**Study Guide: Ecology 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Essential Questions**

* How can we use science to answer questions about the natural world?
* How does your community influence your relationships?
* Where do you get your energy?
* How do organisms survive in an ecosystem?

**Vocabulary**

biotic

abiotic

organism

population

community

ecosystem

biosphere

photosynthesis

producer

reactants/raw materials

products

food chain

food web

energy pyramid

consumer

decomposer

herbivore

carnivore

omnivore

predator

prey

1st level consumer

2nd level consumer

3rd level consumer

terrestrial

marine

freshwater

carbon cycle

respiration

fossil fuels

water cycle

transpiration

runoff

evaporation

condensation

precipitation

nitrogen cycle

nitrogen fixation

competition

cooperation

limiting factors

symbiosis

mutualism

commensalism

parasitism

parasite

host

niche

hibernation

migration

**What You Need to Know**

1. Differentiate between biotic and abiotic factors.  Give 3 examples of each.
2. Explain how these words are related: organism, ecosystem, community, population
3. Why are plants called producers?  Where do plants get their energy?
4. What are the raw materials (reactants) and products of photosynthesis?
5. What organisms are the foundation of all food webs?  Give 3 examples.
6. How does energy pass through a food web?
7. Differentiate between producers, consumers, and decomposers.  Give 3 examples of each.
8. Give an example of a predator-prey relationship.  Which organism is predator?
9. What would happen to the prey population if the predators increased in number?  What would happen to the predator population if the prey decreased in number?
10. Draw a food web and the corresponding energy pyramid.  Label as producer, first-level consumer, second-level consumer, third-level consumer.
11. Which part of the energy pyramid has the largest population size?  How does population size change as you go up/down the pyramid?
12. What organisms cause materials to be continuously recycled in an ecosystem?
13. Draw a carbon cycle.  Label with place of photosynthesis, respiration, burning of fossil fuels, plants, and animals.
14. Draw a water cycle.  Label with runoff, transpiration, evaporation, precipitation, condensation, plants, and animals.
15. What basic resources that organisms need could be limiting factors?
16. What would organisms compete for?  Give 3 examples.
17. Complete the chart related to the three types of symbiosis.

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| --- | --- | --- | --- |
| **Symbiosis** | **Affect on organism #1** | **Affect on organism #2** | **Example** |
| Commensalism |  |  |  |
| Mutualism |  |  |  |
| Parasitism |  |  |  |

1. Give an example of a daily, seasonal, and a long term change that could affect an organism.
2. Give 2 examples of factors that could cause a population size to increase.
3. Give 2 examples of factors that could cause a population size to decrease.