**Biology Study Guide: Chapter 3 and 4**

**Know the definitions of the following vocabulary words:**

* Biosphere
* Species
* Population
* Community
* Ecology
* Ecosystem
* Biome
* Biotic Factor
* Abiotic Factor
* Autotroph
* Primary Producer
* Photosynthesis
* Chemosynthesis
* Heterotroph
* Consumer
* Carnivore
* Herbivore
* Omnivore
* Decomposer
* Detritivore
* Food Chain
* Food Web
* Trophic Level
* Ecological Pyramid
* Biomass
* Tolerance
* Habitat
* Niche
* Competitive Exclusion Principle
* Predator
* Prey
* Symbiosis
* Mutualism
* Parasitism
* Commensalism
* Ecological Succession
* Primary Succession
* Pioneer Species
* Secondary Succession
* Climax Community

1. List the levels of ecological organization from the most specific to the broadest.
2. Compare biotic and abiotic factors. List 3 examples of each.
3. Describe the difference between how autotrophs and heterotrophs obtain energy.
4. Which is a more realistic model – food chain or food web- of a feeding relationships in an ecosystem? Explain your reasoning.
5. How does energy flow through an ecosystem?
6. What role do decomposers play in an ecosystem? Why is their role so critical?
7. List the trophic levels in a 5-level food chain.
8. What type of organism always makes up the first trophic level?
9. Compare the three types of ecological pyramids.
10. Explain how a pyramid of energy shows the transfer of energy at each trophic level. (How much energy is transferred between the trophic levels? What happens to most of the energy between the trophic levels?)
11. Describe how an organism’s tolerance determines the habitat in which it lives.
12. Compare the difference between a habitat and niche.
13. Compare and contrast the three types of symbiotic relationships found in communities.
14. Explain how competition shapes communities.
15. What happens to two populations that attempt to occupy the same niche in the same habitat at the same time? What principle does this apply?
16. Describe the predator-prey relationship. (How does the predator population affect the prey population?)
17. Compare and contrast primary and secondary succession.