

Kinds of Energy

<http://www.eia.doe.gov/kids/energyfacts/science/formsofenergy.html>

- Sort the energy cards into two categories:
Kinetic and Potential Energy
- Match the photo cards to the definition cards
- Create a graphic organizer to show two categories of energy and the forms of energy.

POTENTIAL ENERGY is stored energy and the energy of position--gravitational energy. There are several forms of potential energy.

Nuclear Energy is energy stored in the nucleus of an atom—the energy that holds the nucleus together. The energy can be released when the nuclei are combined or split apart. **Nuclear power plants** split the nuclei of uranium atoms in a process called **fission**. The **sun** combines the nuclei of hydrogen atoms in a process called **fusion**. Scientists are working on creating fusion energy on earth, so that someday there might be fusion power plants.

Gravitational Energy is the energy of position or place. A rock resting at the top of a hill contains gravitational potential energy. **Hydropower**, such as water in a reservoir behind a dam, is an example of gravitational potential energy.

Stored Mechanical Energy is energy stored in objects by the application of a force. **Compressed springs** and **stretched rubber bands** are examples of stored mechanical energy.

Chemical Energy is energy stored in the bonds of atoms and molecules. It is the energy that holds these particles together. **Biomass, petroleum, natural gas, and propane** are examples of stored chemical energy.

KINETIC ENERGY

is motion--of waves, electrons, atoms, molecules, substances, and objects.

Motion Energy is the *movement* of objects and substances from one place to another. Objects and substances move when a force is applied according to Newton's Laws of Motion. **Wind** is an example of motion energy.

Thermal Energy, or heat, is the internal energy in substances--the vibration and *movement* of the atoms and molecules within substances. **Geothermal** energy is an example of thermal energy.

Sound is the *movement* of energy through substances in longitudinal (compression/rarefaction) waves. Sound is produced when a force causes an object or substance to vibrate--the energy is transferred through the substance in a wave.

Radiant Energy is electromagnetic energy that *travels* in transverse waves. Radiant energy includes visible light, x-rays, gamma rays and radio waves. **Light** is one type of radiant energy. **Solar energy** is an example of radiant energy.

Electrical Energy is the *movement* of electrical charges.

Everything is made of tiny particles called atoms. Atoms are made of even smaller particles called electrons, protons, and neutrons.

Applying a force can make some of the electrons move.

Electrical charges moving through a wire is called **electricity**. **Lightning** is another example of electrical energy.