

CHEMISTRY HONORS (LAB SCIENCE)

Grade Level: 10, 11, 12

Credit: 0.5 or 1.0

Prerequisite: Algebra 1, Geometry, at least 1st semester of Algebra 2

Chemistry Honors uses an atoms-first approach and coverage includes the parts of the atom and the basics of nuclear chemistry; electronic configurations of atoms including orbitals, covalent and ionic bonding, Lewis structures, and VSEPR theory; intermolecular forces; periodic properties, nomenclature, and descriptive chemistry; chemical reactions, including balancing, the mole concept, stoichiometry (including limiting reagents), equilibrium; thermodynamics, solutions and electrolytes, concentration; gas laws, including static and non-static conditions; acids, bases, pH, and equilibrium; and organic functional groups, and an introduction to biochemistry. Students must show proficiency in dimensional analysis, provide cogent short answers to various concept questions, demonstrate the ability to research information not directly provided in the lessons and cite sources correctly, and complete safe, home-based experiments that include full laboratory reports.

Chemistry Honors Lessons

Teacher Message

Lesson 1: How Do Scientists Think

Lesson 2: What Is The World Made of Anyway?

Lesson 3: What is Matter Made Of?

Lesson 4: The Science of Electrons

Lesson 5: Your Best Friend in Chemistry: The Periodic Table

Lesson 6: Your Best Friend in Chemistry: The Periodic Table - Part 2

Lesson 7: How to Talk About Chemicals

Lesson 8: Bonds - they Hold It All Together

Lesson 9: Bonds - they Hold It All Together - Part 2



Lab 1: Ionic Salts

Lesson 10: The Mole (Not the Furry Animal)

Lesson 11: Chemistry - It's Explosive

Lesson 12: Your Second Best Friend in Chemistry - Stoichiometry

Lesson 13: Your Second Best Friend in Chemistry - Stoichiometry - Part 2

Lesson 14: Why Does Matter Even Matter?

Lab 2: States of Matter

Lesson 15: Gases: The Most Energetic Matter

Lesson 16: Water - A Multipurpose Solution

Lab 3: Boiling Point Elevation

Lesson 17: What is Heat, Anyway?

Lab 4: Thermochemistry

Lesson 18: Chemical Reactions - Fast & Slow

Lab 5: Temperature & Rates of Reactions

Lesson 19: Chemical Reactions - Forwards & Backwards

Lesson 20: Chaos and Order in the Universe

Lesson 21: Acids & Bases - Far From Basic

Lab 6: Red Cabbage Indicator

Lesson 22: Redox Reactions - It's All Electrons

Lesson 23: The Power of Nuclear Chemistry

Lesson 24: Chemistry in the Body: aka Biochemistry