



MINNESOTA ZOO™
Changing how you see the world

Ecology Predator/Prey Game. Pre-visit Activity

MN Graduation Standards supported:

Grade 9-12 Strand IV.F
The student will describe and explain the cycling of matter and flow of energy through an ecosystem's living and nonliving components.

Vocabulary:

ecosystem,
food web
food chain
producers
consumers
decomposers
energy pyramids
flow of energy vs. cycling
of matter in an ecosystem.

Introduction:

This is an interactive game where the students play roles in a woodland food web.

Objectives:

At the end of this lesson, the students will:

1. Create awareness of different ways energy can flow through a food web by role playing possible predator-prey relationships.
2. Create awareness that matter from dead top predators in an ecosystem is decomposed by bacteria and mushrooms and recycled by plants with addition of “new” energy from the sun to create more carbohydrates at the base of the food web.
3. Develop logical understanding of why “balance” among producers, predators and prey is necessary in order for an ecosystem to be sustained over time.

Procedure:

PREP:

1. Use your curriculum units to introduce the biome concepts.
2. Gather the following materials:
 - Whistle
 - Approximately 2 square feet of tag board for each costume (*Need more sheets than students in your largest class*).
 - Open space for running and chasing (away from other classes if possible!)



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Links:

Procedure Continued:

3. Create a list of woodland organisms for the food web costume “roles”:
 - a. “Disaster Dispenser” (takes out top predators. i.e. hunter, accident)
 - b. Top Predators: hawk or eagle, mountain lion
 - c. Carnivores: fox, snake, frog, shrew (eats insects)
 - d. Herbivores: rabbits, deer, insects
 - e. Producers: grass
 - f. Decomposers: mushrooms, bacteria
4. Make the “costumes”. A two foot square of tag board folded in half works well.
5. Cut out a circle big enough to put a head through it.
6. Assign an organism to each student(s).
7. Have the student(s) write the name of their animal or organism and draw a simple sketch of it, then color it in.
8. SUGGESTION: Have more costumes than students so they can be traded around and multiple choices are possible. They also will wear out with repeated use!

ACTIVITY:

1. SUGGESTION: This is preferably an outdoor game of tag where an individual can chase and catch any creature “it” can eat in a food chain. Open spaces such as back hallways, gyms, locker bay areas work fine as long as other classes won’t be disrupted.
2. Randomly hand out the costumes to the students. Make sure you include all components of a woodland food web, including many “grass” and “plant” costumes. Include some mushrooms and bacteria (ideal for more sedentary kids who can’t or don’t wish to run.)
3. To start, give at least three students that are “Grass” a handful of green 3x5 card to represent carbohydrates (sugars) at the base of the food web.
4. Herbivores (primary consumers) such as rabbits must catch “Grass” and obtain a green card signifying that they have eaten and are alive and available to be eaten.
5. Carnivores (secondary consumers) try to catch an herbivore and take its green card. The “dead” rabbit is out of the game and must sit down.
6. A carnivore that has eaten (has a green card) can be caught by any predator that can eat it.

Procedure Continued:

7. Top predators like hawks or lions can only be taken out by being caught by “Disaster” Disaster can only kill top predators who have green cards.
8. The green cards collected by “Disaster” are handed to a decomposer (bacteria or mushroom) who in turn pass the green cards back to “Grass”. This way grass stays alive as long as it does not run out of green cards.
9. The teacher (leader) should blow a whistle or noisemaker to start and stop the simulation (which usually takes only a few minutes if kids get into it!
10. When the game is called, all still alive hold up green cards so everyone can see who is left in the food web.
11. All green cards are then returned to the grass before starting another game.
12. Have the students switch roles every couple of rounds to experience first hand who eats whom.
13. Only play 4-5 five rounds.
14. Return to the classroom and immediately discuss the types of interactions that happened
15. Introduce the main concepts of the unit. Students should understand the consequences of unbalanced predator-prey relationships.