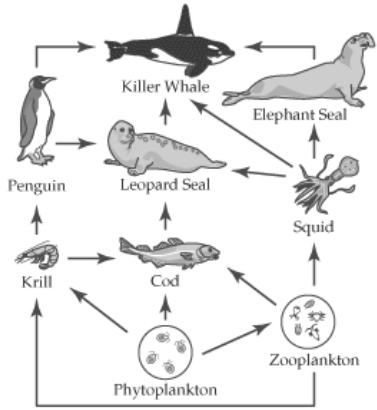


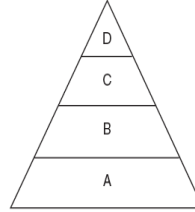
**Ecology- Energy Flow**



1. Which organism will have the greatest amount of energy?
2. What is the source of energy for the organism in question 1?
3. Which organism will have the least amount of energy?
4. How much of the original energy would the killer whale receive if it ate the squid?
5. What trophic level does the elephant seal represent?
6. What trophic level does the cod represent?
7. What process provides the initial chemical energy to support all the other trophic levels?

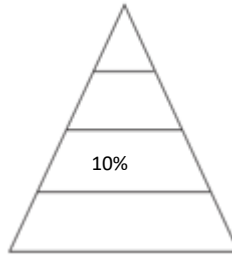
**Ecology- Energy Flow Part II**

1. Use the following terms to label the energy pyramid below: *secondary consumer, producer, tertiary consumer, primary consumer*. **CIRCLE** the level that would have the greatest amount of available energy and **BOX** the level that would have the least amount of available energy.

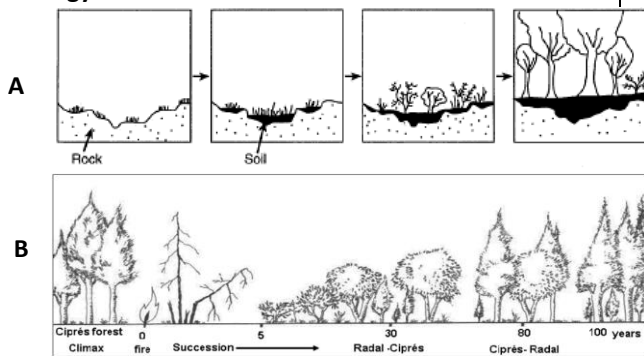


2. In the pyramid above, **SHADE IN** the trophic level that would have the greatest concentration of bioaccumulated toxin and place a **STAR** in the level that would have the lowest concentration.

3. Complete the two energy pyramids below.

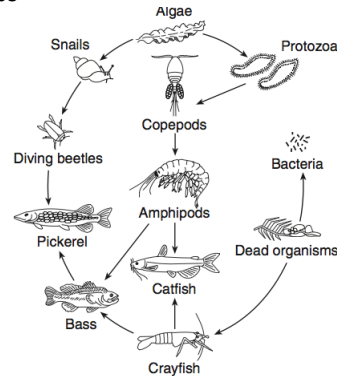


**Ecology- Succession**



1. Which diagram above depicts primary succession? **EXPLAIN.**
2. Which diagram above depicts secondary succession? **EXPLAIN.**
3. Why are disturbances, such as a fire, important to ecosystems?
4. Explain what would happen if fires were not allowed to naturally occur in an ecosystem.

**Ecology- Food Webs**



1. Make one food chain from the food web above. This is an aquatic food web!
2. For your food web in question 1, label the producer, primary consumer, secondary consumer and tertiary consumer.
3. Identify TWO potential impacts to this food web if bass were removed.
4. What function does the bacteria serve in this food web? Why is it important?

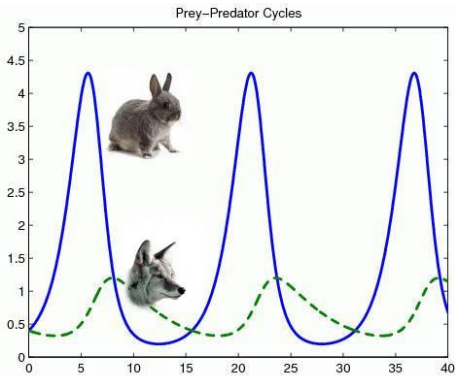
5. Why are high levels of biodiversity important to an ecosystem?

**Ecology- Symbiotic Relationships**

Type of Symbiosis	Definition	Effect on Organisms (+ or -)	Example
Parasitism			
Commensalism			
Mutualism			

**Population Ecology**

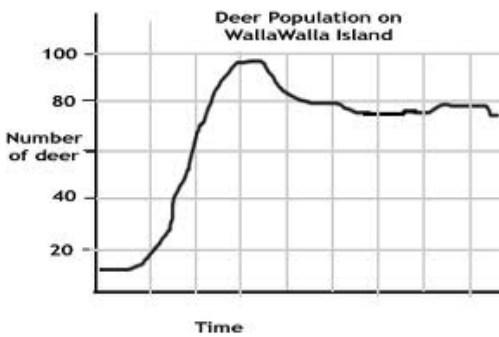
The graph below shows the relationship between predator and prey populations:



1. Which population has the least number of organisms? Why?
2. What happens to the prey when the predator population increases?
3. What happens to the predators when the prey population decreases?
4. Why are predators a necessary part of an ecosystem?

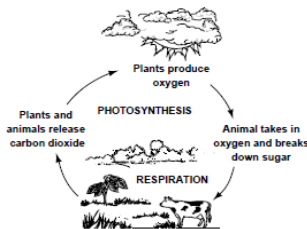
**Population Ecology**

The graph below shows the deer population over several years after deer first arrived on the island.



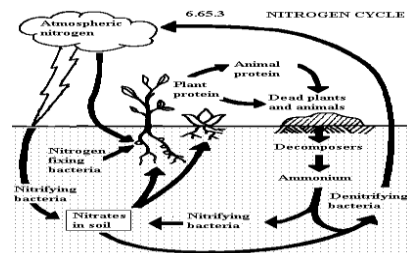
5. How many deer can this small ecosystem support, what is the carrying capacity?
6. Assume that a drought destroyed much of the vegetation on the island. What is expected to happen to the deer population? \_\_\_\_\_ Is drought a density dependent or independent limiting factor, why?
7. Assume that coyotes, predator to young deer, were being hunted for their fur. What is expected to happen to the deer population after the coyotes are killed? EXPLAIN
8. If the population of deer was at 60, would there most likely be enough resources to support the deer on the island? EXPLAIN

**Cycles Part I**



1. What two processes are the major driving factors in the carbon cycle?

**Cycles Part II**



Name: \_\_\_\_\_

**Expectation Sheet Review Questions**

Test Date: \_\_\_\_\_4/17/19\_\_\_\_\_

<p>2. If a large forest is removed as a source of lumber, describe a potential impact on the carbon cycle.</p> <p>3. In an aquatic ecosystem, what producer will utilize carbon dioxide to make oxygen? _____ What cellular process will they conduct to use the CO<sub>2</sub>?</p>	<p>1. What organism is vital to the cycling of nitrogen?</p> <p>2. What purpose do nitrogen fixing bacteria serve?</p> <p>3. Which two biomolecules is nitrogen needed for?</p>
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