

Where Shall We Eat?

Grade 2-4

Focus: At the end of the lesson the student will:

1. Be able to identify bunchgrass and rhizomatous grass.
2. Be able to identify where bunchgrass and rhizomatous grass grow (rangeland or pastureland).
3. Be able to understand that water is a determining factor in the types of grass that are found in rangeland or pastureland.

Summary: Our students should appreciate the differences between rangeland grasses and irrigated pastureland grasses and the important role that they each play in raising live stock.

Exploration:

Teacher: The Deer Lodge Valley was settled because it had fantastic rangeland for cattle. Today we are going to learn about the two main groups of grasses. Each of these grass groups is important, but grow best under different conditions.

Discussion Questions:

1. Would you rather sit in a dry-land range or an irrigated pasture and why?
2. Would rangeland or pasture have more vegetation?
3. If you were a cow, would you rather graze in rangeland or pasture?
4. Which grass is more likely to grow in rangeland or pastureland?
5. What is the importance of rangeland?

Materials Needed:

1. Diagram and pictures of bunchgrass
http://www.montanakids.com/db_engine/presentations/presentation.asp?pid=215&sub=Symbols+of+Montana
http://www.blueplanetbiomes.org/blue_grama-grass.htm
<http://www.lib.ksu.edu/wildflower/westernwheat.html>
<http://plants.usda.gov>
2. Diagram and pictures of rhizomatous grass
<http://www.ipm.ucdavis.edu/PMG/WEEDS/quackgrass.html>
<http://njaes.rutgers.edu/weeds/weed.asp?quackgrass>
<http://www.ipm.ucdavis.edu/TOOLS/TURF/TURFSPECIES/kenblue.html>
3. PVC pipe square yard form per group
4. Drawing paper and pencils
5. Rangeland and pasture to visit
6. Pasture pictures
www.istockphoto.com/file -search pasture land
7. Rangeland pictures
www.fotosearch.com/photos-images/rangeland.html

Defined Terms:

Bunchgrass- any grass that grows in clumps or tufts may, rather than forming a sod or mat; and does not spread by... rhizomes. As perennial plants, they live more than one season. With long roots that may reach two metres into the soil, bunch grasses can find water where other plants wither. (Wikipedia)

Rhizomatous- grasses in which the plants are connected underground by rhizomes (stems) which forms a sod. The roots are shallow and run parallel to ground level.

Rangeland- land, which has predominately native grasses and vegetation. Water is dependant on natural sources.

Pastureland- land, which has predominately introduced grasses. The field is irrigated to supplement natural rainfall.

Activity:

The teacher will define bunchgrass and rhizomatous grass using diagrams and pictures. Students will identify whether a picture is a bunchgrass or rhizomatous grass.

The teacher will define rangeland and pastureland using pictures. Students will identify whether a picture is a rangeland or pastureland.

Application:

Organize a field trip to the Grant-Khors Ranch (or any other rangeland/pastureland). Permits to collect samples from the park may be obtained from <http://rprs.nps.gov/research/ac/apps/apply/AppInstructions>

The teacher will take the students to a rangeland. The teacher will identify bunchgrass and rhizomatous grass. The students will have the opportunity to see and touch each group of grass.

As a class, randomly place the PVC square yard frame. Draw and count the bunchgrass, rhizomatous grass. Any other plant can be placed in the "other" group.

Students will work in predetermined groups. Each group will repeat the activity in a randomly selected area.

Repeat the exercise in the pastureland.

Return to the classroom. Compare the number of bunchgrass and rhizomatous grass found in rangeland and pastureland. Discuss which characteristics of bunch grass help it grow better in rangeland. Discuss which characteristics of rhizomatous help it grow better in pastureland. Discuss the benefits of both pastureland and rangeland.

Montana Science Content: End of Grade 4:

Standard 1: Benchmark 1,2,3

Standard 2: Benchmark 1

Standard 3: Benchmark 1,5

Standard 5: Benchmark 1,4

Standard 6: Benchmark 1