

Natural Resource Awareness

by Shawnda Zindler

Grade level 7

Time required

Five to ten 50 minute class periods

Materials/Technology

Old magazines
Photos of natural resources
Glue
Construction paper
Grocery ads from newspaper
Butcher paper
Copies of state map
Scissors
Latex gloves
One day's collection of garbage
Graph paper
"Sparkling Water" activity (see references)

Stories (see references):
"Earth on Turtle's Back"
"Waynabozho and the Wild"

Summary

Through the use of stories, discussion, hands-on activities, research and visits by guest speakers, students become aware of what the various types of natural resources are, how our lifestyles affect them, and how natural resources are used and managed, particularly on the Flathead Reservation.

Objectives

The student will:

- 1) understand the difference between renewable and nonrenewable resources and give examples of each.
- 2) learn how ecosystems are sometimes harmed by unwise use of natural resources.
- 3) become aware of some ways in which to conserve and manage natural resources.
- 4) understand how changes in lifestyle over time have contributed to modern day problems related to natural resources.

Montana Science standards addressed

- 1) Students demonstrate knowledge of characteristics, structures and functions of living things, the process and diversity of life, and how living organisms interact with each other and their environment.
- 2) Students understand how scientific knowledge and technological developments impact society.

Assessment

- 1) Evaluate the students' entries in their journals.
- 2) Evaluate the project products that students create (e.g., the posters or brochures that describe different management practices).
- 3) Use oral questioning to assess each student's grasp of the concepts and their ability to apply them.

Procedure

This unit covers five topics that all focus on different aspects of natural resources as described below.

Lesson #1 - What are Natural Resources?

Materials

Old magazines

Scissors

Glue

Construction paper/ posterboard

Procedure

- 1) Students will create collages of what they feel are natural resources or items made from natural resources.
- 2) Discuss collages and reasons for the items on the collages. Guide students to the understanding that natural resources are not only raw materials that are mined or farmed, but also air, water, and soil.
- 3) In the student's journal, have each student respond to the question "How do I utilize natural resources at home and at school?"

Lesson #2 - Renewable and Non-renewable Resources

Materials

Onondaga story "Earth on Turtle's Back"

Photos of renewable and nonrenewable resources

State maps (one per group)

Research tools (e.g. Internet access, books, magazines, etc.)

Labels

Procedure

- 1) Share the Onondaga story "Earth on Turtle's Back". After reading the story, discuss in small groups the students' interpretations of the messages in the story including the ideas of sacrifice, human needs, and new life.
- 2) In small groups, have students categorize the photos of renewable and nonrenewable resources into the proper category and come up with a reason why it belongs in one or the other category. Have students share their examples with the class. Guide students to the understanding that renewable resources are those that can be replaced or regenerated within one human generation, or about 30 years. Examples of renewable resources include trees, water and native animal populations. Non-renewable resources are ones that cannot be renewed or replaced within one human generation. Examples include climax communities, mineral resources, and soil.
- 3) Have students research renewable and non-renewable resources in their state. Distribute state maps to each group and ask them to place tags on the map of each resource (specific name) and places where they are located. Attach a list of how the resources are used (e.g., wood for paper, metals for jewelry & building materials, etc.). Share the maps with the rest of the class when they are finished.

Lesson #3 - Changes in Lifestyles and the Effects on the Environment

Materials/Resources

Construction paper/poster board for timeline

Markers

Research tools (e.g., Internet access, books, etc.)

Native person as guest speaker

Procedure

- 1) Have students research how human lifestyles have changed over the years. Construct a time-line poster showing the changes from hunter-gatherer to agricultural to industrialized lifestyles. Be sure to include how the environment was impacted during each stage.

Some background information to help get the students started:

- A) Hunter-gatherer life: People used relatively few resources and moved on from an area before the resources were used up. Examples include some Native American tribes of North America.
 - B) Agricultural life: People began settling in one area for extended periods of time and used more and more resources including open grasslands, soil, and water.
 - C) Industrialized life: People built permanent cities and strained or depleted resources.
- 2) In small groups, have students analyze the timelines they created and list suggestions on how the course of events could have been changed or managed better and still have satisfied both the environmental and the human needs. Share these ideas with the class.
 - 3) Invite a guest speaker knowledgeable about cultural and traditional uses of the land to talk with your students. A good place to ask for such people would be the local tribes' culture committees, tribal headquarters, or natural resource office. Good resource people on the Flathead Reservation are Gene and Alan Beaverhead.

Lesson #4 - Just What do We Use? /Food Wrappers Scavenger Hunt

This lesson consists of two awareness activities as described below.

Activity 1 – Just What do We Use?

Materials

Latex gloves (at least one pair per group)

One day's garbage from around the school

Plastic covering for carpeted floors or an area outdoors (weather permitting)

Procedure

- 1) Group students into pairs. Each group needs a recorder and a sorter.
- 2) Students should prepare a chart for their group with the following columns: Plastic, glass, metal, paper, textile, food waste, and yard waste.
- 3) Give each group a bag of garbage and a pair of gloves. Instruct the students to sort through the bag and categorize what they find. Specific descriptions such as bubble gum, paper

wrapper, aluminum can and so on are necessary to give a full view of the items.

- 4) After the sorting is complete, compile all of the groups' information into one large chart and graph the data collected.
- 5) As a class, examine the graph and discuss ways we could cut down or better dispose of our daily waste materials. Discuss recycling opportunities available in your community and encourage students to organize an effort to better use these facilities or to create new ones.

Activity #2 – Food Wrappers Scavenger Hunt

Materials

Grocery advertisements from newspapers

Procedure

- 1) Collect a large variety of grocery advertisements from the newspaper.
- 2) Organize students into small teams.
- 3) Each team should prepare a chart large enough to list all items found with the following headings: Foods with no wrapping, foods with one wrapping, foods with two wrappings, and foods with three or more wrappings.
- 4) Students will examine the grocery advertisements and record what they find in the proper column including the name of the item and the type of packaging used. For example, cereal (plastic bag inside cardboard box), bread (plastic bag with plastic twist tie) and so on.
- 5) Pass out an equal number of advertisements to each group and begin the "hunt".
- 6) When finished, discuss as a class what was found. Decide on "Earth smart" alternatives to some of the more detrimental/ over-packaging practices.

Lesson #5 – Conserving and Managing What We Have

Procedure

- 1) Begin by sharing the Anishinabe story "Waynabozho and the Wild Rice". Discuss with students the messages in the story, including specifically the part where Waynabozho digs up not just one root but all of the roots and eats them. Then contrast that with the message that is relayed when he eats the wild rice and how he cares for that differently from the roots.
- 2) Have students research different natural resource management and/or conservation practices used today. These could include management of water, forests, endangered species, farmland, grazing areas and other. Each group should prepare informational brochures or posters showing what they found.
- 3) To give students the opportunity to practice some management techniques first hand, do the activity "Sparkling Water" from the Project WET book (1995). This activity lets students develop and use strategies for removing contaminants from wastewater.
- 4) Invite a guest speaker from the tribal Natural Resources Department to speak to the students about current issues the department deals with and ways in which students might be able to help or be a part of bettering the environment.

Further information

For further information about these activities, contact Shawnda Zindler via electronic mail at rmsszind@ronan.net.

References

Caduto, M. J. & Bruchac, J. (1989). Earth on Turtle's back. In Keepers of the Earth. Golden, CO: Fulcrum.

Caduto, M. J. & Bruchac, J. (1989). Waynabozho and the wild rice. In Keepers of Life. Golden, CO: Fulcrum.

The Watercourse & The Council for Environmental Education. (1995). Sparkling water. In Project WET.