

# Ecology Part 1 Study Guide

## Ecosystems and Energy Flow

Use the word bank to complete each statement below.

abiotic factors      biotic factors      primary succession      secondary succession  
succession      pioneer species      ecology      ecosystem      biodiversity  
habitat      community      biome      biosphere



1. A regular progression of species replacement is known as \_\_\_\_\_.
2. Nonliving factors, such as weather, that can affect ecosystems is known as \_\_\_\_\_.
3. The study of living things and their interaction with each other and the environment is known as \_\_\_\_\_.
4. Plants or mosses that first grow in a newly formed ecosystem are called \_\_\_\_\_.
5. The variety and genetic differences found within an ecosystem represents the ecosystem's \_\_\_\_\_.
6. A(n) \_\_\_\_\_ consists of a community and all of the physical aspects of the habitat.
7. The \_\_\_\_\_ is the portion of the planet that can sustain life.
8. All the different species that live together in an ecosystem are known as the \_\_\_\_\_.
9. Succession that occurs in places where there has previously been growth is called \_\_\_\_\_.
10. Living factors that are part of the ecosystem are called \_\_\_\_\_.
11. Succession that occurs where no soil has existed (no previous growth) is known as \_\_\_\_\_.
12. A \_\_\_\_\_ is part of the biosphere that has a specific climate and community.



13. Give one example of PRIMARY succession:

14. Give one example of SECONDARY succession:

15. Why are producers an essential component of an ecosystem? \_\_\_\_\_

16. Why are decomposers an essential component of an ecosystem? \_\_\_\_\_

17. In a marine food web, the total biomass of algae far outweighs the total biomass of all the killer whales. Why?  
\_\_\_\_\_  
\_\_\_\_\_

For numbers 18-30, write the letter that best matches the term in the space provided:

Term	Description
___ 18. Primary productivity	a. An assigned level in a food chain or other diagram based on how an organism obtains food.
___ 19. Producers	b. An interconnected web of food chains.
___ 20. Consumers	c. An animal that eats plants (or another producer).
___ 21. Herbivores	d. The rate at which producers make energy.
___ 22. Carnivores	e. The dry weight of organic matter.
___ 23. Omnivores	f. Organisms that obtain energy by eating plants or animals.
___ 24. Detrivore	g. An organism that obtains energy from wastes and dead bodies.
___ 25. Decomposer	h. Organisms that cause decay, such as bacteria and fungi.
___ 26. Food chain	i. Organisms in an ecosystem that are able to capture energy.
___ 27. Trophic level	j. An organism that eats other animals.
___ 28. Food Web	k. An organism that is both herbivore and carnivore.
___ 29. Energy pyramid	l. Path of energy flow through the trophic levels.
___ 30. Biomass	m. A diagram in which each trophic level is represented by a block of space proportional to the amount of energy stored within that trophic level.

31. Produce a FOOD CHAIN using 4 organisms of your choice:



32. Determine which organisms in your food chain are the following: producer, primary consumer, secondary consumer, etc. Write this terms under each organism above.

33. Assign each organism in your food chain above to each of the trophic levels below:

- First trophic level
- Second trophic level
- Third trophic level
- Fourth trophic level

34. Describe the 10% law

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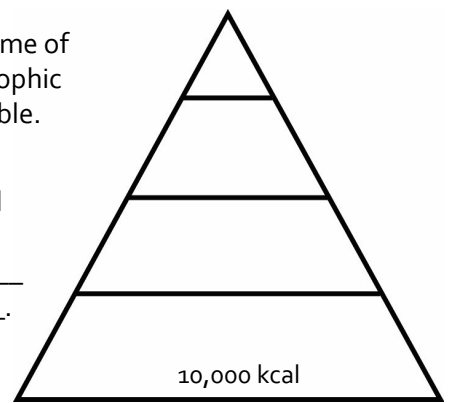
35. In the energy pyramid at right, write the name of the organisms from your food chain in each trophic level as well as the number of calories available.

36. In order to make your food chain a food web, what would you need to add to it?

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35. Define symbiosis: \_\_\_\_\_  
 \_\_\_\_\_

For each scenario below, determine if it is predation, parasitism, mutualism, or commensalism. The term may be used more than once.



Type of symbiosis	Description
36. _____	For centuries, dogs and humans have lived together. Dogs provide protection and companionship, and humans provide food and shelter.
37. _____	Tapeworms live inside the gut of other organisms. Though tapeworms do not cause pain, they eat the food that their hosts ingest and may deprive them of nutrients.
38. _____	Squirrels live in oak trees and eat their seeds (acorns). The tree is not negatively or positively affected by this.
39. _____	Leopard seals consume adelic penguins for nutrients, killing them in the process.
40. _____	Monarch butterflies consume nectar from the milkweed plant and lay their eggs on its leaves. As they collect nectar from plant to plant, they help pollinate the milkweed.

41. What is coevolution?

\_\_\_\_\_

Provide an example:  
 \_\_\_\_\_

42. What is a niche? \_\_\_\_\_  
 \_\_\_\_\_

Draw and describe each biogeochemical cycle.....

Water Cycle

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Carbon Cycle

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Nitrogen Cycle

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_