

# Physical Science

## COURSE DESCRIPTION

Physical Science includes one semester of Physics and one of Chemistry, which address the Minnesota physical science standards for high school. The ultimate goal is to help students become scientifically literate citizens.

### Chemistry

Students will study chemistry concepts with processes and skills integrated throughout the semester in a standards-aligned, lab-based setting. Students will:

- Investigate atomic theory
- Explore matter, its properties, and its interactions
- Study the Periodic Table
- Investigate nuclear energy
- Research nuclear power and fossil fuels
- Experiment with chemical reactions
- Study chemical bonding
- Investigate solutions/mixtures and acids/bases
- Describe the Law of Conservation of Mass and Energy
- Explore thermodynamics
- Design and conduct an original research project

### Physics

Students will study physics concepts with processes and skills integrated throughout the semester in a standards-aligned, lab-based setting. Students will:

- Investigate motion
- Explore forces
- Study Newton's Laws
- Explore kinetic and potential energy
- Investigate work and power
- Research electricity and its production
- Study the electromagnetic spectrum
- Study the solar system
- Examine research on stars and galaxies
- Explore evidence for the origin of the universe
- Design and conduct an original research project

### Grades 11 or 12

**Term/Credit:** Each semester = one credit

**Prerequisite:** Successful Completion of Environmental Foundations