10/11

* Chapter 15
  + Ecosystmes
    - Biotic environment
      * The living organisms within an area
      * Often referred to as a community
    - Physical environment
    - Terrestrial Biomes
      * Tropical forest
      * Desert
      * Savanna
      * Temperate grassland
      * Temperate deciduous forest
        + Leaves fall off
      * Chaparral
      * Coniferous forest
      * Tundra
      * Polar ice
    - Aquatic Biomes
      * Lakes and Ponds
      * Rivers and streams
      * Open oceans
      * Estuaries and wetlands
      * Coral reefs
    - Distribution of solar energy
      * Equator gets a concentrated amount of sunlight in smaller spaces
      * Poles get the same amount of energy over more square milage
    - RAIN!!
      * Air is heated and rises
      * Rising air cools
      * Cooling air loses moisture
        + Duh…
    - Deserts
      * Warm air rises away from earth’s surface
      * Cool air falls towards surface, becoming warmer
        + Air circulation patterns – happy cells
      * Deserts happen when the air is so warm that it can carry all of the moisture but all of the moisture was given up in the form of rainfall in the cooler countries, ergo, no rainfall.
    - Rain shadows?
      * Part of what causes biotic communities in California
      * Remember the heat circulation rule, heat rises and cools and loses moisture. Cold sinks and gains moisture
      * On the coast, most of the air comes from the ocean
        + The air gets warm and a lot of moisture from the ocean
      * Once it hits land, it cools down because the land is cooler
        + Creates fog, or a land cloud
      * Well, all of that goes up the mountain
        + And as we know, rising air loses temperature and moisture
        + Makes forests and pretty trees and all that jazz
        + Also makes rain (duh) and snow (again duh)
      * Once the water leaves the air as precipitation, it passes over the mountain and falls, getting warmer, creating a desert.
    - Ocean circulation
      * All of the west coasts of the world tend to have cooler waters, east coasts have warmer waters
      * Northern waters tend to flow clockwise, Southern tends to flow widdershins
      * Coriolus effect (look up spelling…)
      * Gas solubility laws have an effect on the aquatic biomes
        + Extreme northern and extreme southern waters support lots of life
        + Equator waters tend to support less life
      * Effects the migration of whales
      * Doldrums
        + The waters at the equator
        + Very little wind, and very little water movement
      * Global warming reverses the currents
        + Not going to happen in two weeks
        + Poles are melting, creating a lessened salinity of the oceans, and slowing the ocean currents
      * El Niño?
        + Occurs every two to seven years
        + Blamed for extreme climate changes
        + Wind and water flows differently, causing less nutrients to flow to fish, and causing droughts
  + Energy flow within an ecosystem
    - Primary producers
      * Anyone doing photosynthesis
    - Primary consumers
      * Herbivores
      * The ones that eat the plants basically
    - Secondary consumers
      * The carnivores that eat the herbivores
    - Tertiary consumers
      * The top carnivores that eat other carnivores
    - Ninety percent of all energy is lost to staying alive and heat
      * Only ten percent is used to create form
      * It’s the reason why plants are common, PC are less common, SC are uncommon, and TC are rare