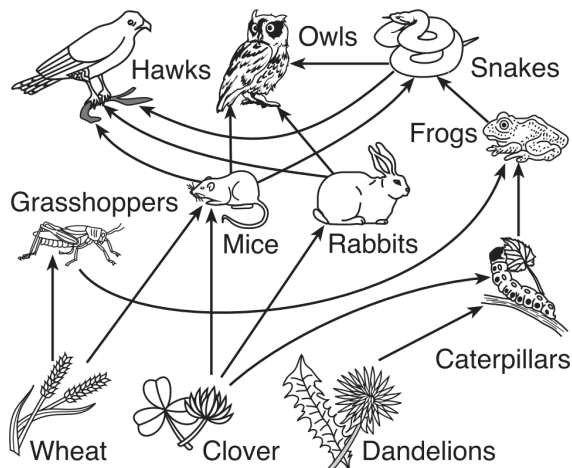


Name: _____

Date: _____

1. Missing from the diagram of this ecosystem are the



- A. biotic factors and decomposers
- B. abiotic factors and decomposers
- C. autotrophs, only
- D. heterotrophs, only

2. Which group would most likely be represented in a food chain?

- A. biotic factors
- B. abiotic factors
- C. inorganic compounds
- D. finite resources

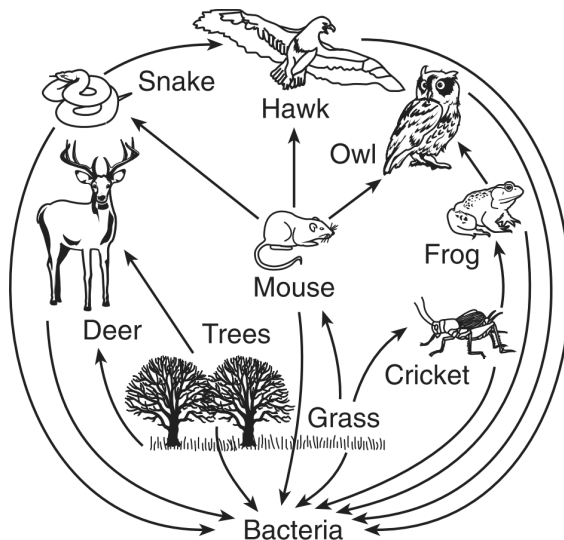
3. A relationship between a consumer and producer is best illustrated by a

- A. snake eating a bird
- B. tree absorbing minerals
- C. fungus breaking down wastes
- D. deer eating grass

4. The greatest number of relationships between the organisms in an ecosystem is best shown in

- A. a food chain
- B. an energy pyramid
- C. a food web
- D. an ecological succession diagram

5. Base your answer(s) to the following question(s) on the diagram below and on your knowledge of biology.

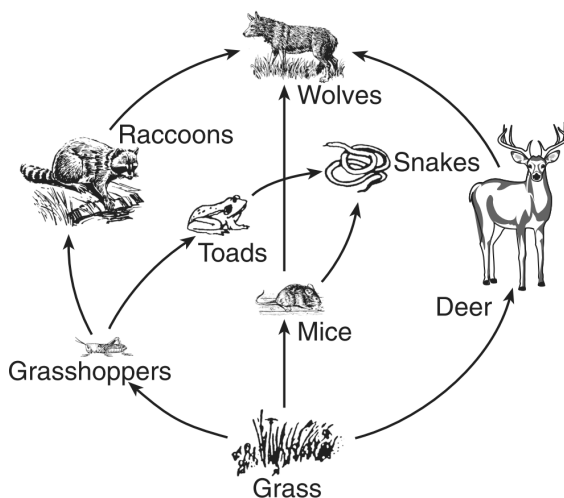


What is an appropriate title for this diagram?

- A. Energy Flow in a Community
- B. Ecological Succession
- C. Biological Evolution
- D. A Food Chain

6. The diagram below represents a food web.

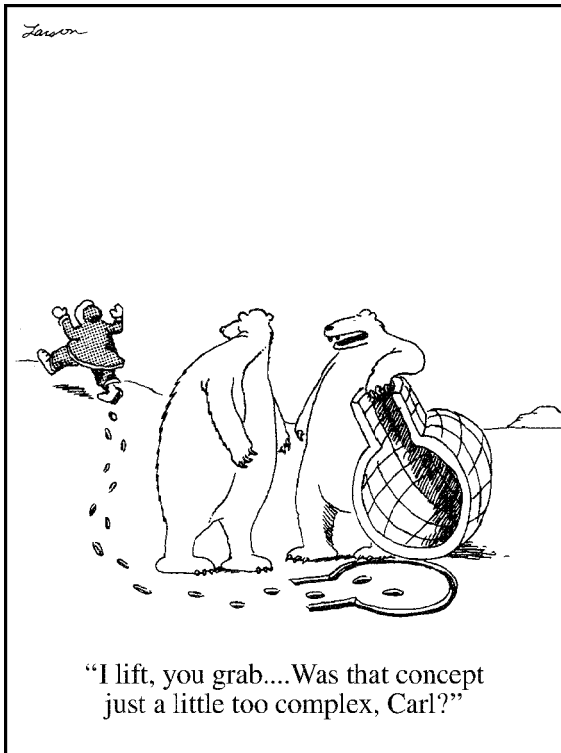
A Meadow Environment



Two of the herbivores represented in this food web are

- A. toads and snakes
- B. deer and mice
- C. wolves and raccoons
- D. grasshoppers and toads

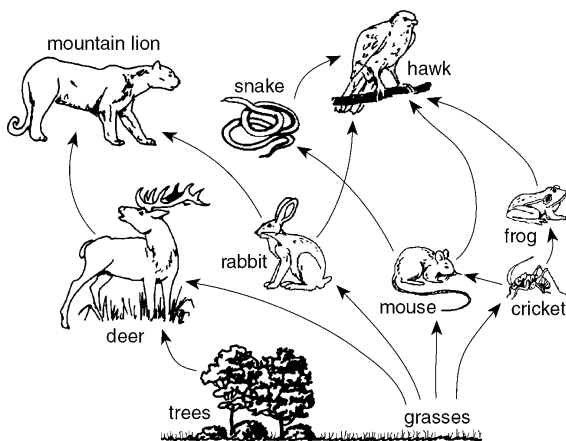
7. Which ecological term best describes the polar bears in the cartoon?



(adapted)

- A. herbivores B. parasites
C. carnivores D. producers

8. Base your answer(s) to the following question(s) on the diagram of a food web and on your knowledge of biology.



If the population of mice is reduced by disease, which change will most likely occur in the food web?

- A. The cricket population will increase.
B. The snake population will increase.
C. The grasses will decrease.
D. The deer population will decrease.

9. Base your answer(s) to the following question(s) on the passage below and on your knowledge of biology.

Keystone Species

A keystone species is one whose presence contributes to the diversity of life and whose extinction would lead to the extinction of other forms of life. A keystone species helps to support the ecosystem of which it is a part.

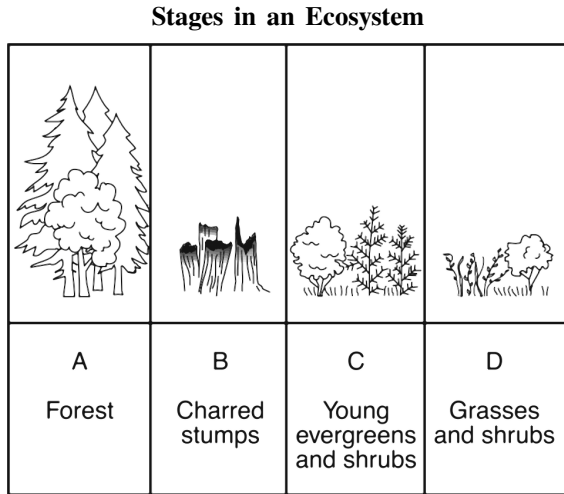
An example of what can happen when a keystone species is removed occurred when fur hunters eliminated sea otters from some Pacific Ocean kelp beds. Otters eat sea urchins, which eat kelp. With its major predator gone, sea urchin populations exploded and consumed most of the kelp. Fish, snails, and other animals associated with the kelp beds disappeared.

The grizzly bear is another example of a keystone species. Grizzlies transfer nutrients from the ocean ecosystem to the forest ecosystem. The first stage of this transfer is performed by salmon that swim up rivers, sometimes for hundreds of miles. Salmon are rich in nitrogen, sulfur, carbon, and phosphorus. The bears capture the salmon and carry them onto dry land, scattering nutrient-rich feces (wastes) and partially eaten salmon carcasses. It has been estimated that the bears leave up to half of the salmon they harvest on the forest floor.

Which organism is most likely *not* functioning as a keystone species in its ecosystem?

- A. beaver—transforms its territory from a stream to a pond or swamp, maintaining the habitat for a variety of native species
B. elephant—destroys trees, making room for grass species and preventing the environment from becoming a woodland
C. black-tailed prairie dogs—burrows act as homes to other creatures, including burrowing owls, badgers, rabbits, snakes, salamanders, and insects
D. zebra mussels—compete with native species, reducing the biodiversity of the Great Lakes ecosystem
10. Environmentalists are hoping to protect endangered organisms by calling for a reduction in the use of pesticides, because loss of these organisms would
- A. increase the mutation rate in plants
B. cause pesticides to become more toxic to insects
C. reduce biodiversity in various ecosystems
D. decrease the space and resources available to other organisms

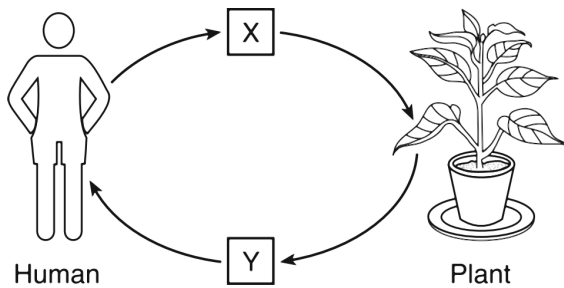
11. Over a long period of time, the stages represented in the diagram below were each present in a particular ecosystem.



After a forest fire, what is the most likely order in which these stages appeared?

- A. D → C → A → B B. B → D → C → A
C. A → B → C → D D. B → C → D → A

12. The diagram below represents a cycling of materials.



Which row in the chart below shows the substances represented by X and Y?

Row	X	Y
(1)	oxygen	carbon dioxide
(2)	glucose	oxygen
(3)	carbon dioxide	oxygen
(4)	amino acids	carbon dioxide

- A. (1) B. (2) C. (3) D. (4)

13. Scientists have been concerned about the reduction of shark populations due to overfishing off the east coast of the United States. Sharks feed on rays, which feed on scallops. Scallops feed on microscopic algae, which they filter from seawater. Without sharks, the rays consume and eliminate scallop beds, harming the scallop fishing industry. This situation demonstrates that

- A. sharks are not important for the stability of this ecosystem
B. reducing the shark population increases the quantity of scallops that can be harvested
C. humans can upset ecosystem stability by removing species
D. humans improve ecosystem diversity by removing predators

14. Base your answer(s) to the following question(s) on the data table below and on your knowledge of biology. The data table shows the number of breeding pairs of bald eagles in New York State from 1991 to 2003.

Number of Breeding Pairs of Bald Eagles in New York State from 1991 to 2003

Year	Number of Breeding pairs
1991	15
1993	20
1995	25
1997	35
1999	45
2001	65
2003	75

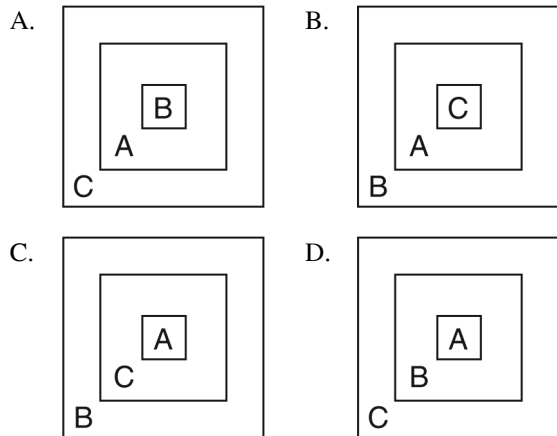
In which time period did New York State see the largest increase in breeding pairs of bald eagles?

- A. 1991–1993 B. 1993–1995
C. 1995–1997 D. 1999–2001

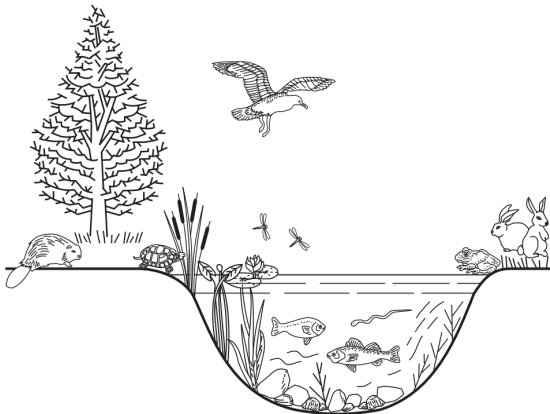
15. The chart below shows three ecological terms used to describe levels of organization on Earth.

A	ecosystem
B	population
C	biosphere

Which diagram best represents the relationship of these ecological terms?



16. The diagram below represents many species of plants and animals and their surroundings.



The diagram best represents

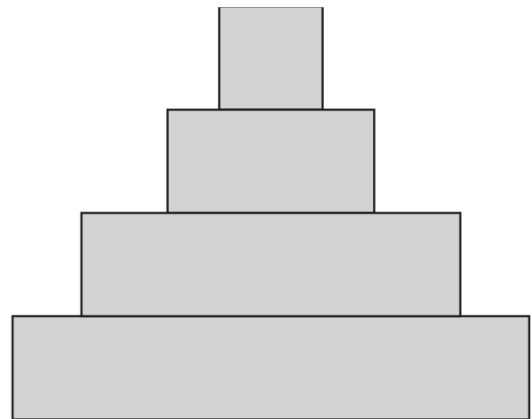
- A. a population B. a community
 C. an ecosystem D. the biosphere
17. Why is a mushroom considered a heterotroph?
- A. It manufactures its own food.
 B. It divides by mitosis.
 C. It transforms light energy into chemical energy.
 D. It obtains nutrients from its environment.

18. What is the primary source of energy for all the organisms in the ecosystem represented below?



- A. photosynthesis in the producers
 B. respiration in the heterotrophs
 C. light energy from the Sun
 D. minerals from the rocks

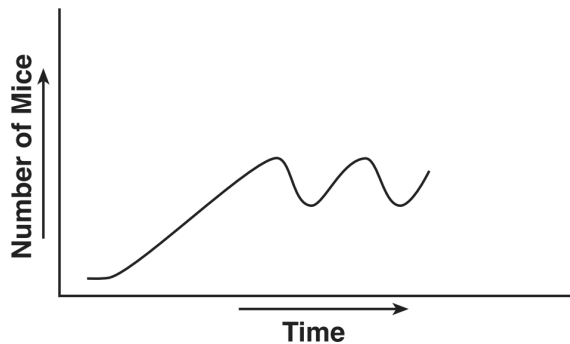
19. A diagram frequently used in ecological studies is shown below.



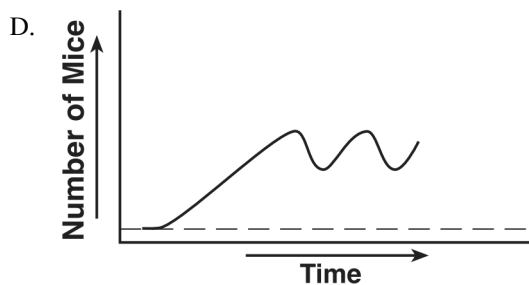
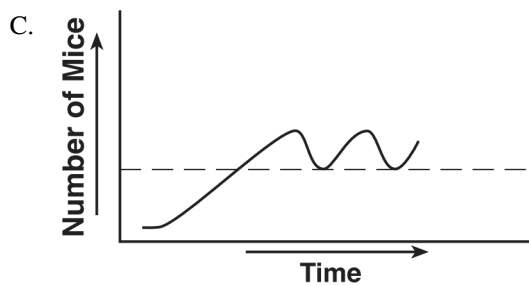
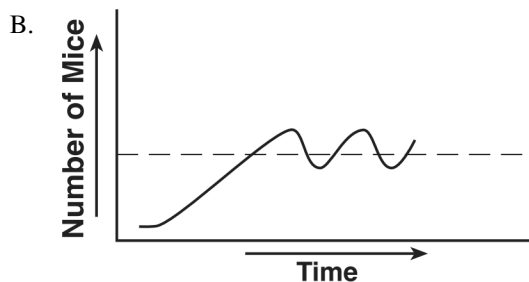
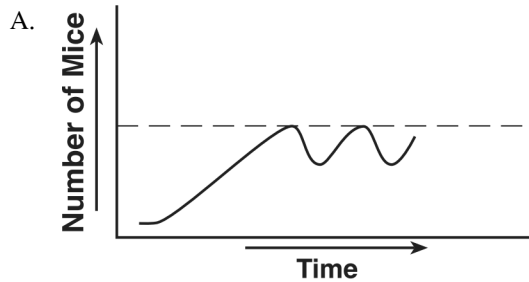
This diagram can be used to represent the

- A. dependency of animal survival on physical conditions in an ecosystem
 B. loss of energy from various groups of organisms in an ecosystem
 C. competition among species in an ecosystem
 D. mechanisms that maintain homeostasis in the plants in an ecosystem

24. The graph below shows the growth of a field mouse population in an ecosystem over time.



The dashed line indicating the carrying capacity for the mouse population is correctly shown on which graph?



25. Which row in the chart below best identifies the relationship between the mice and the wheat?

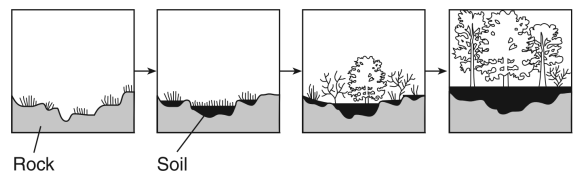
Row	Role of Mice	Role of Wheat
(1)	producer	consumer
(2)	predator	host
(3)	host	predator
(4)	consumer	producer

- A. (1) B. (2) C. (3) D. (4)

26. Which term refers to the ecological niche of many bacteria and fungi in an ecosystem?

- A. decomposer B. herbivore
C. producer D. scavenger

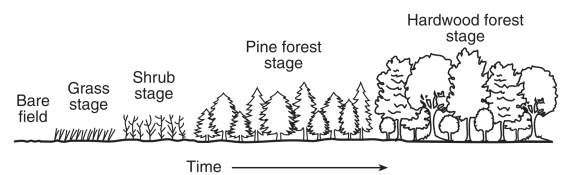
27. The diagram represents the changes in an area over time.



This series of changes in the area over hundreds of years is known as

- A. evolution
B. feedback
C. ecological succession
D. direct harvesting

28. Which concept is best represented in the diagram below?



- A. random mutations
B. ecological succession
C. genetic engineering
D. direct harvesting

29. A serious threat to biodiversity is

- A. habitat destruction
B. maintenance of food chains
C. competition within a species
D. a stable population size

1.
Answer: B
2.
Answer: A
3.
Answer: D
4.
Answer: C
5.
Answer: A
6.
Answer: B
7.
Answer: C
8.
Answer: A
9.
Answer: D
10.
Answer: C
11.
Answer: B
12.
Answer: C
13.
Answer: C
14.
Answer: D
15.
Answer: A
16.
Answer: C
17.
Answer: D
18.
Answer: C
19.
Answer: B
20.
Answer: A
21.
Answer: A
22.
Answer: A
23.
Answer: C
24.
Answer: B
25.
Answer: D
26.
Answer: A
27.
Answer: C
28.
Answer: B
29.
Answer: A