

Overall Expectations:

ESV.02 investigate energy transformations and the law of conservation of energy, and solve related problems;

ESV.03 demonstrate an understanding of work, efficiency, power, gravitational potential energy, kinetic energy, nuclear energy, and thermal energy and its transfer (heat).

Specific Expectations:

ES2.03 use the law of conservation of energy to solve problems in simple situations involving work, gravitational potential energy, kinetic energy, and thermal energy and its transfer (heat) [AI];

ES2.04 plan and conduct inquiries involving transformations between gravitational potential energy and kinetic energy (e.g., using a pendulum, a falling ball, an object rolling down a ramp) to test the law of conservation of energy [IP, PR];

ES2.08 investigate the relationship between the concepts of conservation of mass and conservation of energy, and solve problems using the mass-energy equivalence [PR, AI];

ES3.01 describe a variety of energy transfers and transformations, and explain them using the law of conservation of energy;

ES3.02 explain the concepts of and interrelationships between energy, work, and power, and identify and describe their related units.