

2. What's for Dinner?

(Modified from "Please Pass the Wheatgrass")

Time: 20-25 minutes

Supplies:

- Pie pan, wrapped candy (one students have a strong preference for, and one that may not automatically select). You will need approximately equal numbers of candy so each student could choose either type.
- Kidney beans, black beans, lima beans, cookie sheet.

Background:

In natural ecosystems, each animal species occupies its own niche, **which enables the animals to share the same habitat**. Some niches overlap, leading to competition between animals. Most animals, however, have food or other habitat preferences slightly different than those naturally occurring in the same area. Domestic animals (sheep, cattle, horses, goats) likewise have preferences depending on their species. Some strongly prefer grass, forbs (weeds and flowers), or the leafy parts of shrubs.

Depending on which animals live in a particular area, which types of forage grow there, the amount of precipitation, and numerous other conditions as well, the amount of food available may grow quickly or slowly. In attempting to manage the land for a variety of animals, land managers must monitor the forage and water as well as the number and types of animals present. Adjustments must be made so that the animals do not suffer and the rangelands don't deteriorate.

Directions:

1. Pass around a pie pan with an approximately equal numbers of wrapped candied likely to elicit a strong preference toward one type. *Count out enough candies that each student could choose either type and place them on the pie plate.*
2. Instruct students to take one candy as the pan is passed by, tell students to remember which type they take, and let them eat their candy. While eating their candy, answer the following questions:
 - What are **renewable resources**?
 - Are rangeland plants a renewable resource? *(Yes, if managed carefully, plants will continue to grow back (just like your lawn!). What do rangeland plants (any plants) need to grow? Sunlight, water, soil nutrients.*
3. Review how to identify forbs, grasses, and shrubs (see Section 3: Rangeland Plants). Ask students the following questions (if necessary).
 - If a plant has a hollow stem, what would it be? *Grass*
 - If a plant had a pretty flower and non-woody stems, it would be? *Forb*
 - If a plant has long leaves with parallel veins, what would it be? *Grass*
 - If a plant is woody with leaves that may be eaten by livestock and wildlife, what would it be? *Shrub*
4. In this activity, beans represent grasses, forbs, shrubs (*may consider writing what each bean represents in a prominent location for reference*),
 - Kidney beans (red) are grasses
 - Black beans are forbs
 - Lima beans (white) are shrubs

5. Show the students the candies remaining in the pie plate—comment, “I see that you like _____ most”. Just like the candies, different rangeland animals prefer certain types of plants to eat. Write in a prominent location the food preference of each type of animals.

- **Cattle** prefer grasses
- **Elk** have a similar diet to cattle
- **Horses** may consume slightly less grass and more forbs and shrubs than cattle
- **Deer** tend to prefer forbs and shrubs
- **Goats** also prefer forbs and shrubs
- **Sheep** (domestic or wild) tend to select shrubs in the winter, forbs in the spring, and grasses in the summer.

6. Assign each student to one of these animals (e.g., 2 cow, 1 deer, 2 sheep, etc.). Have students stand around the cookie sheet with the beans in the middle.

7. All the animals are now on the range. The members of each animal type now goes to the feeding area—one at a time. The first animal will take one bean at a time—choosing their preferred type of food. This process continues until the supply of one type of food is exhausted. Stop and note which type of food is gone first. You can continue until animals are no longer able to find any food, or stop for discussion.



Reflect:

- What do you think animals are likely to do if their preferred food supply runs out in a single growing season? (*Animals could eat something else, move to another part of the range, or go hungry and die.*)
- What would happen if the number of horses in the area doubled? (*The amount of food in the area—particularly their favorite foods, such as grasses and shrubs—would decline more rapidly.*)
- How would this affect the food supply of cattle and elk? (*Their food supply would decline as well*)
- How might the situation change if the dominant form of wildlife in the area was deer, which tend to eat more forbs and shrubs? (*The supply of grass for horses and cattle would last longer*)
- What other factors might alter the situation? *Many answers are possible, including drought, fire, and a prolonged winter*)

Remind students that this situation showed what would happen in a single summer. Show them that the next growing season would produce... a second tray of beans! You could repeat the activity with different ratios of plants (beans) of different numbers of each type of animal.