

## Pre- Assessment

### Concepts Assessed

Ecosystems are communities of organisms that interact with each other and their physical environment; that living factors are called biotic factors and non-living factors are called abiotic factors; biomes have specific biotic and abiotic factors that make each one unique; all organisms have needs that are met by their environment and adaptations provide an advantage in meeting those needs; basic interactions in ecosystems are food chains and food webs in which matter cycles and energy flows; overtime, ecosystems maintain a balance, but that balance can be changed positively or negatively by natural and human actions.

**Time** 45 minutes

**Materials** Individual  
Prompt

**Advance preparation** 1. Duplicate prompt for each student

### Procedure:

1. Explain that this assessment is to help the teacher and the students tell what they know about ecosystems. Explain that they will probably not be able to answer all the questions, but to try to do their best.
2. Explain that you will use the information from this assessment to help determine how best to help them learn more about ecosystems.

## Ecosystem Pre Assessment

1. Which of the following depends on the other for shelter in order to survive?
    - a. Cat - dog
    - b. Wolf – rabbit
    - c. Squirrel-tree
    - d. Rabbit – carrot
  2. What is an ecosystem?
    - a. The place an animal lives
    - b. The role that plants and animals have
    - c. The climate and other non living things in a certain area
    - d. The relationship of living and non-living things
  3. Which show a path of food energy?
    - a. Sun->fish->plant->bear
    - b. Bear->fish->plant->sun
    - c. Sun->plant->fish->bear
    - d. Plant->fish->bear->sun
  4. Which do decomposers provide for plants?
    - a. Nutrients
    - b. Protection
    - c. Shade
    - d. Shelter
  5. A non-living part of an ecosystem might be
    - a. Antlers on a deer
    - b. Shade on a person
    - c. A dead leaf
    - d. A nut on a tree
  6. If the sun were completely blocked so that it no longer provided energy to the plants in a lake, what would happened to the remaining life in the lake?
    - a. Only the animals that eat the plants would die
    - b. Only the plants would dies
    - c. All of the organisms in the lake would die
    - d. All of the carnivores would die
  7. Describe one way in which bacteria is helpful in the environment
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8. What is a nonliving thing in freshwater ecosystems?
- a. Fish
  - b. Frogs
  - c. Dead Plants
  - d. Water
9. Which of the following describes consumers?
- a. Organisms which are able to make sugars for energy
  - b. Organisms that must eat other animals for energy
  - c. Organisms that must eat other plant or animals for energy
  - d. Organisms that break down dead bodies and waste
10. Bacteria, fungi and earthworms are all?
- a. Scavengers
  - b. Decomposers
  - c. Consumers
  - d. Producers
11. Which of these is an example of camouflage?
- a. A moth that looks and acts like a hummingbird
  - b. A bear that sleeps in a cave all winter long
  - c. A colorful fish that lives in brightly colored coral
  - d. An elephant that uses its large ears to fan itself
12. Why can this animal survive in a polar ecosystem?



- a. It is adapted to survive in the dark
  - b. It is adapted to survive in the cold
  - c. It is adapted to survive with little waters
  - d. It is adapted to survive in high temperatures
- Explain the reasoning for your answer.

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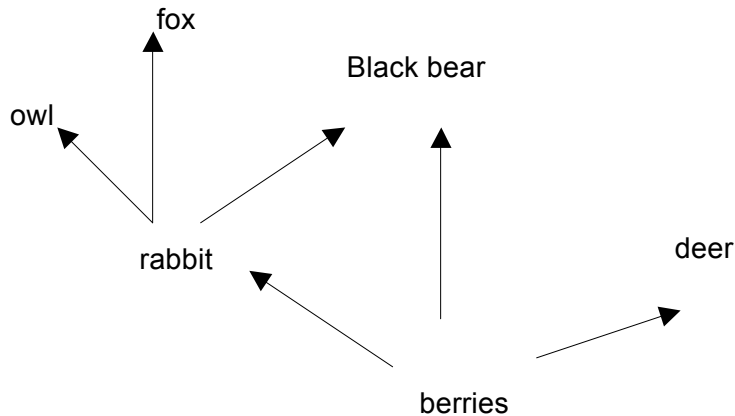
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13. Which organism would survive well in a desert?

- a. An animal that eats fish
- b. A plant with many thin leaves
- c. A plant with a waxy coating on its leaves
- d. An animal with a thick layer of fur and fat

14. Below is a food web.



Fill in the chart using this food web. Mark yes if you know what the word means, and no if you don't. Give an example of the word using names in the food web.

Word	Yes	No	Identify an organism in the food web that has this role
Producer			
Consumer			
Herbivore			
Carnivore			

15. In the above food web, what would happen to the rabbit if the black bear were taken out of the food web?

- a. The number of rabbits would decrease
- b. The number of rabbits would increase
- c. The number of owls would increase
- d. The number of deer would increase

16. What is an example of a positive way in which human action impacts an ecosystem? \_\_\_\_\_  
\_\_\_\_\_

17. Some rainforest plants live high up in trees and have long roots that grow into the soil. The word that best describes this is:
- a. Extinction
  - b. Adaptation
  - c. Abiotic
  - d. Producer

18. Complete the following chart. Mark yes if you know the word, no if you do not. If you know the word, write a definition for it.

Word	Yes	No	Definition
Food Chain			
Abiotic			
Omnivore			
Balanced Ecosystem			
Energy			

19. What is an example of a negative way in which human action impacts an ecosystem? \_\_\_\_\_  
\_\_\_\_\_

20. Mary says matter cycles in a food chain. What does that mean?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## Pre Assessment

### Expected Student Responses for a High Level Response

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  - c. A dead leaf
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  - a. Only the animals that eat the plants would die
  - b. Only the plants would dies
  - c. All of the organisms in the lake would die
  - d. All of the carnivores would die
7. Describe one way in which bacteria is helpful in the environment  
*Acts as decomposer, which breaks down matter and recycles it to the soil to be used again by plants.*

8. What is a nonliving thing in freshwater ecosystems?
- Fish
  - Frogs
  - Dead Plants
  - Water
9. Which of the following describes consumers?
- Organisms which are able to make sugars for energy
  - Organisms that must eat other animals for energy
  - Organisms that must eat other plant or animals for energy
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10. Bacteria, fungi and earthworms are all?
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  - Consumers
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12. Why can this animal survive in a polar ecosystem?

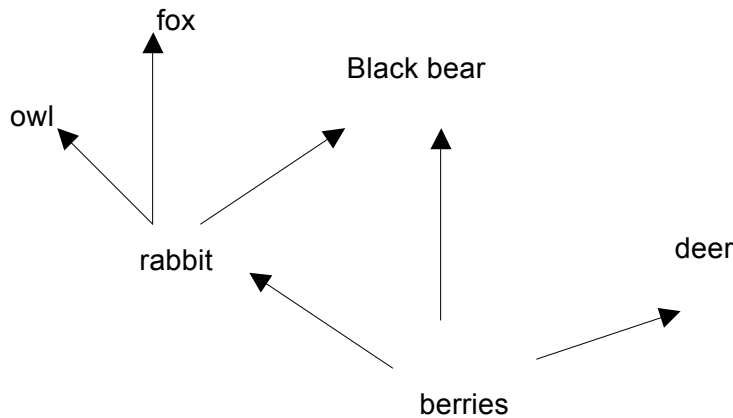


- It is adapted to survive in the dark
- It is adapted to survive in the cold
- It is adapted to survive with little waters
- It is adapted to survive in high temperatures

Explain the reasoning for your answer: *it has thick fur and a layer of fat that protects it from the cold*

13. Which organism would survive well in a desert?
- An animal that eats fish
  - A plant with many thin leaves
  - A plant with a waxy coating on its leaves
  - An animal with a thick layer of fur and fat

14. Below is a food web.



Fill in the chart using this food web. Mark yes if you know what the word means, and no if you don't. Give an example of the word using names in the food web.

*If students know the word, can they identify the organism?*

Word	Yes	No	Identify an organism in the food web that has this role
Producer			<i>berries</i>
Consumer			<i>Any of the following: rabbit, owl, fox, black bear, deer</i>
Herbivore			<i>Rabbit or deer</i>
Carnivore			<i>Any of the following: Owl, fox, black bear</i>

15. In the above food web, what would happen to the rabbit if the black bear were taken out of the food web?

- The number of rabbits would decrease
- The number of rabbits would increase
- The number of owls would increase
- The number of deer would increase

16. What is an example of a positive way in which human action impacts an ecosystem? *Any example that is positive, like organic farming, replanting trees that are harvested, living off the grid*



17. Some rainforest plants live high up in trees and have long roots that grow into the soil. The word that best describes this is:

- a. Extinction
- b. Adaptation**
- c. Abiotic
- d. Producer

18. Complete the following chart. Mark yes if you know the word, no if you do not. If you know the word, write a definition for it.

*If student checked yes, is the definition appropriate?*

Word	Yes	No	Definition
Food Chain			<i>Who eats whom; sun's energy captured by producer, converts it to nutrients for consumers; decomposers break down matter and return it to the soil</i>
Abiotic			<i>Non-living parts of an ecosystem like rock, rain, sun, wind</i>
Omnivore			<i>A type of consumer in a food chain or web that eats both plant and animals</i>
Balanced Ecosystem			<i>A community of biotic and abiotic components, which are healthy so that the population, over time is stable. The amount of organisms are supported by the amount of resources</i>

19. What is an example of a negative way in which human action impacts an ecosystem? *Any appropriate example like pollution, over fishing, over farming, cutting down the rain forest*

20. Mary says matter cycles in a food chain. What does that mean?  
*The amount of matter in the nutrients plants produce is cycled through the consumers and finally broken down by the decomposers back to the soil so that plants can use it again.*