**Topics to Know: Momentum**

* **Newton’s Three Laws of Motion (cannot escape these, can we?)**
* **Newton’s Law of universal gravitation (him, too)**
* **Coefficient of Friction (given? Calculate?)**
* **Balanced and Unbalanced Forces**
* **Elastic collisions: KE is conserved**
* **Inelastic collisions: KE is not conserved (lost!)**
* **Impulse**
  + **∆p = F(∆t)**
  + **F(∆t) = pf - pi**
  + **units N٠s or kg٠m/s**
* **Momentum**
  + **p = mv**
  + **units kg٠m/s**

**Whoa…these are the same…wow! Remember, you can rearrange the parts of an equation as you need…just do it mathematically correct**

* **Do we recognize how to use the formulas associated with these concepts?** 
  + **What are we given?**
  + **What do we need?**
  + **What, if anything, can we ignore?**
  + **Now, what formulas do we need?**
  + **Okay, solve it!**

**Most important item: WATCH YOUR UNITS! Use your formula sheets!!!**

**Work and energy**

* **Work: w=f∙∆d**
  + **KE = ½ mv2**
  + **W = ∆KE**
  + **W = F∙d∙cosΘ**
  + **Power: w/t**
* **Mechanical Advantage**
  + **Ideal and Actual…read, know these**
  + **Efficiency = real/ideal x100, always less than 100%**
* **Potential energy**
  + **PE = mgh**
* **Mechanical energy = PE + KE**
  + **KEbefore + PEbefore = KEafter + PEafter**
  + **Remember that momentum is conserved if there is no external force**
* **Q=mc∆T**
* **Heat is not temperature!**
* **Power = work/time**