

Brunswick School Department

Science

Grade 7: Mechanical Energy

Adopted:

Unit Overview

In this unit, students learn that energy can take many forms. They experience several phenomena involving the Law of Conservation of Energy. Mechanical energy, specifically the interactions between kinetic and potential energy, are a focus. The unit next leads into how this mechanical energy causes forces to act upon objects.

Essential Understandings

- Energy comes in a variety of forms.
- Energy cannot be created or destroyed, only converted (changed from one form to another), or transferred (moved) from place to place.
- A system of objects may contain stored (potential) energy, depending on their relative positions
- Kinetic energy (energy of motion) is proportional to the mass and the speed of a moving object.
- Forces may transfer energy between objects.

Priority Standards and Performance Indicators

(as based on Next Generation Science Standards)

P.S. S-1 Demonstrate an understanding of energy and matter.

d. Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system.

P.S. S-5 Demonstrate an understanding of stability and change.

a. Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object.

Next Generation Standards Addressed in this Unit

- MS-PS3-5 Construct, use, and present arguments to support the claim that when the motion energy of an object changes, energy is transferred to or from the object.

Brunswick School Department
Science
Grade 7: Mechanical Energy

Adopted:

Examples of Formative / Summative Assessments

- Pre-Assessment Moving Around
- Labs
- Activities
- Quizzes
- Discussions
- Handouts
- Home work
- Motion Assessment

Sample Texts and Materials/Resources

University of Colorado PhET simulations
PBS Learning Media