Forms of Energy

Even though energy is a vital part of our everyday life, it is not well understood by most people. Unlike matter, energy cannot be directly seen or touched. However, when changes in matter occur, whether the changes are physical or chemical, energy is involved. So, when a race is run, a cake is baked, or a bell rings, you can be sure that energy was involved in the change.

Energy is the ability to cause a change in matter and/or do work. Energy comes in many different forms.

* What is energy? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Forms of Energy

|  |  |
| --- | --- |
| Form | Description |
| Chemical | Energy stored in matter because of its chemical makeup |
| Electrical | Energy due to charged matter |
| Light | Energy carried by electromagnetic radiation |
| Mechanical | Energy of matter caused by its position or its motion |
| Thermal | Energy that is related to heat and the temperature of matter |

Chemical energy is released by chemical changes in matter. Chemical energy can be found stored in food, batteries, wood, and fuels. What happens to a wood log in a campfire? Burning the wood breaks down its chemical makeup, releasing energy in the form of heat and light. Released slowly through the digestion of food, chemical energy powers all living things. Released quickly, chemical energy can launch a rocket into space.

* In what ways do you use chemical energy in your life?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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C:\Users\Moore\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\OMCMON31\MC900287125[1].wmfElectrical energy is a special kind of energy made of tiny moving particles. Electrical energy is usually change into other forms of energy to help us do work. For example, we use electricity to light a bulb, turn a motor, or run a blow-dryer

* In what ways do you use electrical energy in your life? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Light energy exists in two forms: electromagnetic and radiant energy.

Light energy includes visible light, X-rays, microwaves, and ultraviolet light. Sunlight is the most familiar example of radiant energy. Although light plays a very important role in our lives, scientists are still puzzled by exactly what light is. Light energy interacts with matter by being transmitted, absorbed, or reflected.

* In what ways do you use light energy in your life? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Mechanical energy is the energy that matter has because of its motion or its position. Either the matter has energy stored by its position or shape, or the matter is in motion. Machines use mechanical energy to do work such as moving automobiles, and lifting elevator. Our bodies use mechanical energy to do work such a moving objects or throwing balls across the gym. Sound is the result of either vibrations or the movement of matter.

* In what ways to you use mechanical energy in your life? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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C:\Users\Moore\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\I77RFR2H\MC900280971[1].wmfThermal energy is the energy of moving particles. Thermal energy can do work for us such as heating our food or drying our clothes. The faster the particles move, the hotter an object becomes and the more thermal energy it possesses. A Change in an object’s temperature is an indicator of a change in the object’s thermal energy. Thermometers are important tools used to measure these changes.

Did you know the prefix thermo- means “heat” ?

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class Period \_\_\_\_\_\_\_\_\_\_\_\_\_

After reading Forms of Energy, answer the following questions and complete each chart.

1. What is energy? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

In the following chart, list 2 ways you use each form of energy

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Chemical** | **Electrical** | **Light** | **Mechanical** | **Thermal** |
| 1.  2. | 1.  2. | 1.  2. | 1.  2. | 1.  2. |

In the following chart, write the missing Form of energy to match the correct description.

|  |  |
| --- | --- |
| **Form of Energy** | **Description** |
|  | Energy carried by electromagnetic radiation |
|  | Energy that is related to heat and the temperature of matter |
|  | Energy stored in matter because of its chemical makeup |
|  | Energy of matter caused by its position or its motion |
|  | Energy due to charged matter |