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:

ES2.01 use appropriate terminology related to energy transformations, including, but not limited to: *mechanical energy*, *gravitational potential energy*, *kinetic energy*, *work*, *power*, *fission*, *fusion*, *heat*, *heat capacity*, *temperature*, and *latent heat* [C];
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];
ES3.03 explain the following concepts, giving examples of each, and identify their related units: *thermal energy*, *kinetic energy*, *gravitational potential energy*, *heat*, *specific heat capacity*, *specific latent heat*, *power*, and *efficiency*.