



Kelloggsville Virtual School

Chemistry

Course Description

2 Semesters; 1 credit

Chemistry offers a curriculum that emphasizes students' understanding of fundamental chemistry concepts while helping them acquire tools to be conversant in a society highly influenced by science and technology.

The course provides students with opportunities to learn and practice critical scientific skills within the context of relevant scientific questions. Topics include the nature of science; the importance of chemistry to society, atomic structure, bonding in matter, chemical reactions, redox reactions, electrochemistry, phases of matter, equilibrium and kinetics, acids and bases, thermodynamics, quantum mechanics, nuclear reactions, organic chemistry, and alternative energy.

Scientific inquiry skills are embedded in the direct instruction, wherein students learn to ask scientific questions, form and test hypotheses, and use logic and evidence to draw conclusions about concepts. Lab activities reinforce critical thinking, writing, and communication skills and help students develop a deeper understanding of the nature of science.

Throughout this course, students are given an opportunity to understand how chemistry concepts are applied in technology and engineering. Journal and Practice activities provide additional opportunities for students to apply learned concepts and practice their writing skills. This course is built to state standards. **"Dry" Labs require no materials other than a spiral notebook. Hands on labs require a list of materials that a teacher will share at the beginning of the course if applicable.**

Unit 1: Chemistry and Society

Unit 2: Atomic Structure

Unit 3: Bonding in Matter

Unit 4: Chemical Reactions

Unit 5: Chemistry at Work

Unit 6: Semester 1 Review and Exam

Unit 7: Energy in Matter

Unit 8: Equilibrium and Kinetics

Unit 9: Transferring Energy

Unit 10: Quantum and Nuclear Chemistry

Unit 11: Energy in Organic Molecules

Unit 12: Semester 2 Review and Exam