Handout: Some Forms of Energy

Energy is found in different forms, such as light, heat, sound and motion. There are many forms of energy, but they can all be put into two categories: kinetic and potential.

KINETIC ENERGY	POTENTIAL ENERGY
Kinetic energy is motion––of waves, electrons, atoms, molecules, substances, and objects.	**Potential energy** is stored energy and the energy of position––gravitational energy. There are several forms of potential 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. **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. **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. **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. **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.	**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. **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. **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.

Name:_____

Questions to Handout: Some Forms of Energy

Directions: Use the handout to answer the following questions.

1. There are many forms of energy, but they can all be put into two categories: _____ and _____.
2. Kinetic energy is motion—of waves, electrons, atoms, _____, substances, etc.
3. Everything is made of even smaller particles called _____.
4. What are the 3 particles of an atom called?
5. What are some examples of electrical energy?
6. Radiant energy is _____ energy that travels in transverse waves.
7. What types of waves does radiant energy include?
8. What are some examples of radiant energy?
9. Thermal energy, or _____, is the internal energy of substances.
10. Objects and substances move when a force is applied according to _____'s Laws of Motion.
11. Define Sound.
12. How is sound produced?
13. Potential energy is stored energy and the energy of _____.
14. What are some examples of chemical energy?
15. What are some examples of stored mechanical energy?
16. Nuclear energy is energy stored in the _____ of an _____.
17. Define gravitational energy.
18. What is an example of gravitational energy?