

**Joyce Bachert**  
**ED 6380 – Digital Assessment of Learning**  
**Project Prep #1 & #2**  
**Fall, 2021**

**Outcomes:**

The student knows that biological systems work to achieve and maintain balance. The student is expected to		
11B	RS	describe how events and processes that occur during ecological succession can change populations and species diversity
The student knows that interdependence and interactions occur within an environmental system. The student is expected to		
12A	RS	interpret relationships, including predation, parasitism, commensalism, mutualism, and competition, among organisms
12B	SS	compare variations and adaptations of organisms in different ecosystems
12C	RS	analyze the flow of matter and energy through trophic levels using various models, including food chains, food webs, and ecological pyramids
12D	SS	describe the flow of matter through the carbon and nitrogen cycles and explain the consequences of disrupting these cycles

**Questions with alignment to outcomes:**

1. On a food chain or web, the arrows point toward the \_\_\_\_\_ and away from the \_\_\_\_\_. (12C)
2. Contamination of water bodies by man-made fertilizers can cause an overgrowth of \_\_\_\_\_, which causes a number of problems for aquatic ecosystems. (12D)
3. T/F: Organisms cannot use nitrogen in a gas form. (12D)
4. T/F: Food webs can be complex because many organisms feed on a variety of trophic levels. (12C)

5. During ecological succession, how does the growth of young hardwoods affect the organisms living in an ecosystem? (11B)
  - A. Grasses and low shrubs are unable to obtain the amount of light they need to survive, so there are small numbers of them.
  - B. The trees provide shelter and food for a variety of mammals, insects, and birds.
  - C. In autumn, falling leaves provide a source of energy for decomposers such as fungi.
  - D. All of the above
  
6. Which of the following best describes a predator/prey relationship in the forest? (12A)
  - A. Bacteria and mold break down fallen leaves on the forest floor
  - B. A spotted owl swoops down and captures a mouse
  - C. A deer eating the green leaves and berries on a holly bush
  - D. Mistletoe growing on a Mesquite tree
  
7. Essay: Describe how the events and processes of ecological succession and how they can change population and species diversity. (11B)
  
8. Essay: The table below provides some information about the feeding methods of the five rhinoceros species. Which rhinoceros species is best adapted for feeding in the large open grasslands of Africa's Serengeti ecosystem? Explain the reasons for your answer. (12B)

Rhinoceros Species	Method of Feeding
Black rhinoceros	Browses on woody plants and shrubs and eats some fallen fruits; rarely eats grass
White rhinoceros	Grazes on short grasses most of the year but will eat tall grasses when shorter grasses are depleted
Indian rhinoceros	Mainly grazes on tall grasses; will eat short grasses, shrubs, woody plants, and fruits
<u>Javan</u> rhinoceros	Browses the leaves and shoots of small trees and eats some fallen fruits
Sumatran rhinoceros	Browses the leaves and shoots of small trees and eats some fallen fruits

9. Drag and Drop: In any environment or ecosystem, organisms can have several different types of relationships. Three types of relationships are described below. Match the terms with the relationship described. (12A)

Mutualism

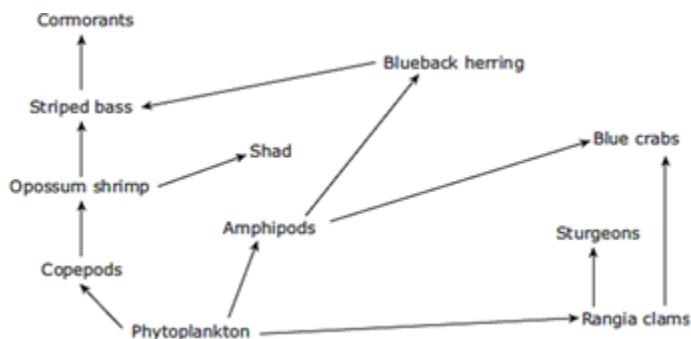
Commensalism

Parasitism

Predation

Relationship	Description
	Barnacles (small crustaceans) adhere to the skin of a whale in order to be deposited in a new location that is abundant in resources. The whale does not appear to be affected.
	Fleas attach to the skin of warm-blooded animals, feed on their blood, and make the animals itch.
	Fungal mycorrhizae live on plant roots and increase the plant's ability to absorb nutrients. The mycorrhizae are provided with carbohydrates from the plant.
	A lion stalks, captures, and eats a Cape buffalo.

10. Short Answer: What would happen to this food web if the phytoplankton all got a disease and died? (12C)



# Images of Quiz on Canvas:

## AJ Bachert - Ecology Quiz

Started: Dec 9 at 3:53pm

### Quiz Instructions

Read each question carefully and answer each question to the best of your ability. On the Essay/Short Answer questions, be sure to answer in complete sentences. Remember to click submit when you are done.

	Question 1	1 pts
	On a food chain or web, the arrows point toward the <input type="text"/> and away from the <input type="text"/> .	

	Question 2	1 pts
	Contamination of water bodies by man-made fertilizers can cause an overgrowth of _____, which causes a number of problems for aquatic ecosystems. <input type="text"/>	

	Question 3	1 pts
	Organisms cannot use nitrogen in a gas form.  <input type="radio"/> True <input type="radio"/> False	

	Question 4	1 pts
	Food webs can be complex because many organisms feed on a variety of trophic levels.  <input type="radio"/> True <input type="radio"/> False	

	Question 5	1 pts
	During ecological succession, how does the growth of young hardwoods affect the organisms living in an ecosystem?  <input type="radio"/> D. All of the above <input type="radio"/> B. The trees provide shelter and food for a variety of mammals, insects, and birds. <input type="radio"/> C. In autumn, falling leaves provide a source of energy for decomposers such as fungi. <input type="radio"/> A. Grasses and low shrubs are unable to obtain the amount of light they need to survive, so there are small numbers of them.	

### Question 6

1 pts

Which of the following best describes a predator/prey relationship in the forest?

- ☐ A spotted owl swoops down and captures a mouse
- ☐ Bacteria and mold break down fallen leaves on the forest floor
- ☐ Mistletoe growing on a Mesquite tree
- ☐ A deer eating the green leaves and berries on a holly bush

### Question 7

1 pts

Describe how the events and processes of ecological succession and how they can change population and species diversity.

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12pt Paragraph B I U A T<sup>2</sup>            

### Question 8

1 pts

The table below provides some information about the feeding methods of the five rhinoceros species. Which rhinoceros species is best adapted for feeding in the large open grasslands of Africa's Serengeti ecosystem? Explain the reasons for your answer.

### Rhinoceros species and their feeding habits

Rhinoceros Species	Method of Feeding
Black rhinoceros	Browses on woody plants and shrubs and eats some fallen fruits; rarely eats grass
White rhinoceros	Grazes on short grasses most of the year but will eat tall grasses when shorter grasses are depleted
Indian rhinoceros	Mainly grazes on tall grasses; will eat short grasses, shrubs, woody plants, and fruits
Javan rhinoceros	Browses the leaves and shoots of small trees and eats some fallen fruits
Sumatran rhinoceros	Browses the leaves and shoots of small trees and eats some fallen fruits

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12pt Paragraph B I U A T             

1 pts

Commensalism	[ Choose ]
Parasitism	[ Choose ]
Mutualism	[ Choose ]
Predation	[ Choose ]

1 pts

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graph TD
    Phytoplankton --> Copepods
    Phytoplankton --> Amphipods
    Phytoplankton --> Rangia_clams[Rangia clams]
    Copepods --> Opossum_shrimp[Opossum shrimp]
    Opossum_shrimp --> Striped_bass[Striped bass]
    Striped_bass --> Cormorants
    Amphipods --> Blueback_herring[Blueback herring]
    Amphipods --> Blue_crabs[Blue crabs]
    Shad --> Blue_crabs
    Sturgeons --> Blue_crabs
    Rangia_clams --> Blue_crabs
  
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12pt Paragraph B I U A T<sup>2</sup>

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## Data

One student completed this quiz. The student earned a 95% on the quiz. A standards level analysis showed the following results:

Standard	Biol 11B (readiness)	Biol 12A (readiness)	Biol 12B (supporting)	Biol 12C (readiness)	Biol 12D (supporting)
Number of questions included	2	2	1	3	2
Number of questions answered correctly	1.5	2	1	3	2
Standard mastery percentage	75%	100%	100%	100%	100%