**Chapter 13.3 & 13.4**

**Energy Transformation Notes**

**Energy**

* **What is Energy?**
* \_\_\_\_\_\_\_\_ is measured in \_\_\_\_\_\_\_\_\_\_\_\_\_
* 2 Types of Energy:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| **What Forms of Energy Are There?** | |
| 1. **Potential Energy** | 1. **Kinetic Energy** |
| * Energy that is \_\_\_\_\_\_\_\_\_\_\_\_\_ as a result of \_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_. * Energy in a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   + Ex: Stretched rubber band, \_\_\_\_\_\_\_\_\_\_\_\_\_\_ * Can increase by increasing:   + \_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | * The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ * Depends on two things   + \_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_ * Kinetic energy depends on \_\_\_\_\_\_\_\_\_ more than \_\_\_\_\_\_\_\_\_\_\_. |
| 1. Describe the energy transformation from A. to B. 2. Describe the energy transformation from B. to C 3. Describe the energy transformation from C. to D. | |
| 1.  2.  3. | 1.  2.  3  4.  5. |
| How can you remember them all? | |

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|  | **Type of Energy** | **Mnemonic** | **Details** | **Examples** |
| 1. |  |  | Energy stored in the \_\_\_\_\_\_ of \_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_ |  |
| 2. |  |  | Energy stored in the \_\_\_\_\_\_\_\_\_\_\_ of an \_\_\_\_\_\_. The energy that holds the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |
| 3. |  |  | Any time \_\_\_\_\_\_\_\_\_\_\_ supplies the \_\_\_\_\_\_\_\_\_  Higher the \_\_\_\_\_\_\_\_\_\_\_\_= more gravitational energy.  Dependent on its \_\_\_\_\_\_\_\_, its \_\_\_\_\_\_\_\_, and the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. |  |
| 4 |  |  | Electromagnetic energy that \_\_\_\_\_\_\_ in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |
| 5. |  |  | Movement of \_\_\_\_\_\_\_\_\_\_\_ |  |
| 6. |  |  | The movement of a substance from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  The sum of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ an object uses to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  An object in \_\_\_\_\_\_\_\_\_\_\_\_\_ |  |
| 7. |  |  | Movement of energy through \_\_\_\_\_\_\_\_\_\_\_\_\_\_ in \_\_\_\_\_\_\_\_\_\_\_ |  |
| 8. |  |  | The \_\_\_\_\_\_\_\_\_\_\_\_ or movement of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |

**For the following images, identify how energy has been transformed.**

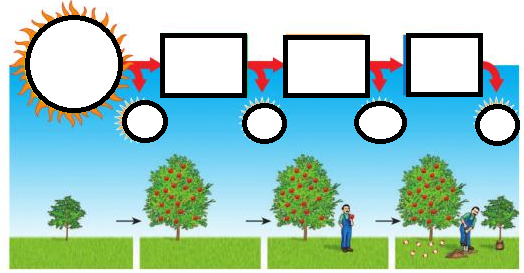
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**Energy Transformation**

* The process of changing energy from one form to another is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**.** 
  + Ex: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Law of Conservation of Energy**

* States:
  + Energy can’t be \_\_\_\_\_\_\_\_\_\_\_\_\_\_ or\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ but it does change from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
  + Same \_\_\_\_\_\_\_\_\_
* The total energy remains \_\_\_\_\_\_\_\_\_\_\_\_, it just \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



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| **Heat can be transferred 3 different ways** | | |
| **Type** | **Details** | **Picture** |
| 1. | •Transferred of energy by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  •Works best in some \_\_\_\_\_, then liquids, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. |  |
| * \_\_\_\_\_\_\_\_\_\_\_\_\_\_- materials that allow heat to pass through them   Ex. | |
| * \_\_\_\_\_\_\_\_\_\_\_\_\_\_- materials that don’t let heat pass through them well   Ex. | |
| 2. | •Transferring \_\_\_\_\_\_\_\_\_\_\_ by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  •\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_ are fluids  •When heated they \_\_\_\_\_\_\_\_, become less \_\_\_\_\_\_\_\_\_  •They \_\_\_\_\_\_\_\_, replaced by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ fluids  •Make a circular flow called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |
| 3. | •Energy transferred by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  •Ex: infrared radiation, \_\_\_\_\_\_\_\_\_\_\_\_, ultraviolet rays  •Can travel through \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_  •When wave hit object they make \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. |  |

Review:

* Why does hot air rise and cold air sink?
* Why are boilers placed beneath hot water tanks in people’s homes?
* Radiation travels in straight lines True/False
* Radiation can travel through a vacuum True/False
* Radiation requires particles to travel True/False
* Radiation travels at the speed of light True/False
* Radiation requires a medium to travel True/False