

Science: Grades 9-12 Chemistry

(Chemistry Applications in the Community; Chemistry; AP Chemistry)

Scientific Inquiry

- Constructs questions that initiate and guide scientific investigations
- Designs and conducts scientific investigations using established procedures
- Uses technology and mathematics to systematically gather and interpret data
- Formulates and revises scientific conclusions, explanations based on scientific knowledge, logic, and evidence
- Recognizes, analyzes and evaluates alternative explanations and models
- Evaluates and defends scientific arguments, acknowledging references and contributions of others
- Communicates the scientific inquiry process

History and Nature of Science

- Describes how the work of scientists is influenced by their ethical standards and how scientists use the habits of mind
- Compares and contrasts the difference between science and other ways of knowing
- Assesses the work of scientists showing that all scientific ideas depend on experimental and observational confirmation
- Describes the contributions of diverse cultures to scientific knowledge
- Describes the changes to scientific thinking that evolve over time

Science in Personal and Social Perspectives

- Employs the tenets of personal and community health, safety and resource conservation
- Identifies, accesses and uses data to construct explanations
- Assesses potential danger and risk of natural and human-induced hazards
- Analyzes the relationships among technological, social, political, and economic changes and the impact on humans and the environment

Chemistry

- Communicates understanding of atomic structure
- Analyzes and demonstrates relationship between structure and properties of matter
- Assesses interactions of matter
- Distinguishes the interactions of matter and energy
- Summarizes and illustrates conservation of energy