Name: Period:

**INTRODUCTION TO ENERGY**

**Part 1 - The two types of energy**

*Directions: Determine the best match between basic types of energy and the description provided. Put the correct letter in the blank. Answers may be used more than once.*

\_\_\_\_\_\_ 1. A skier at the top of the mountain (KE) Kinetic Energy

\_\_\_\_\_\_ 2. Gasoline in a storage tank (PE) Potential Energy

\_\_\_\_\_\_ 3. A race car traveling at its maximum speed (B) Both types of Energy

\_\_\_\_\_\_ 4. Water flowing from a waterfall before it hits the pond below

\_\_\_\_\_\_ 5. A spring in a pinball machine before it is released

\_\_\_\_\_\_ 6. Burning a match

\_\_\_\_\_\_ 7. A running refrigerator motor

\_\_\_\_\_\_ 8. Rays of the sun hitting your face

\_\_\_\_\_\_ 9. Listening to music with your IPod/MP3 player

\_\_\_\_\_\_10. Listening to your teacher tell you great things about science

**Part 2 - Forms of Energy.**

*Directions: Determine the type of energy for each form (Kinetic, Potential, or Both) and give an example.*

|  |  |  |  |
| --- | --- | --- | --- |
| **Form** | **Definition** | **Type(KE, PE)** | **Example**  |
| Chemical energy |  Stored in bonds of atoms and molecules |  |  |
| Mechanical energy | An object’s change in position creates energy |  |  |
| Nuclear energy | Stored in the nucleus of an atom; released when nucleus splits or combines |  |  |
| Gravitational energy | Energy of position or height |  |  |
| Electrical energy | Movement of electrons  |  |  |
| Radiant energy | Electromagnetic waves |  |  |
| Thermal energy | The vibration and movement of molecules |  |  |
| Motion energy | Movement of an object creates energy |  |  |
| Sound energy | Vibration of waves through material |  |  |

**Part 3 - Forms of Energy Continued**

*Directions: Match the energy form(s) to the description provided. A few questions may have more than one answer.*

\_\_\_\_\_\_\_\_\_\_\_\_\_ 1. Falling rocks from the top of a mountain (A) Chemical

\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. Release of energy from the Sun (B) Mechanical

\_\_\_\_\_\_\_\_\_\_\_\_\_ 3. Energy released from food after it is eaten (C) Nuclear

\_\_\_\_\_\_\_\_\_\_\_\_\_ 4. Batteries (D) Gravitational

\_\_\_\_\_\_\_\_\_\_\_\_\_ 5. The energy that runs a refrigerator (E) Electrical

\_\_\_\_\_\_\_\_\_\_\_\_\_ 6. Fission reactors (F) Radiant

\_\_\_\_\_\_\_\_\_\_\_\_\_ 7. The rumble of thunder from a storm (G) Thermal

\_\_\_\_\_\_\_\_\_\_\_\_\_ 8. Rubbing your hands together (H) Motion

\_\_\_\_\_\_\_\_\_\_\_\_\_ 9. Gasoline (I) Sound

\_\_\_\_\_\_\_\_\_\_\_\_\_10. Food before it is eaten

\_\_\_\_\_\_\_\_\_\_\_\_\_11. Lightening

**Part 4 - Transformation of Energy**

*Directions: Use the forms of energy to fill in the table below. The first one has been done for you.*

|  |  |  |
| --- | --- | --- |
|  | **ORIGINAL ENERGY FORM** | **FINAL ENERGY FORM** |
| Electric motor | electrical | motion |
| A battery that runs a moving toy |  |  |
| A solar panel on the roof of a house |  |  |
| A person lifting a chair |  |  |
| A nuclear power plant |  |  |
| A toaster |  |  |
| A church bell |  |  |
| Gasoline powering a car |  |  |
| A light bulb |  |  |
| Photosynthesis  |  |  |

**Part 5 – Types and Forms of Energy**

*Directions: Use the list of words to complete the following sentences. You may use words more than once.*

radiant

electrical

gravitational

mechanical

chemical

kinetic

thermal

potential

nuclear

sound

motion

1. Energy that is stored within an object is called energy.

2. Compressed springs and stretched rubber bands store energy.

3. The vibration and movements of the atoms and molecules within substances is called heat or
 energy.

4. The energy stored in the center of atoms is called energy.

5. The movement of energy through substances in longitudinal waves is .

6. The energy of position, such as a rock on a hill, is energy.

7. The movement of objects and substance from place to place is energy.

8. Electromagnetic energy traveling in transverse waves is energy.

9. Energy stored in bonds of atoms and molecules is energy.

10. The movements of atoms, molecules, waves and electrons is energy.

11. The movement of electrons is energy.

12. The energy in petroleum and coal is stored as energy.

13. X-rays are an example of energy.

14. Fission and fusion are examples of energy.

15. A hydropower reservoir is example of energy.

16. Wind is an example of the energy of .

**Part 6 – Types and Forms of Energy Crossword**

*Directions: Fill in the crossword puzzle using words that relate to types and forms of energy.*

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 ACROSS DOWN

5. The energy we use to run many machines. 1. We use energy to see.

7. Sugar gives us energy to . 2. We use energy to from place to place.

9. Energy doesn’t disappear; it changes to 3. Energy gives us to
another . keep us warm.

 4. is the ability to do work.

 6. A machine allows us to
 energy from one form to another.

 8. Energy is the ability to do .