World Vision Academy Chemistry 11-12

Curriculum Overview

Chemistry 11	Chemistry 11 explores the world of science on an atomic level and is designed to build students' knowledge of core chemistry concepts. The course focuses on big ideas related to atoms, molecules and moles, chemical reactions and energy, solution chemistry, and organic chemistry. Chemistry 11 emphasizes real-life applications of chemistry and helps students connect their learning to the world around them. Several virtual labs and one hands-on home lab deepen student understanding of content and scaffold important lab skills that will be required for future science courses and a variety of post-secondary programs. Chemistry 11 provides a solid foundation for students carrying on to Chemistry 12. Big Ideas: • Introduction to laboratory hazards and general safety rules • Measurement and density • Properties and classification of matter and energy • Nomenclature and ways of naming compounds • Understanding Mole • Different types of chemical reactions • Review of periodic table, bonds and patterns • Properties and characters of solvents • Organic chemistry
Chemistry 12	Chemistry 12 explores chemical reactions: why and how they happen, and chemical systems in equilibrium. This course builds on students' knowledge of core chemistry concepts and focuses on big ideas related to reaction rates, dynamic equilibrium, saturated solutions, acid and base strength and oxidation/reduction. The course is divided into five units each focused on one big idea. Each topic has video lessons, supplemental material, and suggested workbook readings. There are quickcheck quizzes, quizzes, assignments and a unit test to both improve and measure learning. Course Content and Suggested Timelines The suggested timeline indicates the approximate time that will spent on each unit of study: **Big Ideas:** • Collision theory and reaction mechanisms • Understanding reaction rates • Analyzing reacting systems

	• Solubility equilibriu8m • Properties of acids, bases and salts • Essential components of reacting systems • Stoichiometry of redox reactions

•

Students develop and strengthen essential transferable skills by going through physics courses. Students should reflect on their learning progress with guidance from their parents.