

Section 3.2
Energy and the
Conservation of Energy

Without **energy**, nothing could ever _____. Although energy can't be heard, smelled, tasted, touched or seen, it appears in forms like _____ and _____. Energy flows from place to place and _____ from one form to another.

_____ is a quantity that measures the ability to cause change in a physical _____.

Give 3 examples of energy:

The unit of measurement for energy is the _____ (J). One _____ is the energy needed to push with a force of 1 _____ over a distance of 1 _____. A Joule is equivalent to a Newton meter (N m).

WORK

Work is the transfer of energy that results from applying a _____ over a _____. Both work and _____ are measured in the same units. Work is done _____ an object. The formula for work is _____. The force applied to an object **MUST** be in the same direction as the distance the object moves.

Potential Energy

Potential Energy is energy due to _____. Potential means something is _____ of becoming active. The most common type of potential energy in physics is _____. Multiplying the _____ by the _____ will give you potential energy. The formula is _____ where $h =$ _____.

Kinetic Energy

Kinetic energy is energy of _____. Kinetic energy can easily be changed to _____. Kinetic energy is equal to the amount of _____ an object can do by exerting a _____ as it stops. Kinetic energy is related to both an objects _____ and _____. Write the formula for kinetic energy below _____ Kinetic energy increases as the _____ of the speed. If you go twice as fast, your energy will increase by 4 times. If you move 4 times as fast your energy will increase by _____ times.

Complete practice problems a & b on page 69.

a.

Looking for	Solution
Given	
Relationships	

b.

Looking for	Solution
Given	
Relationships	

Conservation of Energy

When you throw a ball up it has _____ energy, as it slows down, the energy is converted into _____. The increase in potential energy is _____ as the loss of kinetic energy. Therefore, the ball's total energy remains _____.

The Law of Conservation of Energy is _____

If _____ is the only force acting on the ball, when it returns to your hand, it will have the same _____ and _____ as it started with.

Copy the information in Figure 3.15 below

Carefully study the example problem on page 71. Complete practice problems a & b.

a.

Looking for	Solution
Given	
Relationships	

b.

Looking for	Solution
Given	
Relationships	

When we "use energy" we are really _____

Explain what is meant by "power plants don't make energy" _____

Section Review

1. What are the units of energy and what do they mean?

