

SCIENCE CURRICULUM SUMMARY

The purpose of the Science Curriculum Summary is to present an overview of the Chemistry I & Honors Chemistry I curriculum. Parents are the intended audience of the Science Curriculum Summary.

Atomic Theory

Parts of the atom
Mass and volume relationships within atoms
Isotopes and ions
Radioactivity
Electronic structure
Development of the model of the atom

Matter and its Changes

States of matter and changes
Classification of matter
Physical properties of matter
Chemical properties of matter
Laws of conservation of mass & energy
Kinetic molecular theory

The Periodic Table

Development of the Periodic Table (Mendeleev, Moseley, Seaborg)
Arrangement of the Periodic Table
Periodicity of trends (patterns) on the Periodic Table

Chemical Bonding

Types of chemical bonding (ionic, covalent, metallic)
Lewis structure and molecular architecture
Intermolecular Forces

Chemical Mathematics & Nomenclature

Dimensional analysis (percent composition, empirical and molecular formulas)
Stoichiometry
Writing and balancing ordinary chemical equations
Balancing oxidation & reduction equations
Writing formulas and names for inorganic compounds
Solving gas law problems
Determination of pH & pOH

Thermodynamics (Honors)

Temperature and heat (appropriate units)
Specific heat calculations
Heat of formation, reaction and combustion
Hess's Law

Gas Laws

Various Gas Laws including: Boyles', Charles', gyl-Lussac's, Dalton's , Ideal Gas Law & Combined Gal Law
Stoichiometry with gases
Graham's Law (Qualitative for Chem. I; Quantitative for Honors)

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**CHEMISTRY I & HONORS CHEMISTRY I
GRADES 10-11-12**

Acids & Bases

Properties of acids
Properties of bases
Significance and determination of pH & pOH

Scientific Inquiry Skills

Appropriate use of technologies
Use of higher order thinking skills
Practical graphical data presentations
Use of appropriate laboratory procedures and techniques

Solutions

Types of solutions (solute – solvent combinations)
Solution processes (dissolution of ionic and compounds)
Colligative properties
Concentration calculations (majority, molality, percent solution)
Interpretation of solubility curves