

Community Ecology

1. Define community. _____

2. Match the symbol representation with the correct description.

- | | |
|--------|--------|
| A. +/+ | C. +/- |
| B. -/- | D. +/0 |

_____ Interaction is beneficial to one species and detrimental to the other

_____ Interaction is detrimental to both species

_____ One species benefits from the interaction but the other is unaffected

_____ Interaction is beneficial to both species

3. Listed below are the types of interspecific interactions within a community. Use the choices from question 2 to indicate your answers to indicate how each interaction affects survival and reproduction of the two species involved in the interaction.

_____ Competition

_____ Predation

_____ Herbivory

_____ Parasitism

_____ Mutualism

_____ Commensalism

_____ Disease



4. Listed below are examples of the types of interspecific interactions. Identify the interaction described using the key below.

- A. Commensalism
- B. Competition
- C. Disease
- D. Herbivory
- E. Mutualism
- F. Parasitism
- G. Predation

_____ Lion eats a zebra

_____ Cows eat grass

_____ Insect lays its eggs on a living host

_____ Tapeworm lives inside the intestines of an animal

_____ Two species of lizards occupy the same space, eat at the same time of day, and eat the same insects

_____ Cow birds and cattle egrets feed on insects flushed out of the grass by grazing bison, cattle, horses, and other herbivores

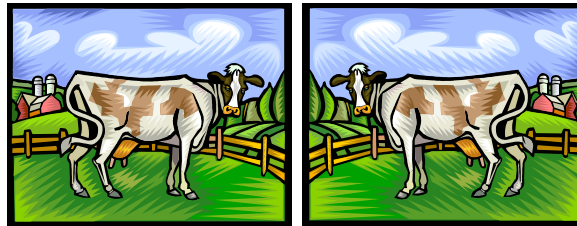
_____ Nitrogen fixation by bacteria in the root nodules of legumes

_____ Digestion of cellulose by microorganisms in the digestive systems of termites and ruminant mammals

_____ Photosynthetic unicellular protists living inside tissues of some corals

_____ Certain acacia trees provide food and housing for ants while the ants kill any insects or fungi found on the tree

_____ Flu virus infects members of the human population every winter



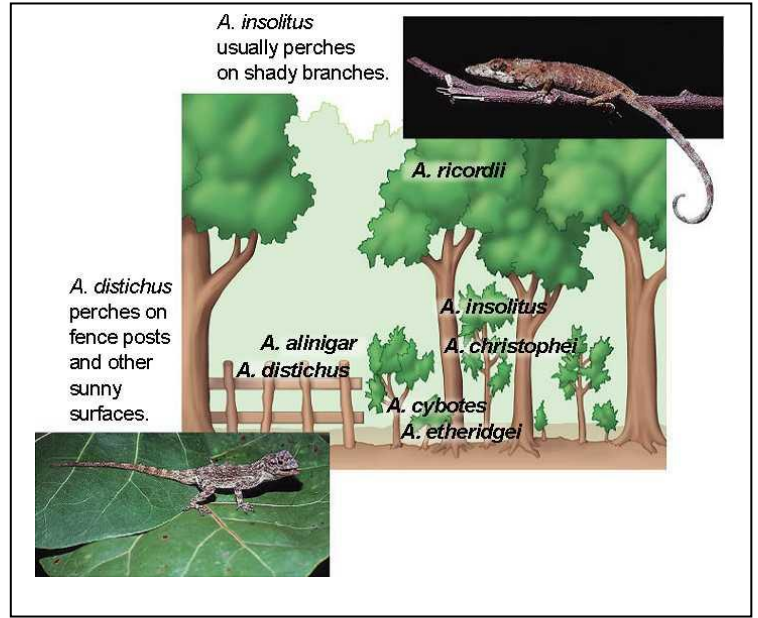
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5. The picture at the right shows seven species of lizards living in close proximity and all feeding on insects. How is the competition among these lizards reduced?



6. List 5 adaptations that help predators capture their prey.

7. List 5 adaptations that help prey avoid being eaten.



8. Explain how each of the following acts as a defense mechanism helping animals escape or avoid predators.

a. Cryptic coloration: _____

b. Aposematic coloration: _____

c. Mimicry: _____

9. Plants have evolved several defense mechanisms against being eaten by herbivores. List two and provide an example of a plant that uses the mechanism.

Mechanism 1: _____

Plant Example 1: _____

Mechanism 2: _____

Plant Example 2: _____

10. How is a food chain different from a food web?

11. Why is there a limit to the length of a food chain? _____



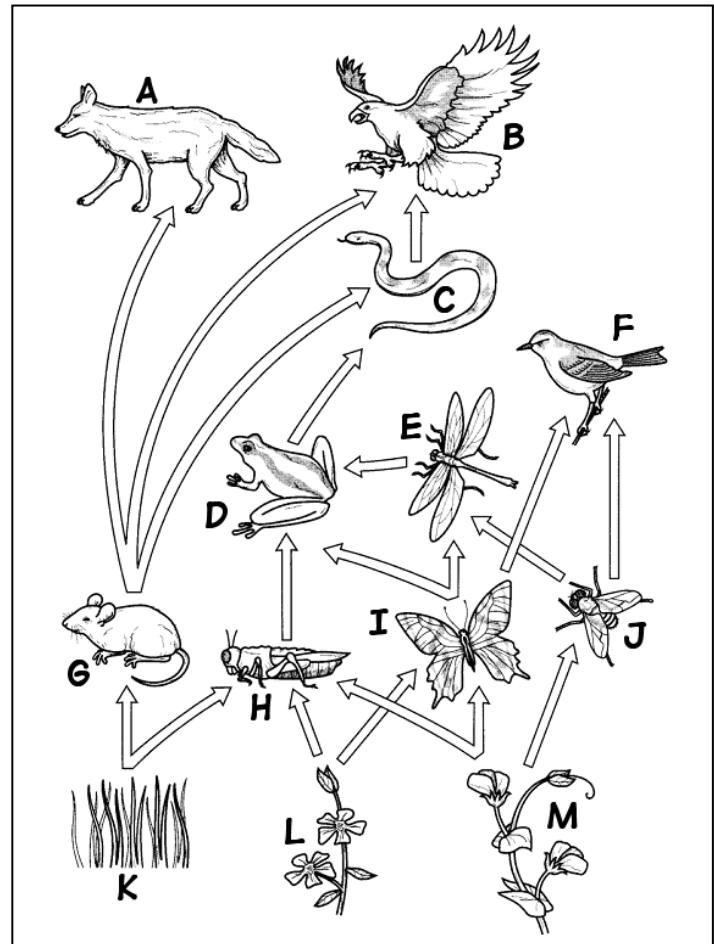
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12. Identify the trophic level described in each of the following. Use the key to indicate your answers.

- A. Detritivores
- B. Primary consumers
- C. Primary producers

- D. Secondary consumers
- E. Tertiary consumers

- _____ Autotrophs
- _____ Convert energy from the sun into chemical energy
- _____ Plants, photosynthetic protists, cyanobacteria, chemosynthetic bacteria
- _____ Herbivores
- _____ Eat primary producers
- _____ Primary carnivores
- _____ Eat primary consumers
- _____ Secondary carnivores
- _____ Consumers that obtain their energy by consuming dead plants and animals
- _____ Fungi, bacteria, nematodes, earthworms, insects, scavengers
- _____ Decomposers



- _____ Letters K, L, and M from the food web
- _____ Letters G, H, I and J from the food web
- _____ Letters D, E and F from the food web
- _____ Letter C from the food web
- _____ Letter A from the food web
- _____ Letter B from the food web



Changes to any species in a food web will impact other species. Questions 13 – 15 refer to the food web on page 5.

13. How will the food web be impacted if a pesticide kills all the grasshoppers?

14. How will the food web be impacted if the number of hawks decreases because of increased hunting?

15. How will the food web be impacted if there is an increase of grass and other plants because of more fertilizer being washed into the area from nearby farms?



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16. How does a dominant species' affect on a community structure differ from that of a keystone species'?

17. What happens during ecological succession?

18. Listed below are characteristics of the two kinds of succession – primary (P) and secondary (S). Identify each statement as true of primary (P) or secondary (S) succession.

- _____ Begins in a virtually lifeless area where soil has not yet formed
- _____ Succession that occurs on volcanic islands, on lava flows, and on rocks left by retreating glaciers
- _____ Usually begins with the establishment of lichens
- _____ Begins in habitats where communities were entirely or partially destroyed
- _____ Succession on abandoned cropland
- _____ Succession in lakes and ponds

