUIDE**

YEAR-AT-A-GLANCE

| CHEMISTRY I HONORS | | COURSE CODE: 200335001 | |
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| 1st Nine Weeks | 2nd Nine Weeks | 3rd Nine Weeks | 4th Nine Weeks |
| <p>I. Introduction (What are things made of and how do they change?) A. Develop Interest in Chemistry B. Lab Safety/Classroom Expectations</p> <p>II. Describing Matter (How are properties used to describe matter?) A. Classification of Matter B. Properties of Matter C. Density calculations D. Separation Techniques</p> <p>III. Periodic Table (What is the stuff that the universe is made of?) A. Describe Changes in the Atomic Model Over Time B. Explore the Scientific Theory of Atoms C. Relate Properties of Atoms and Their Position in the Periodic Table</p> <p>IV. Electrons In Atoms (Why do metals emit different colors when heated?) A. Electron Configuration B. Electromagnetic Spectrum and Atomic Emission Spectra C. Quantum of Energy D. Calculating frequency, wavelength and energy</p> <p>V. Chemical Bonding and Molecular Structures (What keeps substances together?) A. Develop the concept of bonding B. Types of Bonds C. Bonding Structures D. Intermolecular Forces</p> | <p>VI. Nomenclature and Formulas (How do we name compounds?) A. Writing Formulas B. Naming Ionic and Covalent Compounds</p> <p>VII. Energy and States (How can matter change its form?) A. Develop Concept of Molecular Motion (Kinetic-Molecular Theory (KMT)) B. Review Concept of Forces of attraction C. Develop concept of Phase changes</p> <p>VIII. Chemical Reactions (How do things change over time?) A. Chemical changes B. Develop the concept of conservation of mass as introduction to Chemical Reactions C. Classification of Chemical Reactions D. Predicting the products of Chemical reactions E. Balancing Chemical Reactions</p> <p>IX. The Mole (How do we count very small particles?) A. Develop the Concept of the Mole B. Conversions with the mole C. Percent Composition D. Empirical and Molecular Formulas</p> | <p>X. Stoichiometry (How do scientists predict and calculate quantities?) A. Mole Ratios in Chemical Reactions B. Stoichiometric Calculations</p> <p>XI. Solutions (Why does salt dissolve in water?) A. The Special Properties of Water B. Water as a Universal Solvent C. How substances dissolve in other substances (Like dissolves like) D. Components of a Solution E. Concentration vs. Dilution</p> <p>XII. Acids and Bases (How do antacids neutralize stomach acid?) A. Acids and bases B. Properties of Acids and Bases C. pH Scale D. Strengths of Acids and Bases E. Neutralization F. pH Based On Hydronium And Hydroxide Concentrations G. Environmental Quality:</p> <p>XIII. Oxidation-Reduction (How do batteries use chemistry to produce electricity?) A. Redox reactions as oxidation and reduction processes. B. Electrolytic cells and Voltaic cells. C. Neutralization reactions D. Redox reactions in non living systems: E. Redox reactions in living systems.</p> | <p>XIV. Reaction Rates (Why do some reactions occur faster than others?) A. Develop The Concept of The Collision Theory B. Factors Affecting Reaction Rates C. Energy Diagrams D. Develop The Concept of Reversible Reactions and Equilibrium</p> <p>XV. Gas Behavior (Why is the atmospheric pressure low during a hurricane?) A. Review KMT and Properties of Gases B. Gas Laws</p> <p>XVI. Nuclear Chemistry (What are the risks of living near a nuclear power plant?) A. Nuclear Radiation B. Decay and Half-Life C. Fusion and Fission D. Real world examples of chemical and nuclear reactions</p> <p>XVII. Organic Chemistry (Why are there so many different types of carbon compounds?) A. Properties of carbon atoms in organic molecules B. The role of carbon in the development from simple to complex hydrocarbons C. Functional Groups</p> <p>XVIII. Thermodynamics (How does energy drive chemical reactions?) A. First Law of Thermodynamics B. Second Law of Thermodynamics</p> |