Physical Science Chapter 10 Notes

10.1

* An object in motion changes position
  + Position describes the location of an object
  + **Position** – of a place or object is the location of that place or object
    - Often compared to where you are currently
    - To describe position, use a **reference point** – a location to which you compare other locations
  + Distance – to measure, use the standards meter, kilometer, and centimeter
  + **Motion** – change of position over time.
    - Change in position is evidence that motion happened
    - Speed – measure of how quickly or slowly the object changes position
    - Relative motion – motion is measured relative to an observer’s frame of reference

10.2

* Speed measures how fast position changes
  + Position can change at different rates
  + **Speed** – a measure of how fast something moves or the distance it moves, in a given amount of time.
  + **S = distance / time**
    - Speed is not constant, easier to calculate average speed
  + **Velocity** – speed in a specific direction
    - **Vector** – a quantity that has both size and direction
    - Objects can have the same speed but different velocities…. How?

10.3

* Acceleration measures how fast velocity changes
  + Speed and direction can change with time
    - **Acceleration** – rate at which velocity changes with time
      * If velocity doesn’t change, there is no acceleration
      * Acceleration in same direction as motion – causes speed to increase
      * Acceleration in the opposite direction of motion – speed of the object decreases
      * Acceleration at a right angle to motion – direction of motion changes but speed does not
      * **Acceleration = (final velocity – initial velocity) / time**