

HUGK12 Activity

Title: *Finding the Energy in Us All*

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DCPS Standards:

8.5.2 Describe kinetic energy as the energy of motion and potential energy as the energy of position or configuration

8.5.3 Investigate and explain how kinetic energy can be transformed into potential energy and vice versa.

8.5.4 Explain that energy is the property of many systems and can take the forms of many types of energy.

Goals:

1. List the different types of potential and mechanical energy.
2. Describe ways in which we observe potential and mechanical energy.

Objectives:

1. For students to be able to identify the different forms of energy, mechanical and potential.

Prerequisite Knowledge

Background: Energy makes things happen. Although it cannot be created nor destroyed, it can be made and transformed into different forms. Energy can either be in the form of potential energy or kinetic energy. Kinetic energy is energy in the form of motion. Examples can be a wave, object such as a car moving, and the spinning of the earth on it's axis. Potential energy is energy of position. The one that is most familiar to us is gravitational energy.

Within kinetic energy, they are forms of this kinetic energy. Electrical energy is the movement of charged particles. Radiant energy is electromagnetic energy that travels in the form of transverse waves. Radiant energy includes visible light, x-rays, and gamma rays to name a few. Thermal energy or heat is the internal energy of substances. Motion energy is the movement of object from one place to another. Objects move when forces according to Newton's Law as a force is applied. Sound is the movement of energy through substances in longitudinal waves.

Within potential energy, there are also several forms of energy. There is chemical energy which is stored in bonds between atoms that is released when these bonds are broken. There is stored mechanical energy which is energy stored in objects by the applying force. Examples include compressed springs and stretched rubber bands. There is nuclear energy which is energy stored in the nucleus of an atom. Gravitational energy is the energy of position or place.

Essential Questions:

1. What are the most common types of energy we come in contact with on a daily basis?
2. Which form of energy could be a positive source of energy but has a bad rap? Why?

Laboratory Materials:

- Clips of different types of energy
- LCD projector
- Laptop with internet access
- Pendulum to show transfer of potential energy to kinetic energy

Differentiating Instruction :

English Language Limited (ESL) students should have no problems with this activity.

Rationale:

This activity is designed to have students become familiar with the different types of energy.

Research Activity:

Students will be provided a brief overview of energy and after viewing the clips, asked to categorize the clips they have seen by the type of energy and whether it is potential or kinetic.

EVALUATION AND ASSESSMENT:

Scholars will be able to categorize the different types of energy and explain why they have chosen that answer..