**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