

PHYSICS CONTENT FACTS

The following is a list of facts related to the course of Physics. A deep foundation of factual knowledge is important; however, students need to understand facts and ideas in the context of the conceptual framework. This list is not intended to provide a comprehensive review for State and National Assessments. Its purpose is to provide a highlight of the factual material covered in Physics. This list is not all inclusive, be sure to check Nevada State Standards and your district syllabi.

INTERNAL ENERGY

- Temperature is a measure of the average kinetic energy of the molecules of a substance
- Internal energy is the sum of kinetic and potential energies within the substance
- Specific heat capacity is the quantity of energy needed to raise the temperature of 1kg of a substance by 1°C at constant pressure $Q = mc\Delta t$
- Phase changes are due to internal potential energy changes $Q_f = mH_f$ $Q_v = mH_v$
- Thermal equilibrium is the condition in which the temperature of two objects in physical contact with each other is the same
- Internal energy always flows, in nature, from an object of higher temperature to one of lower temperature. This flow of internal energy is called heat
- When heat flows into a system, it leads to an increase in internal energy plus external work done by the system $\Delta E = \Delta Q + \Delta W$
- Entropy is a measure of the disorder of a system (increasing disorder reduces the energy available for work)
- The total entropy (disorder) of the universe is always increasing