

Name: _____ Date: _____ Class/Period: _____

Lesson 6: Biodiversity Game

Task: You are responsible for the health of a community of birds and plants.

How to play:

1. You will be given a set of cards (birds or plants). Each card has information about one species of bird or plant. There is an icon in the upper right corner of each card:



tree



shrub



bird

2. You will be given a set of 25 colored markers. Each marker represents an individual member of a species. For example, if your community has 4 crows, you will place 4 counters on your blue crow card.
3. When you receive your *Community Population*, place the correct number of counters on each card.
4. **Predict:** Do you think your community will survive changes that happen in the city? Why or why not?
5. Listen for an event that occurs in your city. Reflect changes to your community by adding or deleting counters from your cards and record the changes in the table provided.

Reflect:

1. Share your results with those of your classmates. Which communities were the healthiest at the end of the game? What evidence did you use as the basis for your conclusion?
2. How did the initial species richness, species evenness, and abundance of individuals for the communities affect the results of the game? What were the characteristics of the “healthiest” communities?

Name: _____ Period/Class: _____ Date: _____

Biodiversity Game Round #2: Creating your own Community

Procedure:

1. Look at your results from Round #1. Think about the characteristics of the community with the greatest health in terms of richness, abundance and evenness. Consider which species had difficulty surviving the environmental changes and which did well.
 2. Your goal is to make a community that will be stable during the events. You now have a maximum of 40 birds and 40 plants to populate your new community (same species).
 3. Your community must follow this rule: Birds must have a food source and a nesting ground. For example, since crows nest in trees, you must have at least one tree if your community has crows.
 4. Determine your initial number of each species of bird and plant. Record your results in the table for Round #2.
 5. Describe the reasons behind the design of your community:
-
6. What do you think will happen to your community as a result of the events? Predict your outcomes:
-
-
-
-
-
-
-
-
-
-
7. Your teacher will read through the event cards. Record your results in the table for Round #2.

Round 1

	# of each species	Number of each species after the event						
What happened?	Starting	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7
American Crow								
Song Sparrow								
Tree Swallow								
Black Phoebe								
Anna’s Hummingbird								
Bird richness								
Bird abundance								
Bird: Shannon-Weaver								
Coast live Oak								
Desert Willow								
Fragrant Sage								
Sycamore								
Blue Gum Eucalyptus								
Plant richness								
Plant abundance								
Plant: Shannon-Weaver								

Conclusions:

1. How did your community (Round #2) compare to your initial community (Round #1)? Did your changes improve the health of your community by the end of the events? Why or why not?
2. Look back at the events you recorded in your table. Which of the events were caused by the activities of people? Did you think those events were positive or negative, and why?
3. What other things might people do that could influence the biodiversity of an ecosystem? Would these actions have positive or negative effects?

Round #2

	# of each species	Number of each species after the event						
What happened?	Starting	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7
American Crow								
Song Sparrow								
Tree Swallow								
Black Phoebe								
Anna's Hummingbird								
Bird richness								
Bird abundance								
Bird: Shannon-Weaver								
Coast Live Oak								
Desert Willow								
Fragrant Sage								
Sycamore								
Blue Gum Eucalyptus								
Plant richness								
Plant abundance								
Plant: Shannon-Weaver								