**Ecosystems Study Guide**

The ecology test is Tuesday, October 23rd. This study guide contains vocabulary and concepts you need to know and be able to use in examples. I have done my best to include all the general topics. The test will be a combination of multiple choice, matching, short response, and long response questions. In addition to the study guide; you can use your notes, vocabulary, homework, DA, and labs to help you study. If you have any questions ask early!!

1. What is **ecology**?
2. Compare **Biotic** and **Abiotic**. What are the main abiotic factors?
3. Explain how biotic factors in the environment depend on and are impacted by abiotic factors.
4. Explain and Give Examples of the Levels in an Ecosystem. (Hint make a chart)
5. What is the main source of energy for life on Earth?
6. Compare **Autotrophs** and **Heterotrophs**. Be able to give examples of each.
7. What are 3 types of **consumers**? What do they eat?
8. How do **producers** obtain energy?
9. How do **decomposers** obtain energy?
10. What is a **scavenger**?
11. What is the unit of heat energy used to measure energy in food? How many food Calories do you need per day?
12. Be able to read, make, and analyze a **Food Chain, Food Web,** and **Energy Pyramid**.
	* Where do the arrows point in a Food Chain/Web?
	* -What does a Food Web Show? What does the Energy Pyramid show?
	* -As you move up an Energy Pyramid what happens to the available energy?
	* As you move up the Energy Pyramid what happens to the number of organisms?
	* What is the 90-10 rule?
	* Be able to idently the producers and consumers in a food web and in the energy pyramid.
13. What is the difference between a **habitat** and a **niche**? Give an example.
14. What is the difference between **predator** and **prey**?
15. What are 4 methods of studying a **population**? Give an example of each.
16. When is it good to use **random** **sampling**? When is it good to use **direct observation**? When is it good to use **Mark-and-Recapture**?
17. Ryan wants to know the number maple trees in the woods. He divides the area into 9 sections and counts trees in 4 randomly chosen sections. The data collected is 5, 7, 3, 1. What is Ryan’s estimate for the number of maple trees in the woods?
18. How does a population grow in size? (2 ways)
19. How does a population decrease in size? (2 ways)
20. What is **limiting factor**?
21. What is **carrying capacity**?
22. What are factors that determine **carrying capacity** of an ecosystem?



1. What is the **carrying capacity** of the turtle population?
2. How are **carrying capacity** and **limiting factors** related?
3. What is an **adaptation**?
4. Give examples of **structural adaptations**.
5. Give examples of **behavioral adaptations**.
6. Can an individual **adapt**? Why or why not?
7. What are the three types of interactions among organisms?
8. What is **symbiosis**?
9. Define the three types of symbiosis. How are each of the organisms affected? (Hint make a chart)
10. What is the pattern of the populations shown in this graph? What is the relationship between the organisms?