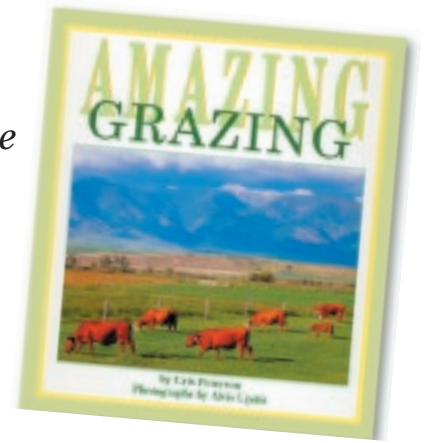


Lesson Plan 1:

Amazing Grazing

Best for grades K-6. Includes adaptations for both the (K-2) and intermediate (3-6) levels.



Basic Principles:

- Each ecosystem hosts a variety of plants and animals that are uniquely suited to that environment.
- Sustainability, or a renewable balance between man and nature, is necessary for a healthy ecosystem.
- People interact with and impact their environment in both positive and negative ways.
- Healthy rangelands depend on maintaining the water, soil, plant, and animal resources.
- Active management by ranchers maintains healthy ecosystems.
- Livestock grazing is compatible with wildlife use and recreation.
- The aspects of an ecosystem (soil, water, vegetation, animals, etc.) impact and rely upon each other.

Fundamental Concepts:

- Selectivity
- Land use / multiple use
- Photosynthesis
- Conservation
- Grazing
- Ranching
- Ecosystems
- Natural resource ecology
- Sustainability
- Erosion
- Recreation (e.g. Hunting, Fishing)
- Livestock / Wildlife
- Connectivity
- Monitoring

Montana Content Standards Met By This Lesson:

End of Grade 4

- Science #3: benchmarks 1 & 4
- Science #4: benchmark 2
- Science #5: benchmarks 1, 3, & 4

- Social Studies #3: benchmarks 3 & 7
- Writing #1: benchmarks 1, 2, 3, & 4
- Writing #2: benchmarks 1, 2, 3, 4, 5
- Writing #4: benchmarks 1, 2, & 3
- Writing #6: benchmarks 1, 2, 3, & 4
- Speaking/Listening #2: 2, 3, & 5
- Speaking/Listening #3: 1, 2, 4, 5, 8
- Reading #1: benchmarks 2 & 4
- Reading #4: benchmark 2
- Literature #1: benchmark 2

End of Grade 8

- Science #3: benchmarks 2 & 4
- Science #5: benchmarks 1 & 4
- Social Studies #3: 3, 5, & 7
- Writing #1: benchmarks 1, 2, 3, & 4
- Writing #2: benchmarks 1, 2, 3, 4, 5
- Writing #4: benchmarks 1, 2, & 3
- Writing #6: benchmarks 1, 2, 3, & 4
- Speaking/Listening #2: 2, 3, & 5
- Speaking/Listening #3: 1, 2, 4, 5, 8
- Reading #1: benchmarks 2 & 4
- Reading #4: benchmark 2
- Literature #1: benchmarks 2, 5, & 6

Upon Graduation-End of Grade 12

- Science #5: benchmarks 3 & 4
- Social Studies #3: 2, 3, 4, 5, & 7
- Writing #1: benchmarks 1, 2, 3, & 4
- Writing #2: benchmarks 1, 2, 3, 4, 5
- Writing #4: benchmarks 1, 2, & 3
- Writing #6: benchmarks 1, 2, 3, & 4
- Speaking/Listening #2: 2, 3, & 5
- Speaking/Listening #3: 1, 2, 4, 5, 8
- Reading #1: benchmarks 2 & 4
- Reading #4: benchmark 3
- Reading #5: benchmarks 3 & 4
- Literature #5: benchmark 1

Student Inquiries:

- How do ranchers maintain healthy ecosystems?
- Why do ranchers care about the environment?
- What is a rangeland?
- How do rangelands affect water quality?

- Where does my food come from?
- What is grazing?
- Who grazes?
- What do grazers eat?
- How much can grazers eat?
- What does grazing do to the plants?
- Where does grazing occur?
- How does grazing affect the ecosystem?
- Do livestock and wildlife graze the same?
- How much grazing can occur each year?
- How long can/have rangelands be(en) grazed?
- How do grazing and ranching impact me?
- Why can cows, sheep, and big wildlife species eat so much grass?
- How does overgrazing wear out rangeland resources?
- How do ranchers know what the conditions of their rangelands are?
- How does ranching benefit wildlife?
- How do the parts of an ecosystem rely upon each other?
- How do livestock and wildlife live in the same ecosystems together?
- What types of recreational uses can occur in conjunction with grazing?

Instructional Objectives:

- Students will read or listen to the book Amazing Grazing by Cris Peterson.
- Students will gain knowledge and understanding of grazing, a foundation of Montana's largest industry, Agriculture.
- Students will recall information from the book and reflect on that information's meaning.
- Students will analyze factors that detract from and contribute to the health of an ecosystem.

Materials:

- Amazing Grazing by Cris Peterson
- writing paper
- pencils, pens
- envelopes and stamps
- chalkboard/whiteboard space or large block of paper approx. 4' x 6'
- enough copies of the included worksheet

Lesson Activities

1) Read and preview the book yourself before presenting it to the students. Brainstorm any questions, stories, and connections that you want to share with them.

2) Gather students into a group, whether at their desks or on the floor.

3) Begin with either a short personal story or a question for the students. For example, perhaps you could tell them about your visits to your grandfather's ranch in the Bitterroot Valley every summer, the fun you had there, and the many things you learned from him and from being on the ranch. If beginning with questions, one possibility would be asking the students if any of them live on a ranch or have ever visited one. Be sure students responding in the affirmative have a short opportunity to tell 'the best thing' about the experience or 'one thing they learned' there.

4) Hold up the book Amazing Grazing and introduce it to the students. Tell them it is a non-fiction book and explain what non-fiction means or ask recall questions if students have already been introduced to this topic. Ask the students to be listening for five key things (listed below). (For younger grades, you may want to pick just 1-3 of these for them to focus on. Feel free to adjust the vocabulary to fit your grade level of instruction.)

- Why were rangelands in such bad condition in past decades and centuries?
- What are some things the ranchers in the story do to maintain the health of their land?
- Who/what else uses the land that comprises the ranches in the story?
- What are some factors they learned about the growth processes of the grasses on the rangeland?
- What are some things the ranchers in the story do to care for their cattle and the wildlife that use their land?

5) Read the story to the class, pausing to ask reflective questions throughout. For example, the end of the first page of the book states, "...If any good soil remained, it was blown away by the wind or washed away by the rain. Wildlife

that depended on the same land for food became scarce or disappeared altogether.” Asking the students at this point why it became difficult for wildlife to survive on the land in the 1800’s would recall three or four key points that the book states about impacts on an ecosystem (e.g., huge herds of bison trampled the grasses to dust, ranchers who lacked the right knowledge allowed their cattle to overgraze, the wind and rain removed much of the topsoil). To facilitate student understanding, you may need to define and explain some of the terms in the book for the students (e.g., rangeland, cattle, grazing, overgrazing, renewable, pasture, natural resource, and wildlife). Pose questions like this throughout in order to further assist student understanding and in order to assess their comprehension of the presented material.

6) After reading the book, ask the five questions listed previously above. List students’ responses on the board or a large piece of paper. Prompt students to recall what they learned about rangeland, an ecosystem, grazing, and management practices that maintain the health of the land.

7) Proceed to the “Assessment” list and choose the assessment activities that best suit your population of students.

8) Adaptations for older grades (3rd and up):

- Borrow or purchase more copies of the book and have students read it individually or in small groups.
- Place the book at a center and provide students an opportunity to rotate through so that everyone has a chance to read the book.

Follow up questions for upper grades could be asked to the whole class after everyone has read the book or could be done in the form of a worksheet (see attached), or both. A short class discussion of the book, its information, and the students’ recall might also be helpful for the students to retain and process the content.

Assessment:

- Review students’ responses on their reflection worksheets.
- Review students’ responses provided during discussion.

- Have students, individually or as a class, write a letter to one of the ranchers highlighted in the book. Be sure they include a list of things they learned about rangelands, ranching, ecosystems, and management of natural resources. Addresses for the ranches are listed below. Be sure students are aware that these busy ranchers may not have time to respond to every letter, but they would still be thrilled to know what the students have learned about grazing and ecosystems.

Tom Milesnick
Milesnick Ranch
5805 Dry Creek Road
Belgrade, MT 59714
<http://milesnickrecreation.com/>

Bob Lee
Lee Ranch
HC 60, Box 350
Judith Gap, MT 59453
<http://www.leeranch.com/>

Ray Marxer
Matador Ranch
9500 Blacktail Rd.
Dillon, MT 59725
(no web site available)

Ascending Levels of Intellectual Demand:

Contact a local rancher near your community through your County Extension office and take your students on a field trip to their ranch. Instruct them to pay close attention to the animals, plants, and people.

How do these components (animals, plants, people) interact with one another? What factors at that particular ranch help them to live together in balance? (Or, does there appear to be an imbalance, and why?)

Students can then return and, as a class or individually, write a book similar to *Amazing Grazing* which tells the story of the ranch they visited. If possible, take some digital cameras with you on the field trip so that you and/or the students can include photographs as reference points in their book(s).

Students can draw their own illustrations, as well. Follow your classroom’s editing and publishing procedures and techniques. Print and distribute copies of the students’ book(s). Perhaps have them read it to an audience of students in a younger grade level.

