

# Law of Conservation of Energy

Energy cannot be created or destroyed, but changed from one form to another

Example: A television converts electrical energy into light and sound energy that can be seen and heard. Not all energy is being converted. Some energy is lost as heat energy.

# Potential vs. Kinetic Energy

Have you ever watched a ball bounce? You probably noticed that the ball bounces lower and lower after each bounce. A bouncing ball undergoes a number of energy changes.

Two types of Energy:

1. Potential Energy- stored energy determined by position
2. Kinetic Energy- energy in motion

As soon as the ball drops potential energy is converted to kinetic energy. More and more potential energy will be converted. As the ball rises it has potential energy but never as much as when it started.

# Forms of Energy

Type	Characteristics	Examples
Mechanical Energy	Energy in an object that is moving or has potential to move	Rollercoaster (climbing hills, rise, turn, fall)
Heat Energy	Energy of internal motion of particles (heat = move faster)	Lava Lamp ( heating and cooling)
Chemical Energy	Energy of bonding atoms	Food - Break down to get energy
Nuclear Energy	Energy from the nucleus of an atom (nucleus splits)	Suns Energy
Electromagnetic Energy	Energy of electrical charges moving	Light (visible light, x-rays)

# Heat

Form of energy caused by internal movement of molecules

Heat Transfer - heat moves from warmer to cooler objects

Substances expand while heated and contract when cooled

<b>Conduction</b>	<b>Convection</b>	<b>Radiation</b>
Heat is transferred through direct contact of molecules (collisions)  Example: Burning yourself	Heat transfer is through liquids and gases  Up and down movement  Warm air rises	Heat transferred by electromagnetic waves  Travels through empty space