

Common Ground: *The Water, Earth, and Air We Share*, by Molly Bangs (The Blue Sky Press, An Imprint of Scholastic, Inc., 1997, ISBN 0-590-10056-4)

Grade Level: 3

Duration: Two 45-minute class periods

Economic Concepts: Renewable and Non-Renewable Natural Resources, Choices, Scarcity

Maryland State Curriculum

Economic Standard: Students will develop economic reasoning to understand the historical development and current status of economic principles, institutions, and processes needed to be effective citizens, consumers, and workers participating in local communities, the nation, and the world.

- 4.A.2.a Explain how producers make choices because of limited natural, human, and capital resources
- 4.A.2.b Give examples of how limited resources affect the decisions producers make

Geography Standard: Students will use geographic concepts and processes to examine the role of culture, technology, and the environment in the location and distribution of human activities and spatial connections throughout time.

- 3.D.1.b Describe why and how people make decisions about protecting the environment

Political Science Standard: Students will understand the historical development and current status of the fundamental concepts and processes of authority, power, and influence, with particular emphasis on the democratic skills and attitudes necessary to become responsible citizens.

- 1.A.1 Explain the role of individuals and groups in creating rules and laws to maintain order, protect citizens, and provide services
- 1.C.1 Explain the rights and responsibilities of being a member of the school and the community

Objectives: Students will be able to...

- identify natural resources as gifts of nature. (Optional: Classify natural resources as renewable or non-renewable.)
- identify scarcity problems and solutions.
- explain how misuse of natural resources could lead to environmental concerns.
- describe how people create rules to solve a scarcity problem and maintain order in the community.

Vocabulary

natural resource: gifts of nature that can be used to produce goods and services

Additional Vocabulary: commons, graze, (Optional: renewable/non-renewable resource, fossil fuels)

Teacher Materials

- A copy of *Common Ground: The Water, Earth, and Air We Share*
- Picture of natural resources cut from magazines: land or soil, mineral deposits, timber, animals, fish, oil, oceans, rivers, climate, fire.
- 1 large sheet of "Hundreds" paper to be used as a model of "The Commons"

Student Materials

- Different colored crayons or markers, 1 color for each group of 4 students
- 1 die
- Magazines to cut up
- Crayons, scissors, and glue
- Resource #1: *Scarcity Problems* (1 per student)
- Resource 2: *The Commons* (1 per student group)
- Resource #3: *Natural Resource Hanger Template*

Teacher Background

Knowledge of natural resources will be necessary.

Motivation

Hold up a glass of water and say, "Boy, am I thirsty! It is a good thing nature provides me with water to meet my want for a drink." Then drink some of the water. Ask students to name other ways that people use water to meet their wants.

Development

1. Hold up the glass of water, the baggie of soil or air, the fruit and one or more other natural resources. Ask the students what all these things have in common. Lead to the idea that these are all "gifts of nature" that can be used by humans to help them produce the goods and services they need to meet their economic wants.

Write the term and definition **Natural Resources: Gifts of Nature** on the board. Ask the students to name other "gifts of nature" that serves as natural resources for workers in a production process.

Develop a class chart with numerous examples such as those below:

<u>Natural Resources</u>	<u>Used By</u>	<u>To Produce</u>	<u>To Meet the Want For:</u>
Water	Hotel Owner	Shower water	Bathing
Oil	Oil Companies	Gasoline	Transportation
Soil	Farmers	Crops	Food
Trees	Builders	Houses	Shelter
Fire	Chef	Bread	Food
Iron Ore	Steelworkers	Steel	Metal Furniture

2. Distribute cut-out pictures of natural resources to groups of 4 students. Have the students work in groups to determine the ways their pictured resources are used by people. Have the groups add their information to the class chart.
3. Scarcity simulation: Tell the students you will be reading a book that shows why it is important to make good decisions about the ways to use natural resources. Divide the students into five or six groups. Display the "hundreds" chart paper on the board and label it "The Commons." (You may want to show the students the cover of the book to illustrate the meaning of the word, "commons".) Distribute one crayon or marker of a certain color to each group of students. Explain to the students that, in this simulation, the students are farmers who want to use the commons as grazing land for their sheep. One square of grass on the "hundreds" chart paper will feed one sheep. Hand the die to one student in group one and have the student roll the die to see how many sheep he or she will be placing on the commons. Have the student use the group's crayon or marker to place x's on that number of squares on the "hundreds" chart paper. Then move to a student in the second

group, and repeat the process of rolling the die and marking off the number of sheep with a different color of crayon or marker. Continue moving from one group to the next until all of the squares are filled. (Note: You will run out of squares before every student has a turn. Thus demonstrating a scarcity of space on the commons.) Discuss with the students what problems they noticed as they played the simulation. (*Not enough squares for all of their sheep; some people get to have more sheep on the commons than other people do; there is no grass left for the other sheep to eat.*) Remind the students that grass is a natural resource that farmers need to raise sheep. Discuss how this natural resource is limited.

4. Conduct a Read-Aloud of the story, *Common Ground*, with the students. Ask the following questions after reading the story:
 - a. What problems developed as the people added more and more sheep to the common field?
There were too many sheep for the limited amount of grass. There was not enough space and grass for all of the sheep.
 - b. What were the choices people had to make when the commons became too crowded for the sheep? *People chose to move away or to stay and follow rules for the commons.*
 - c. What was the rule that the village people developed to solve the scarcity problem? *They agreed to keep the commons lush and green, and to do a better job of sharing it by only putting one sheep per person on the commons.*
 - d. What might happen to the commons if more and more people move to the village and want to put their sheep on the commons? *The rule might need to be changed if there is a scarcity of space and grass. Have the students write a revised rule that might solve the scarcity problem then.*
 - e. Have the students make a list of ways that they, as citizens of the community, are responsible for taking care of natural resources. (*Examples: turn off the water while brushing teeth, walking instead of riding in a car, recycling aluminum cans*)
5. (Optional activity) Introduce the terms, **renewable resources** and **non-renewable resources**. Explain that renewable resources are resources that can be developed again and again by nature, sometimes with the help of humans. Examples include most plants and animals and sometimes water and soil. Non-renewable resources are resources that it took the earth millions of years to produce and once they are used, they are gone from the earth. Some examples of non-renewable resources are fossil fuels like oil and coal. Show the picture from the book of the fossil fuels in the layers under the city and how those fossil fuel layers are empty on the following page. Discuss the impact on the economy is all the fossil fuels are used up. (*No oil or gasoline for transportation, no plastics, no heating oil, etc.*)

Follow up with a discussion of these questions:

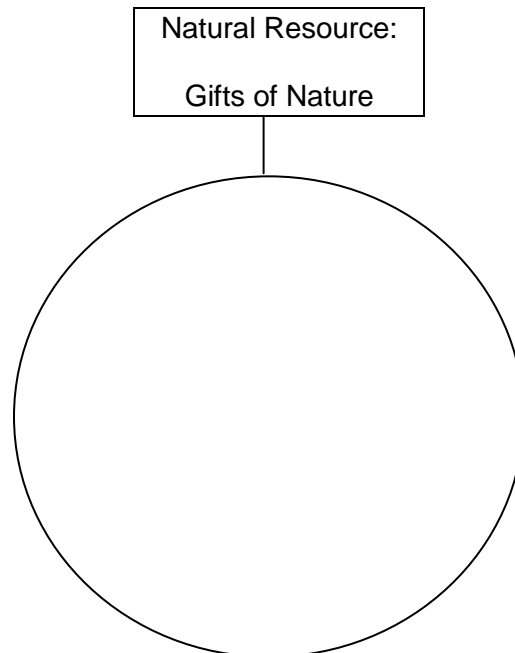
- a. What are some actions people can do to help renew the renewable resources?
- b. Why is it important for people to find alternatives to using non-renewable resources?

6. Explain to the students that whenever humans use natural resources they are making an impact on the environment. Help the students complete the chart to show the environmental impact when each of these resources is used (and perhaps overused): fish in the bay, trees in the community, fossil fuels, fresh water.

Natural Resources	Uses	Short Term Gains and Costs "in the short run"	Long Term Gains and Costs "in the long run"

Conclusion/Closure: The students will make a classroom decoration that will remind them of the kinds of natural resources that are available in the environment.

Directions: Distribute 1 "Natural Resource Hanger" worksheet to each student. Have the students cut out the four circles. Have each student select a natural resource to feature on his hanger like the ones on this list: ocean water, fresh water, trees, soil, sand, oil, coal, fish, etc. The name of the natural resource is written on the first circle, a hand-drawn picture or a magazine cut-out is pasted on the second circle, a sentence stating how the resource is used is written on the third circle, and a picture of the resource being used or a product made from the resource is drawn or pasted on the fourth circle. Fold each circle in half so that the writing or picture is inside the fold. Paste the back of the second half of circle one to the back of the first half of circle two, the second half of circle two to the back of the first half of circle three, etc., until a sphere shape is formed. Glue a looped piece of yarn into the center of the top of the sphere to make the hanger loop. Fold the title piece "Natural Resource" in half on the dotted line. Glue it on the looped yarn about one inch above the sphere so that the title reads in two directions. Hang the sphere around the classroom as a reference.



Thoughtful Application:

Distribute the "scarcity Problems" worksheets for students to complete individually.

Scoring Tool:

- 3 points** Student correctly identifies all of the scarcity problems and their solutions from the text, plus offers at least 3 original solutions to the five scarcity situations.
- 2 points** Student correctly identifies at least four of the five scarcity problems and tells how the scarcity problems were solved from the text.
- 1 point** Student correctly identifies at least 3 of the scarcity problems and tells how the scarcity problems were solved from the text.
- 0 points** All other responses.

Scarcity Problems

Directions: For each of the situations given below, identify what is scarce and tell how the scarcity problem is solved.

Situation 1: "There are not enough fish in the pond for people to fish whenever they want to," said the Ranger. "There will be fishing on the weekends only for the month of June."

There is a scarcity of _____. The scarcity problem is solved by

Another way to solve the scarcity problem would be _____

Situation 2: "I'm worried that our well might run dry in this drought. Don't use the hose to run the sprinkler until we get some more rain," said Dad.

There is a scarcity of _____. The scarcity problem is solved by

Another way to solve the scarcity problem would be _____

Situation 3: "With the forest fire burning out so many trees here last July. I'm worried that the forest will be ruined if there are any more fires. No campfires will be allowed until more of the trees grow back" said the Forest Service Ranger.

There is a scarcity of _____. The scarcity problem is solved by

Another way to solve the scarcity problem would be _____

Situation 4: "You can't build your fort in this corner of the backyard," said Derek's mother. "I need this space to grow the vegetables. Why don't you make your fort on the front porch?"

There is a scarcity of _____. The scarcity problem is solved by

Another way to solve the scarcity problem would be _____

Extra Credit: Make up your own scarcity situation on the lines below. Then tell how the scarcity problem can be solved.

Your Scarcity Situation: _____

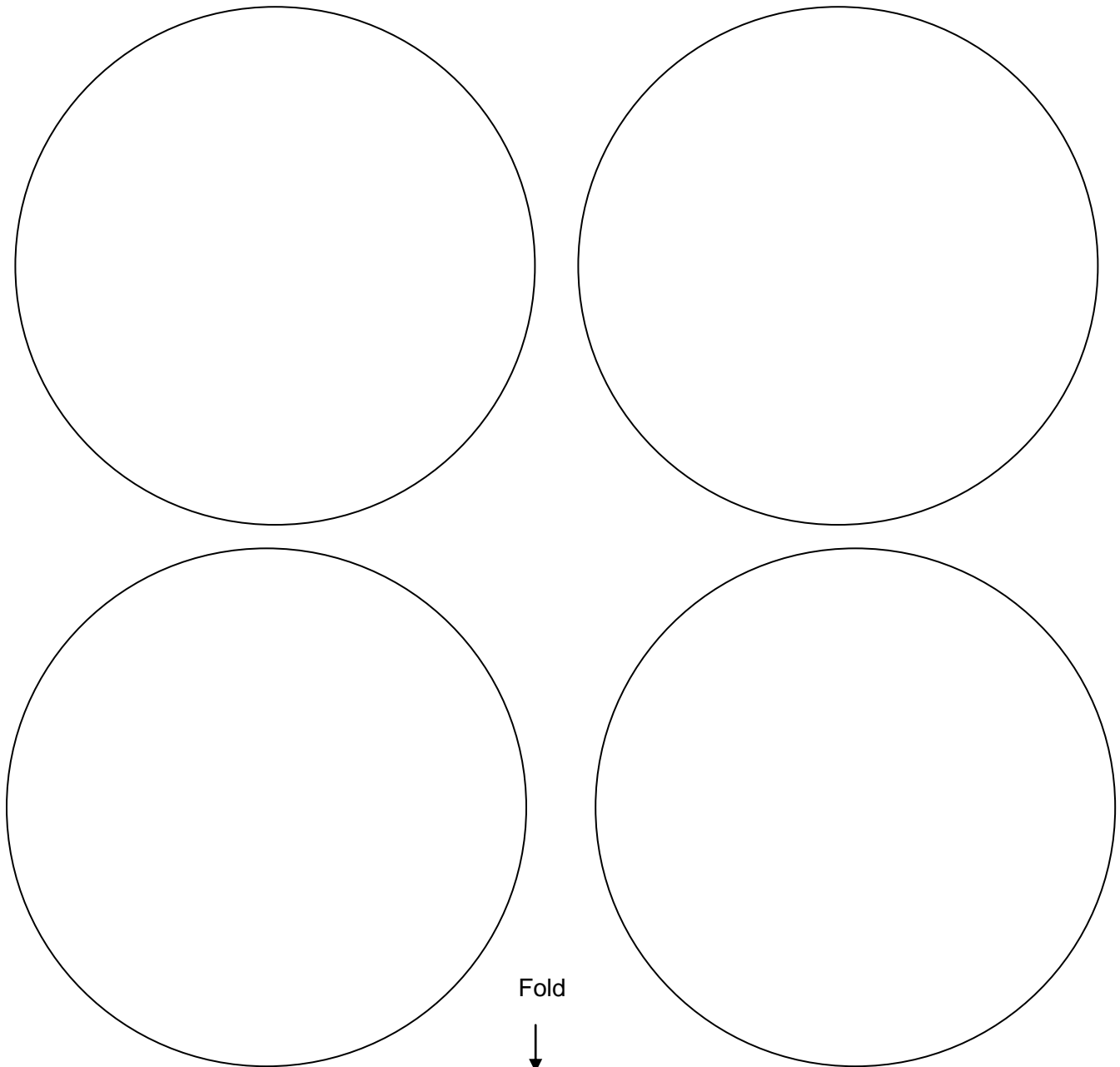
There is a scarcity of _____. The scarcity problem is solved by

Another way to solve the scarcity problem would be _____

THE COMMONS

Resource 2

Resource 3



Fold



<p>Natural Resource: A Gift of Nature</p>	<p>Natural Resource: A Gift of Nature</p>
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