Notes over Symbiosis

**This will be on your Test and quiz!**

**Population** – group of individuals of the same species living in the same area, potentially interacting

**Community** – group of populations of different species living in the same area, potentially interacting

**Commensalism -** is a relationship between two living organisms where one benefits and the other is neither harmed nor helped. One species receives a benefit from another species -> enhances fitness of one species; no effect on fitness of the other species.

 Ex: The clownfish lives among the forest of tentacles of an anemone and is protected from potential predators. Ex # 2: Some birds live among cattle to eat the insects stirred up as they walk. One example are egrets who hunt for insects near a grazing animal's mouth

**Parasitism** - One organism, usually physically smaller of the two (the parasite) benefits and the other (the host) is harmed. One species feeds on another -> enhances fitness of parasite but reduces fitness of host.

Ex: Ticks and fleas that live in a host animal's fur bite the animal and drink its blood are parasites. Insects such as mosquitoes feeding on a host are parasites.

**Mutualism:** Both Species Benefit from the Interaction. Two species provide resources or services to each other -> enhances fitness of both species.

Ex: Flowers and their Pollinators (examples:  Bees and hummingbirds gather nectar and spread pollen.) Ex #2: Birds and mammals eat berries and fruits while the plant benefits by the dispersal of it seeds. Cleaners eat insect pests from the skin of animals. (ex: Egyptian plover cleans giraffes and buffaloes) Ex # 3: Many herbivores such as cows, sheep, deer, horses and rabbits depend on bacteria that live in their stomachs to break down the plant material.

**Predation** - one eats another (Herbivores eat plants. Carnivores eats animals) Ex: Cat eating Mouse, Lion eating a rabbit, etc.

Notes over Energy Pyramid



Remember that the 10% rule applies to the energy pyramid. As the species eat the species under them in the food chain, 10% of energy is lost.



The arrows show what-eats-what in an ecological community. If the hawk is destroyed, what happens to the food web?

The species that the hawk would eat (snake and shrew) would overpopulate, causing the other species that would get eaten to go extinct.