

# Energy/ATP Study Guide


## Energy

Defined as the ability to do work, or to create some kind of change.

### Energy Forms

### Types of Energy

### Laws of Thermodynamics


  
 Mechanical Energy  
 Electrical Energy  
 Light Energy  
 Thermal Energy  
 Sound Energy

Forms of Energy

Potential Energy

Kinetic Energy

1<sup>st</sup>

2<sup>nd</sup>

Energy Conservation

Law of Entropy

- Stored energy

- Energy associated with objects in motion

- Total amount of energy in universe is constant & conserved

- Conversion of energy is NOT 100% efficient (converted to heat)

Heat Energy:

The energy transferred from one system to another that is not work.

## Cellular respiration

## Chemical Reactions

Breakdown of chemical bonds in food molecules to release stored energy. Make ATP

Oxidation Reaction  
Catabolic

Reduction Reactions  
Anabolic

Results from the loss of an electron & typically results in the RELEASE of energy, but require activation energy

Gains an electron & typically requires E

