

Science: Grades 9-12

Earth and Space Sciences

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

Science and Technology

- Uses technology to perform scientific investigations
- Identifies and/or constructs a problem or need in relation to technological designs
- Constructs understandings about the fields of science and engineering, the interrelationships between science and technology
- analyzes innovations in science and technology

Earth and Space Sciences

- Categorizes sources and types of energy in the Earth's systems
- Investigates relationships among weather, cloud cover, land features, atmosphere and oceans
- Critiques theories on origin and evolution of the Earth's systems and other celestial bodies