

Honors: Chemistry

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 the 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 concepts learned in the Studies and practice their writing skills. Exploration activities challenge students to deconstruct scientific claims, analyze scientific articles, and suggest follow-up experiments or topics for further research. The content is based on the American Association for the Advancement of Science (AAAS) Project 2061 benchmarks and the National Science Education Standards and is aligned with state standards.