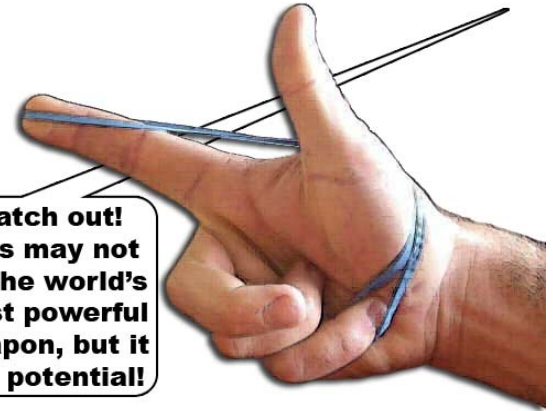


All kinds of Energy

You drop a hammer. It lands right on a nail, and bangs it in. What a lucky shot! The hammer accidentally did some useful work. Lucky it didn't fall on a mirror. That wouldn't have been useful. Since the hammer was falling, it was moving, it had energy. It did work. But if it landed on a mirror, it would have changed it for the worse. Energy is the ability to do work or cause change. Work is done, or change occurs when energy is transferred from one object to another.

There are two main types of energy – kinetic, and potential. Kinetic energy is the energy an object has due to its motion. The faster an object moves the more kinetic energy it has. The more mass a moving object has, the more kinetic energy it has too. Potential energy is stored energy *or* energy of position. The higher an object is from earth the more potential energy it has due to its position. A stretched rubber band has potential energy too. If you let go, the potential energy changes to kinetic energy, and the stretched rubber band begins to move. Potential energy and kinetic energy are able to transform from one to the other.

Kinetic and potential energy come in different forms. Thermal energy (heat) is the kinetic energy of moving molecules. Light energy (radiant energy) is the kinetic energy of moving photons. Electrical energy is the kinetic energy of moving electrons. Chemical energy is the energy stored in chemical bonds. Nuclear energy is the energy stored in the nucleus of an atom.



Answer the questions below based on the reading above, and on your knowledge of physics.

1. A strong gust of wind breaks a window. Is energy involved? Explain. _____

2. What type of energy are each of the examples below, *kinetic* or *potential*?

a. Food _____	d. Gasoline _____
b. A shining light _____	e. A working toaster _____
c. A stretched spring _____	f. A waterfall _____

3. Plants use sunlight to make carbohydrates. Carbohydrates are used by athletes for energy. Describe the energy transformations that occur. _____

