

A "Vital Commodity" in Ecosystem (Lab Questions)

Play the game for ten or fifteen minutes. Then follow your teacher's directions in order to complete the following chart:

Organism	Number of beans At start	Number of students Representing organism	Total number of beans at START	Total number of beans at FINISH
Plankton	30	X	=	
Mullet	15	X	=	
Shrimp	15	X	=	
Crab	10	X	=	
Redfish	10	X	=	
Dolphin	10	X	=	
Heron	5	X	=	
Crocodile	5	X	=	

After completing the chart with data from everyone in the class, answer and discuss the following questions.

Questions

1. Which organisms finished with the most beans? Which got the least? Why do you think this happened?
2. What does the "Supply" represent in a real ecosystem? Why were the plankton the only organisms allowed to withdraw beans from the box?
3. What do you think would have happened to the crocodiles if they could have taken beans from the plankton?
4. Do you think the mullet has an advantage in the game over the dolphin? Why or why not?
5. You may have realized that there were many more plankton in the game than there were crocodiles or herons. Why do you think your teacher set the game up that way?

6. Dolphins are much larger organisms than mullet. Yet the dolphins started out with fewer beans than did the mullet. So we know that the beans cannot represent body weight of a single organism. What then might the beans represent?

7. Why were all the organisms in the game required to place beans in the "Losses" box?

8. Why were you required to place a bean in the "LOSSES" box after encountering an organism that you could not eat and that could not eat you?

9. At the beginning of this activity, we talked about a "vital commodity." Perhaps by now you realize that the "vital commodity" is energy. Go back and recast your answers to questions 1-8. Explain how in each instance the beans represent energy flow through ecosystems.