

READING PASSAGE 1: FORMS OF ENERGY



It is important to understand energy because it drives our world and all that is in it. Energy is in everything. We use energy for everything we do, from making a jump shot to baking cookies to sending astronauts into space. To use energy without understanding it is to run the risk of wasting it.

Energy is the ability to do work. For scientists, work involves change (a melting ice cube) or movement (a speeding car). Scientists classify energy in a physical sense as:

- Potential (stored) energy
- Kinetic (moving or working) energy

The different forms of potential and kinetic energy are listed in the table below.

Table 1. Forms of energy (Table courtesy of The NEED Project www.need.org)

POTENTIAL ENERGY	KINETIC ENERGY
 <p>Stored Energy or Energy of Position</p>	 <p>Energy of Motion</p>
Chemical – Energy stored in chemical bonds such as coal, natural gas, and petroleum.	Radiant – Energy that travels in electromagnetic waves such as x-rays, UV waves, visible light waves, radio waves, and infrared (heat) waves.
Nuclear – Energy in the nucleus of an atom. It is extracted through fission (splitting atoms) or through fusion (fusing atoms).	Mechanical – Movement of any object with mass from one place to another. Wind is a movement of air molecules.
Stored Mechanical – Energy in a mechanical item such as a spring that is compressed or a rubber band that has been stretched.	Electrical – Movement of electrons such as in lightening or electrons in electrical wires.
Gravitational Energy – Things that have mass and have height above the surface of the Earth have stored energy due to gravity. Water above a dam or a rock held above your head has stored gravitational energy.	Thermal – Internal energy of vibrating molecules. Temperature is a measure of this internal energy. The faster molecules within a substance vibrate, the higher the temperature
	Sound – Movement of energy by vibrating particles.