

67. Energy and Its Use (Potential and Kinetic Energy)

Classroom Activity: A simple exercise illustrating how a rocket uses energy to fly and what forces act on it during flight

Grade: 5

Strand(s): Understanding Earth and Space Systems

This task addresses the following overall expectations:

- investigate energy transformation and conservation;
- demonstrate an understanding of the various forms and sources of energy and the ways in which energy can be transformed and conserved.

and the following specific expectations:

- follow established safety procedures for using tools and materials use scientific inquiry/research skills to investigate issues related to energy and resource conservation
- use technological problem-solving skills to design, build, and test a device that transforms one form of energy into another and examine ways in which energy is being "lost" in the device
- use appropriate science and technology vocabulary, including energy, heat, light, sound, electrical, mechanical, and chemical, in oral and written communication
- identify a variety of forms of energy and give examples from everyday life of how that energy is used
- describe how energy is stored and transformed in a given device or system
- recognize that energy cannot be created or destroyed but can only be changed from one form to another
- explain that energy that is apparently "lost" from a system has been transformed into other energy forms (usually heat or sound) that are not useful to the system

Assessment Categories:

- Knowledge and Understanding
- Application

Type of Activity: Classroom

Time needed to plan: 2 hours

Time needed to complete activity: 1 hour

Materials/Resources for teachers:

String (each 1.5 metres long)

Tape

Straws

Clothespin

Long balloons

Activity Description:

Inflate the balloon and use the clothespin to clamp it shut. Release the clothespin. Discuss with the class what happened? Re-inflate the balloon and clamp it shut with the clothespin.

Thread the string through the drinking straw and tape the long side of the balloon along the length of the straw. Have 2 students hold either end of the string and ensure that the string is taut.

Slide the balloon/straw assembly along the string until the clamped end reaches the end of the string. Release the Clothespin. Discuss with the class what happened and why it happened.