**Motion and Forces**

**Energy Study Guide**

* Differentiate between potential and kinetic energy
* Identify situations where kinetic energy is transformed into potential energy and vice versa.
* Understand and apply the law of conservation of energy – Energy cannot be created or destroyed but can be changed from one form into another
* Understand that the total energy in an object will be constant but the ratios of potential and kinetic energy will change based on position
* Recognize that moving objects have energy and are doing work
* Recognize that objects in motion produce heat because they are doing work.
* Recognize the different types of energy; chemical, thermal, light (radial), nuclear, and mechanical.
* Understand and give examples of the transformation of energy from one type (e.g. chemical) to another (e.g. thermal).

**Key terms and Vocabulary**

Energy

Potential Energy

Kinetic Energy

Total Energy

Chemical Energy

Thermal Energy

Electrical Energy

Nuclear Energy

Light (radial) Energy

The law of conservation of energy

Newton’s Laws of Thermodynamics

Entropy

Work

Electrical Potential Energy

Gravitational Potential Energy

Elastic Potential Energy

Conduction

Convection

Radiation