

Study Guide • Chapter 16

PRETEST

.....

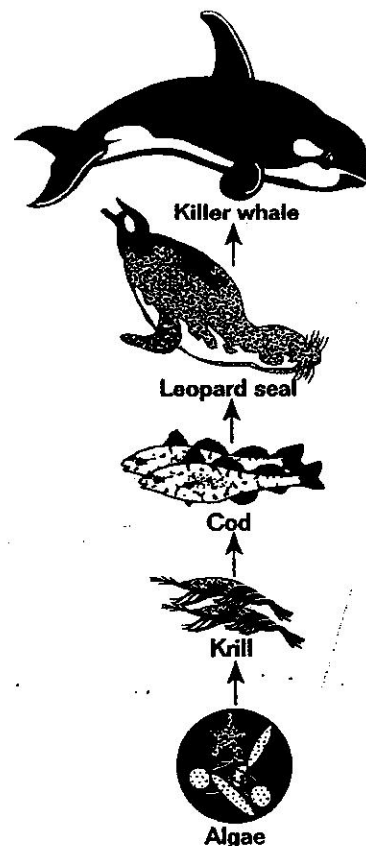
Ecosystems

In each space provided, write the letter of the term or phrase that best completes the statement or best answers the question.

- _____ 1. The many species that live together in a habitat are called a
 - a. kingdom.
 - b. habitat.
 - c. community.
 - d. trophic level.
- _____ 2. Species diversity is the number of
 - 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.
- _____ 3. The plants that first grow on an island formed by a volcano are part of a progression called
 - a. primary succession.
 - b. primary productivity.
 - c. secondary succession.
 - d. the climax community.
- _____ 4. In the living portion of the water cycle, water
 - a. is retained beneath the surface of the Earth as ground water.
 - b. evaporates from the soil.
 - c. is ingested by animals at rivers and lakes.
 - d. is taken up by the roots of plants.

Questions 5–8 refer to the diagram to the right.

- _____ 5. The algae in the diagram to the right are
 - a. decomposers.
 - b. consumers.
 - c. producers.
 - d. herbivores.
- _____ 6. The krill in the diagram to the right are
 - a. decomposers.
 - b. consumers.
 - c. producers.
 - d. detritivores.
- _____ 7. The diagram to the right is called a
 - a. food chain.
 - b. food web.
 - c. pyramid of energy.
 - d. trophic level.
- _____ 8. 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.



- _____ 9. The increase in carbon dioxide in our atmosphere over the last 150 years was caused primarily by
- destroying vegetation.
 - burning fossil fuels.
 - increased respiration by a larger human population.
 - polluting our water supply.
- _____ 10. The conversion of nitrate to nitrogen gas is called
- assimilation.
 - ammonification.
 - nitrification.
 - denitrification.

.....
 Choose the phrase from column B that best describes the term from column A.

Column A

- _____ 11. ecology
- _____ 12. habitat
- _____ 13. community
- _____ 14. ecosystem
- _____ 15. succession
- _____ 16. trophic level
- _____ 17. herbivores
- _____ 18. carnivores
- _____ 19. omnivores
- _____ 20. detritivores
- _____ 21. decomposers
- _____ 22. food chain
- _____ 23. food web

Column B

- animals at the second trophic level that eat plants
- the place where a particular population of a species lives
- bacteria and fungi that cause decay
- complex, interconnected path of energy in an ecosystem
- the study of the interactions of living organisms with one another and with their physical environment
- animals that eat both plants and animals
- a linear path of energy through the trophic levels of an ecosystem
- the many species that live together in a habitat
- an organism's place in an ecosystem based on its source of energy
- organisms that obtain their energy from organic wastes and dead bodies
- animals at the third trophic level that eat flesh
- the regular progression of species replacement
- a community and all the physical aspects of its habitat

.....
 Complete each statement by writing the correct term or phrase in the space provided.

24. In 1866, the German biologist Ernst Haeckel gave a name to the study of how organisms fit into their environment, calling it _____.
25. The physical aspects of an ecosystem's habitat include soil, water, and _____.
26. When succession occurs in areas where there has been previous growth, it is called _____.
27. The amount of organic material that the photosynthetic organisms of an ecosystem produce is called _____.
28. At each trophic level, the energy stored by the organisms is about _____ of that stored by the organisms in the level below.
29. By collecting, drying, and weighing all of the organisms in each trophic level of an ecosystem, ecologists obtain a pyramid of _____.

30. A hawk that eats a snake is a(n) _____ consumer.
31. _____ is water that is retained below the surface of the Earth.
32. _____ is the process of combining nitrogen gas with hydrogen to form ammonia.
33. _____ is the production of ammonia by bacteria during the decay of nitrogen-containing organic matter.

.....

Read each question or problem and write your answer in the space provided.

34. What components are included in an ecosystem and not in a community?

35. Why are bacteria and fungi both important organisms in an ecosystem?

36. What is a climax community?

37. Why are producers an essential component of an ecosystem?

38. How does a food chain differ from a food web?

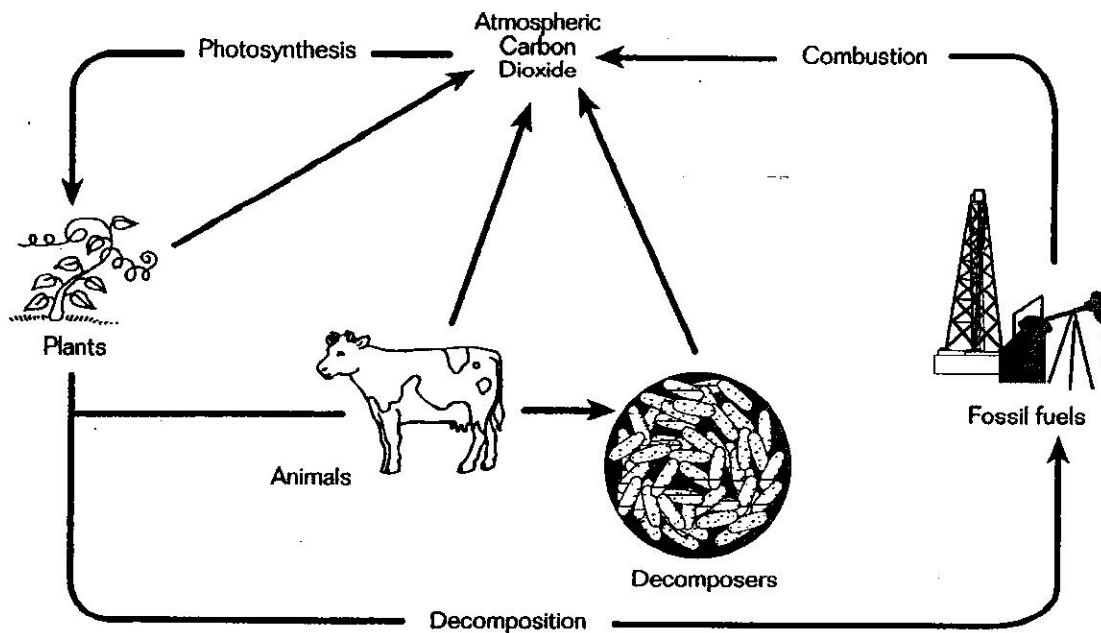
39. Why are energy pyramids never inverted?

40. Trace the cycling of water between air and the Earth.

41. List the four stages of the nitrogen cycle.

42. Why is phosphorus essential to living organisms?

Questions 43–44 refer to the diagram below of the carbon cycle.



43. How do the living organisms in the diagram above return carbon atoms to the pool of carbon dioxide in the air and water?

44. How are humans disrupting the carbon cycle?
