ECOLOGY/SYMBIOTIC RELATIONSHIPS AMONG LIVING THINGS WORKSHEETS

I. Complete the table below by writing the kind of symbiotic relationship described on the left.

Relationships Among Organisms

Description of Relationship	Kind of Relationship
Organisms of different species live together in	
a close, long-term relationship	1.
One species benefits and the other species	
does not benefit but is not harmed by the	2.
relationship	
One species benefits at the expense of another	3.
Both species benefit from the relationship	4.

II. Multiple Choice – In the space provided, write the letter of the term or phrase that best completes the statement.

5. The process by which bacteria convert nitrogen from the atmosphere into a useable form is called.....

- a. assimilation c.
- c. nitrogen fixationd. denitrification
- __6. Species diversity is the number of....

b. ammonification

- a. species of animals living within an ecosystem
- b. species of plants and fungi living within an ecosystem
- c. species of bacteria and protists living within an ecosystem
- d. species of all six kingdoms living within an ecosystem
- _7. The increase in carbon dioxide in our atmosphere over the last 150 years was caused primarily by...
 - a. destroying vegetation
 - b. burning fossil fuels
 - c. increased respiration
 - d. polluting our water supply

Questions 8 – 11 refer to the diagram to the right.

- _8. The algae in the diagram to the right are...
 - a. decomposers c. producers
 - b. consumers d. herbivores
- __9. The krill in the diagram to the right are...
 - a. decomposers c. producers
 - b. consumers d. carnivores
- 10. The diagram to the right is called a
 - a. food chain c. pyramid of energy
 - b. food web d. trophic level
- _11. The most likely reason that this diagram has only five levels is that...
 - a. pollution probably destroyed all of the higher levels
 - b. no other animal is powerful enough to kill and eat the killer whale
 - c. too much energy is lost at each level to permit more levels
 - d. there is not enough energy initially present at the first level.



III. Complete the following table using the information below.

Many organisms live together in permanent relationships called SYMBIOSIS. Symbiosis is a Greek word that means "living together". There are three types of symbiotic relationships. These relationships are defined below. Use the definitions to determine which relationships are described in the chart. <u>Write PARASITISM</u>, MUTUALISM, or COMMENSALISM in the chart after the appropriate example.

<u>Parasitism</u> - A symbiotic relationship where one organism benefits from the association and the other is harmed.

<u>Mutualism</u> - A symbiotic relationship in which both organisms benefit from their association.

<u>Commensalism</u> - A symbiotic relationship in which one organism benefits and the other is unaffected.

Symbiotic Relationship	Type of Relationship
Epiphytes and tropical trees – trees give support & hold epiphytes to sun; epiphytes do not absorb nutrients from trees.	
Lichen – cyanobacteria produces food for the fungus; fungus provides water and minerals for the cyanobacteria.	
Barnacles and whales – whales provide barnacles with changing food supply, barnacles do not harm whale.	
Tapeworm and fish – tapeworm lives off nutrients from fish; fish suffers from tapeworm.	
Peas and nitrogen-fixing bacteria – peas provide a home for nitrogen- fixing bacteria: bacteria prepare free nitrogen so the plant can use it.	
Shark and remora _ Shark provides transportation for remora; remora feeds on shark kills and does not harm shark.	
Lamprey and fish – lamprey feeds off the body of the fish; fish eventually dies.	
Clown fish and sea anemone – clown fish cleans parasites from the anemone; anemone provides protection for the clown fish.	
Dodder on clover – dodder takes nutrients from clover and eventually kills the plant; clover provides support for dodder.	
Termites and cellulose-digesting microorganisms – microorganisms break down cellulose so that termites can digest it; termites provide home for microorganisms.	
Thorn acacia and ant – ants are nourished by drinking a solution produced by the acacia: the ants protect the acacia by cutting through vines of approaching plants and attaching other insects that might harm the acacia.	