

HOW CAN PEOPLE PROTECT NATURAL RESOURCES?

UNIT 8: Natural Resources Lesson 21 — Grades 2-3 INSTRUCTIONS



Overview

In this lesson, students will learn current and traditional methods of natural resources conservation and why it is important to protect resources.

Objectives

On successful completion of this lesson, students will be able to:

- Name three human impacts on natural resources;
- identify three methods to conserve and protect natural resources; and
- give three local examples of current methods and traditional methods of natural resource protection and respect.

Alaska Standards

Alaska Science Standards / Grade Level Expectations

- [3] SA1.1 The student demonstrates an understanding of the processes of science by asking questions, predicting, observing, describing, measuring, classifying, making generalizations, inferring, and communicating.
- [3] SA1.2 The student demonstrates an understanding of the processes of science by observing and describing the student's own world to answer simple questions.
- [3] SC3.1 The student demonstrates an understanding that all organisms are linked to each other and their physical environments through the transfer and transformation of matter and energy by identifying examples of living and non-living things in the local environment.
- [3] SE1.1 The student demonstrates an understanding of how to integrate scientific knowledge and technology to address problems by identifying local problems and discussing solutions.

Alaska English / Language Arts Standards

- W.2.7 Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report or visual or oral presentation; record data from science observations).
- W.2.8 Recall information from experiences or gather information from provided sources to answer a question.
- W.3.2.a-d Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
- W.3.7 Conduct short research projects that build knowledge about a topic.



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Alaska Cultural Standards

[A] Culturally knowledgeable students are well grounded in the cultural heritage and traditions of their community. Students who meet this cultural standard are able to:

[A.1] assume responsibilities for their role in relation to the well-being of the cultural community and their lifelong obligations as a community member.

[A.4] practice their traditional responsibilities to the surrounding environment.

[E] Culturally knowledgeable students demonstrate an awareness and appreciation of the relationships and processes of interaction of all elements in the world around them. Students who meet this cultural standard are able to:

[E.1] recognize and build upon the interrelationships that exist among the spiritual, natural, and human realms in the world around them, as reflected in their own cultural traditions and beliefs as well as those of others.

[E.2] understand the ecology and geography of the bioregion they inhabit.

Bering Strait School District Scope & Sequence

2nd grade sequence #9: Natural Resources

- A. Understand what a natural resource is.
- C. Understands how we can protect natural resources.
- D. Uses scientific processes and inquiry to directly support the concepts of the natural resources.

3rd grade sequence #10: Conserving Natural Resources

- A. Understands what a natural resource is.
- C. Understands how people use and impact the environment.
- D. Understands how resources can be used wisely.
- E. Use scientific processes to directly support concepts on conserving natural resources.

Materials

- Small three-legged stool with detachable legs
- *I Love Our Earth* by Bill Martin Jr.
- *Why Should I Save Water? (Why Should I? Books)* by Jen Green
- *10 Things I Can Do to Help My World* by Melanie Walsh
- *Air (Environment Collection for Kids)* by David Palatnik
- *Earth (Environment Collection for Kids)* by Israel Felzenszwalb
- *Why Should I Save Energy? (Why Should I? Books)* by Jen Green



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- *Life in the Boreal Forest* by Brenda Z. Guiberson
- Chart paper
- Markers

Additional Resources

The EARTH Book by Todd Parr

The Earth and I by Frank Asch

Why Should I Recycle? (Why Should I? Books) by Jen Green

Activity Preparations

1. Read through the entire lesson, including the teacher background information in the Whole Picture section.
2. Prepare a chart listing the requirements for the group posters: title of the book, the natural resource, impact of people, and two or three ways to conserve or protect the resource.
3. Make sure each leg on the three-legged stool can be safely detached and reattached. Label the seat of the stool: "Human use of natural resources". Label each leg respectively: impact, conservation, respect.
4. Invite a cultural knowledge bearer or elder to speak to the class about the traditional ways the local Native community used and respected the environment. Ask them to share the traditionally appropriate ways that the community showed respect for all life and conserved the resources around them. Have the knowledge bearer include the economic, social, and spiritual practices and responsibilities.

Whole Picture

Natural resources include things like plants, soil, sunshine, water, fossil fuels, wildlife, metals, and minerals. Every day, people depend on natural resources. They are important for the cash economy, for creating energy, for providing shelter, for food and medicine, and for spiritual well being. By protecting and conserving natural resources we help to ensure that they are available for use not only today, but in the future as well. Alaska Native wisdom teaches that everything is connected; human life is intricately connected to the natural resources around us. Preserving resources helps ensure the health and wellness of the entire system.

Why Protect Natural Resources?



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There are many reasons to protect natural resources. Some reasons are simple: when resources are finite (or nonrenewable), an overuse can mean they will not be available in the future; once nonrenewable resources have been depleted, they will be gone forever. In Alaska, nonrenewable resources include things like oil and coal, as well as certain metals like aluminum and copper. In addition to being nonrenewable, extracting some of these resources can take a toll on the local landscape and ecosystems. As such, conserving nonrenewable resources ensures their availability for future use and also helps to protect other resources in the area.

Many natural resources are renewable, however, but reasons for protecting them are more complicated, and involve consideration of the ecosystem as a whole. According to Alaska Native wisdom, all things are connected and people hold a responsibility to respect and protect them in order to help maintain the delicate balance. The spiritual well being of the whole system depends on the health and wellness of each component (Kawagley, 2006). When this balance is upset, resources become scarce and the system begins to change (Fienup-Riordan and Rearden, 2012; Kawagley, 2006; and Kawagley et al., 2010). As a result, exercising prudence when using resources helps to ensure the health and continuation of the entire system, and importantly, is a matter of traditional practice and a way of living in harmony with one's surroundings.

How Can Resources Be Protected and Conserved?

Embodied within Alaska Native values for daily living are a variety of ways that natural resources can be protected. These include: "showing respect," "sharing what you have (taking only what you need)," "living carefully," "taking care of others," and "seeing connections" (ANKN, 2006).

These values represent the belief that the environment is sentient — it is capable of feeling and perceiving. As such, it does not merely provide resources available for taking; rather, "it is responsive to careful [human] action and attention" (Fienup-Riordan, 1994, p.14). As a result, the future availability of resources depends on careful attention to one's own actions and the maintenance of good relations with the spirits of all things.

The Iñupiat and Yup'ik, like other Alaska Native peoples, believe in the recycling of plant and animal spirits. When a plant or animal is taken for harvest, it's spirit watches carefully to see that its body is respected and well taken care of. If it likes what it sees, it will tell others of its kind that the people treated it well and they should continue to give themselves. However, if the spirit does not like the way it is treated, it will tell others to avoid these people, and future harvests will be less successful (Barnhardt and Kawagley, 2005; Fienup-Riordan and Rearden, 2012). As such, one way to preserve natural resources is to treat them with honor and respect — this means being judicious in how they are



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taken, not taking more than is needed, sharing what has been taken, not wasting any part of the harvest, and acting peacefully (Fienup-Riordan, 1994).

These traditional values and ways of living can also be summed up in the concept of the “3Rs — Reduce, Reuse, Recycle.”

Reduce

By making choices in the products we buy and reducing the amount we consume, we can reduce our environmental impact. For example, by borrowing from friends and neighbors, renting, or sharing, instead of buying or harvesting something we will only use infrequently, we can reduce the physical amount we consume. By powering down our electronics when not in use, we can reduce the amount of energy we consume. By walking or riding a bike or skateboard, we can reduce the amount of fuel we need. By choosing not to have a bag, or bringing our own bag to the store, we can reduce the amount of plastic that ends up in our landfills.

Reuse

Many times, people choose to dispose of items that could be reused, or up-cycled (made into something else). Coffee tins, shoe boxes, and other plastic food containers can be repurposed into storage containers for beading supplies, tools, and machine parts. Torn clothes can be repaired or turned into other items, like pillowcases, bags, and baskets. Broken machines can be saved, and their parts salvaged for repairing other items.

Recycle

Where facilities exist, many things can be recycled: paper bags, soda cans, and plastic bottles. In remote areas, however, recycling facilities do not exist, and it can be expensive to export collected items for recycling. In these cases, it is important to make wise decisions in the purchases we make; choose to purchase items that are made from recycled materials. Rather than purchasing tissue paper that is made from first generation trees, for example, purchase tissue that is made from recycled papers.

Conserving and protecting our natural resources is important not only so that the resources will be available in the future, but also for reasons of cultural value and spiritual importance. Learn from elders and culture bearers in your community what resources are most valuable and what you can do to help preserve them.



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Vocabulary

natural resource – anything from the environment that can be used

conservation – saving resources by using them wisely

impact – change or effect on resources by humans

respect – to hold in high value

tradition – something that is handed down

Activity Procedure

Part 1

1. Read the book *I Love Our Earth* by Bill Martin Jr. After reading the book, ask: how did the book show that we are connected to the Earth?
2. Explain that the book *I Love Our Earth* shows ways we rely on the resources of the Earth and because of that dependence, we have a duty to take care of the Earth. Show the class the six books you have. Explain that each book is about a natural resource. Introduce and define conservation and impact. Explain that you are going to divide the class into six groups and give each group one book.
3. Instruct the students in the following procedure, referring to the chart:
 - Each group is going to read one of the books together.
 - After reading the book, the group is going to discuss how people impact the availability of the resource.
 - The group will also discuss how people can conserve and protect the resource.
 - The group will create a poster to present to the rest of the class. The poster will identify:
 - the title of the book,
 - the natural resource,
 - the impact of people, and
 - two or three ways to conserve or protect the natural resource.
 - Groups will have twenty minutes to read and discuss their books and create their posters.
 - Each group will have two minutes to present their posters to the class.
 - Each group needs to decide how the poster will be presented to the class.
4. Student presentation of posters.
5. After the activity and presentations, ask (student assessment):
 - What impact do people have on natural resources?
 - How can we conserve and protect our natural resources?



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- Why is it important to conserve natural resources?
 - What will happen if we are successful/not successful in conservation of our natural resources?
6. Have student groups hang their posters and display them in the room.

Part 2

1. Place a three-legged stool on a table in front of the class. Explain to the class that the surface of the stool represents human use of natural resources, one leg represents our impact on natural resources, the second leg represents our conservation of natural resources, and the last leg represents our respect for natural resources. Ask the students: what happens if one of the legs of the stools breaks or is missing? Explain that the stool illustrates how our wise use of natural resources would diminish if one of these three key pieces were missing.
 - Detach the leg labeled impact and let the stool tip over. Ask: What happens if we have a major human impact on natural resources that caused them to disappear or be severely limited in number?
 - After discussion, reattach the impact leg, and point to the conservation leg. Ask: What happens if we don't practice conservation of our natural resources, if we don't preserve and protect them? Detach that leg and let the stool fall over.
 - After discussion, reattach the conservation leg and point to the third leg. Tell the students the third leg stands for respect. Explain that a guest speaker will be teaching them about respect for the local environment and its natural resources and will be helping us learn what we need to do to respect the natural resources.
2. Introduce the cultural knowledge bearer or elder.
3. The cultural knowledge bearer or elder speaks to the class about the traditional ways the local Native community used and respected the environment, shares how the community showed respect for all life, preserved the resources, and what the economic, social, and spiritual practices and responsibilities of individuals and the community were.
4. After the speaker has finished, have the class thank the person. Ask the following questions (student assessment):
 - What were traditional ways of showing respect to the environment and natural resources?
 - How does the current impact of humans today compare or differ with the impact of humans in the past?



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- How were natural resources conserved and protected traditionally?
 - What responsibilities did the community have as a whole?
 - What responsibilities did the individual have as a whole?
 - What cultural practices protected the natural resources?
 - What social practices protected the natural resources?
 - What spiritual practices protected the natural resources?
 - What current methods today are the same as the past traditional ways?
 - What methods today are different than past traditional ways?
 - What could you do to show respect for natural resources or the environment?
 - How is respecting the environment and natural resources different than conserving natural resources?
5. Take the stool and show it to the class. Ask: What happens if we do not respect our natural resources? After students have answered, take off the leg labeled respect of natural resources and let the stool tip over. Ask: Why is it important to respect our natural resources and environment? Conclude by stating that all three legs of the stool are important in keeping it upright, just as the three areas of human impact, conservation, and respect are important in learning how to use our natural resources wisely.
6. Instruct students to write a thank-you letter to the cultural knowledge bearer or elder for sharing with the class. In their letter, have them identify two methods or ways of respecting natural resources and the environment that they will choose to do.

Extension Activities

- Create posters on current methods and traditional ways to conserve and respect natural resources.
- Compare and contrast how the local community presently and traditionally relied on natural resources. Include the responsibilities that the community had culturally, socially, and spiritually.



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Answers

1. *I Love Our Earth* by Bill Martin Jr. connects to the Earth: answers will vary; possible responses may be human use of natural resources, human needs of water, air, and shelter, appreciation for beauty.
2. Ask (student assessment):
 - Impact people have on natural resources: answers will vary, but may include pollution, trash, lack of a resource.
 - Conserve and protect our natural resources: reduce, recycle, reuse, turn off water and lights, use renewable fuels, clean the water, pick up litter, plant seeds answers will vary.
 - Importance of conserving natural resources: Natural resources need to be conserved so they will last a long time and be available for future use.
 - Success in conservation of our natural resources: if we are successful in our conservation efforts, then our natural resources will continue to be available in sufficient amounts to meet our needs.

Part 2

1. Three-legged stool
 - What happens if one of the legs of the stools breaks or is missing: the stool falls over
 - What happens if we have a major impact on natural resources that caused them to disappear or be severely limited in number: Our natural resources become limited or scarce and we no longer have natural resources to use.
 - What happens if we don't practice conservation of our natural resources, if we don't conserve and protect them: Our natural resources become limited or scarce and we no longer have natural resources to use.
2. Questions (student assessment): For all the questions, the answers will vary and be dependent on the guest speaker's comments.
(3, 4 and 5 relate to the knowledge bearer)
6. Three-legged stool: answers will vary and be dependent on the guest speaker's comments.
7. Letter: answers will vary and be dependent on the guest speaker's comments.



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