Energy

The Review !!

What you have to know!!

**What is Energy**

1. If the transfer of energy is work, than power is the rate at which energy id transferred, or the amount of energy is transferred in a unit of time
2. Power = Energy transferred/Time
3. Two basic kinds of energy are Kinetic energy and potential energy
4. Kinetic energy = ½ x Mass x Velocity
5. Gravitational Potential Energy = Weight x Height

Vocabulary

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| Energy | http://c.quizlet.com/a/i/spacer.Thhr.gifThe ability to do work |
| Kinetic Energy | The Energy an object has due to motion |
| Potential Energy | stored energy that results from the position or shape of an object is |
| Gravitational Potential Energy | Potential energy related to an object's height |
| Elastic Potential Energy | The potential energy associated with an object being stretched or compresses |

**Forms of Energy**

1. You can find an object’s mechanical energy by adding the objects’s kinetic energy and potential energy
2. Mechanical Energy = Kinetic Energy plus Potential Energy
3. Forms of energy associated with particles of an object include thermal energy, electrical energy, chemical energy, nuclear energy , and electromagnetic energy

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| Mechanical Energy | The form of energy being associated with the position and motion of an object |
| Thermal energy | total potential and kinetic energy of the particles in a object |
| Electrical energy | The energy of Electric Charge |
| Chemical Energy | Potential energy stored in chemical bonds that hold chemical compounds together |
| Nuclear Energy | Energy stored in the nucleus of the atom |
| Electromagnetic Energy | Travels in waves. These waves have some electrical properties and magnetic properties |

**Energy Transformation ad Conservation**

1. Most forms of energy can be transformed into other forms
2. One of the most common energy transformation is the transformations between potential energy and kinetic energy
3. According to the laws of conservation of energy, energy cannot be created or destroyed

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| Energy transformation | a change from one form of energy to another |
| Law of Conservation of Energy | Energy cannot be created or destroyed. It can only be changed from one form to another |
| Matter | Anything that has mass and takes up space |

What do you need to calculate the kinetic energy of a ball?

Kinetic Energy =1/2 x Mass Velocity 2

Calculate the GPE of a bungee jumper at 1000 meters up who has a mass of 34 Kg.

GPE= 1000 meters x34 Kg = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Calculate the KE of the same bungee jumper traveling at a velocity of 50 m/s. What is the total energy?

Create an example of a three step energy conversion:

The mechanical energy used to strike a match is transferred to thermal energy. The thermal energy causes the particles in the match to release stored chemical energy, which is transformed to thermal energy and electromagnetic energy you see as light