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**