**Ch. 18: Populations Notes**

Essential Question: What are populations and how do they change and interact?

1. Environment: all the living and non-living parts surrounding the area in which organisms live
   1. Habitat: environment that provides the things an organism needs to live, grow and reproduce
      1. Elements organisms need to live
         1. Water
         2. Shelter
         3. Food
      2. Two parts of a habitat
         1. Biotic factors – living things (usually provide food)
         2. Abiotic factors – non-living things (sunlight, soil, temperature, oxygen water)
   2. Ecosystem: all the living and nonliving things that interact in an environment
      1. Organization
         1. Organism – an individual member of a species
            1. smallest level of organization
            2. Consists of one member of a species
         2. Population
            1. All the members of one species living in a particular area
            2. Middle level of organization
         3. Community
            1. All the species that live together in an area.
   3. Ecology : study of how organisms interact with each other and their environment
      1. Population size:
         1. More organisms are born than die = population increases
         2. More organisms die than are born = population decreases
         3. Immigrations: n organisms move into a population = population increase
         4. Emigration: organisms move out of a population = population decrease
         5. Population density = number of individuals/size of area
      2. Limiting Factor: an environmental factor that causes a population to stop growing or decrease in size
         1. Weather
         2. Space
         3. Food
         4. Water
         5. Shelter
      3. Interactions
         1. Competition: struggle between organisms to survive using the same limited resources
         2. Predation : one organism kills another organism for food
            1. Predator: killer
            2. Prey: gets killed
            3. More predators causes decrease in prey
            4. More prey causes increase in predators
      4. Symbiosis: a relationship between two species that live close together and at least one of them benefits
         1. Mutualism = both species benefit (zebra and oxpecker)
         2. Commensalism = one species benefits, the other is neither helped nor harmed (remora fish and shark)
         3. Parasitism = one species benefits, the other is harmed (flea on a dog)
            1. Parasite = organism that benefits
            2. Host = organism that is harmed