WHAT ARE NATURAL RESOURCES?

Overview

In this lesson students identify renewable and nonrenewable natural resources.

Objectives

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

- distinguish between renewable and nonrenewable natural resources;
- identify the resources used in a pencil; and
- list examples of renewable and nonrenewable resources from around their community.

Alaska Standards

Alaska Science Standards / Grade Level Expectations

[6] 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.

Alaska Cultural Standards

[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:

[E2] understand the ecology and geography of the bioregion they inhabit.

Bering Strait School District Scope & Sequence

M.S. sequence 7.10: Natural Resources

A. Compare and contrast renewable and nonrenewable resources

Materials

- Wood Pencils (1 / two students)
- Plastic Pencils (1 / two students)
- STUDENT WORKSHEET: Renewable or Nonrenewable Resources?

Multimedia

REACH Multimedia K-3: "Where Do Things Come From?"

REACH Multimedia 4-6: "Shelter Game"
Available at: www.k12reach.org

WHAT ARE NATURAL RESOURCES?

Additional Resources

Glencoe Life Science Ch 23
Glencoe Earth Science Ch 18

Activity Preparations

1. Make copies of the Student Worksheet.

Whole Picture

A natural resource is a raw material that comes from the environment and is used to make the products people need for things like food, shelter, clothing, and entertainment. Natural resources include things like plants, soil, sunshine, water, fossil fuels, air, wildlife, metals, and minerals. For example, plants are used for food and medicine, animals are used for food, clothing, and art, and fossil fuels are used for energy, heating, and cooling.

Alaska has an abundance of natural resources: forests in the south, fossil fuels and minerals in the north and south central, and wildlife and fish in both the interior and in the seas. In most Alaska Native villages around the state, people depend primarily on locally available natural resources to sustain themselves. Aside from supplemental foods purchased at the store, people depend on subsistence —harvesting foods directly from the earth. Subsistence foods are natural resources; they include things like berries, greens, and other plants (collected for both food and medicinal purposes), animals like caribou, hare, and wolves (used for both food and fur), and marine mammals like seals, whales, and walrus (used for food, art, clothing, and traditional objects like skin boats and drums).

Natural resources are also used to make the processed materials people depend on for clothing, shelter, and energy. For example, consider the materials used to build a house: lumber, insulation, wiring, etc. Trees are milled to make the lumber; insulation is made from processed fossil fuels that have been turned into types of plastic; electrical wires are made from minerals mined from the earth; and fossil fuels are used for energy to heat and light the home.

In the past, Alaska Natives used only the natural resources locally available, and used limited technology to extract them, for food, shelter, and energy. Foods were harvested from the land in summer and stored for winter; people moved to the food source, building seasonal homes both from and as a part of the land around them; and they used animal power for energy (e.g., dog teams for transportation and seal oil for light and heat). Today, modern conveniences make life in remote Alaska more comfortable, and people use imported materials to build their homes, clothe their bodies, supplement their diet, and power their homes and vehicles. For example, non-local food items are now found in village stores. Also, the materials people use to build their homes — lumber, insulation, electrical wires, etc. — are all processed materials, imported from far away.

People could not survive without natural resources. Many Alaska Natives believe that all resources must be treated with respect; by showing respect, the resources will continue to be available for generations to come (Fienup-Riordan and Rearden, 2012; Kawagley et al., 2010).

WHAT ARE NATURAL RESOURCES?

Take a walk around your village and identify the various natural resources people use regularly and directly (berries, other plants, wildlife, water, etc.). Notice, too, the resources people depend on that have been imported (materials for housing, clothing, transportation, communication, etc.). Consider ways to show gratitude and respect for the various resources that you use.

Vocabulary

natural resource	material that occurs in nature that is essential or useful to people
nonrenewable resource	a resource that, once used, cannot be replaced in a reasonable amount of time
renewable resource	a resource that can be replaced in a reasonable amount of time

Activity Procedure

1. Introduce the activity with a review, or explanation if necessary, of natural resources and the difference between renewable and nonrenewable resources. Ask students for examples of each type of resource.
2. Hand out pencils: half of the class should receive wood pencils and the other half should receive plastic pencils. Also hand out the Student Worksheet. Explain the three parts of the worksheet and allow time for students to complete it.
3. Follow up the activity by asking students about what they know of any nonrenewable resources in the local community. Was mining done around the area? Ask students about the importance of recycling; do they think it is feasible in their community?

References

California Cedar Products Company. "Lesson Plan: What are Renewable Resources?" Accessed 2015 from: http://pencils.com/lesson-plan-renewable-resources/

Fienup-Riordan, Ann, and Alice Rearden. (2012) "*Ellavut: Our Yup'ik World and Weather. Continuity and change on the Bering Sea Coast*." Seattle and London: University of Washington Press.

Kawagley, Angayuqaq Oscar, Norris-Tull, Delena, & Norris-Tull, Roger A. (2010). "The Indigenous Worldview of Yupiaq Culture." In R. Barnhardt & A. Kawagley (Eds.), *Alaska Native Education: Views from Within* (219–235). Fairbanks: Alaska Native Knowledge Network

Washingtonville Central School District. (2015). "What is a Pencil Made of?" lesson handout. Accessed from: http://www.ws.k12.ny.us/Downloads/Pencil_resources.pdf

Wikipedia contributors, "*Graphite*," Wikipedia, the Free Encyclopedia. Accessed 2015 from: http://en.wikipedia.org/wiki/Graphite.

Answer Key: Renewable or Nonrenewable Resources?

Natural resources are substances, or materials, that are found in nature and are useful to humans. A substance that is limited and cannot be replaced, at least in our life span, is called nonrenewable. The gasoline that you use in a snow machine is an example of a nonrenewable resource. Gas is refined from oil, which there is only a limited supply of on the planet. Once is used up, it is gone for good. Metals, such as aluminum, are also nonrenewable. In order to conserve nonrenewable resources people have started recycling so the resource can be re-used. Substances that can be replaced are said to be renewable. A wooden chair comes from wood that was harvested from a forest. If a seedling is planted to replace the tree that was cut to make the chair, we can return to that same forest 20 to 40 years later and have wood to build chairs for our future children. Many items that we use in our daily life are made of both renewable and nonrenewable resources.

Part 1 Renewable or Nonrenewable?

1. Look at the pictures below. Underneath each picture, write whether it is renewable, nonrenewable, or both.

renewable

both

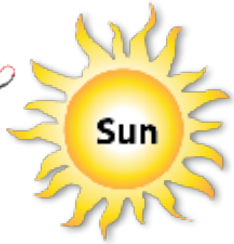
nonrenewable

nonrenewable

nonrenewable

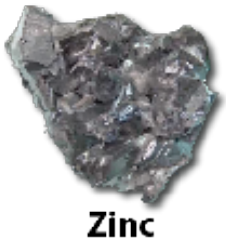
renewable

nonrenewable



renewable

renewable



nonrenewable

Part 2

a. Answers will vary: either cedar or plastic

b. R or NR	Part	Material
NR	Pencil lead	Traditionally these were composed of rubber, which come from a rubber plant.
NR	Ferrule	Attaches the eraser to the pencil and is made of zinc and copper.
NR	Black color	A lacquer (type of shiny paint) that comes from castor oil, which is made from the seeds of the castor plants.
R	Eraser	This is a form a carbon called graphite. The graphite is mixed with wax and clay.
R	Yellow paint	This is made from carbon black, which is by the incomplete combustion of heavy petroleum

Part 3

1 – 3. Answers will vary

Student Worksheet: Renewable or Nonrenewable Resources?

Name _____

Natural resources are substances, or materials, that are found in nature and are useful to humans. A substance that is limited and cannot be replaced, at least in our life span, is called nonrenewable. The gasoline that you use in a snow machine is an example of a nonrenewable resource. Gas is refined from oil, which there is only a limited supply of on the planet. Once is used up, it is gone for good. Metals, such as aluminum are also nonrenewable. In order to conserve nonrenewable resources people have started recycling so the resource can be re-used. Substances that can be replaced are said to be renewable. A wooden chair comes from wood that was harvested from a forest. If a seedling is planted to replace the tree that was cut to make the chair, we can return to that same forest 20 to 40 years later and have wood to build chairs for our future children. Many items that we use in our daily life are made of both renewable and nonrenewable resources.

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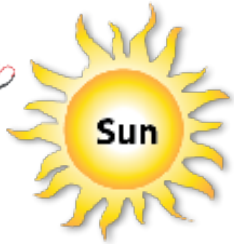
1. Look at the pictures below. Underneath each photo, write whether it is renewable, nonrenewable or both.

_____ _____ _____ _____ _____



_____ _____ _____ _____ _____

Part 2 The Pencil

2. Look at the pencil your teacher handed out. Some pencils are made of cedar, while others are made of plastic. Cedar pencils have a distinctive grain, are strong and don't bend. When they break they leave a rough edge. Some pencils are made of plastic. They don't have a grain, are flexible and when they break they leave a fairly straight edge.

   a. What type of pencil do you have? One made of cedar or one made of plastic?

   b. In the middle column are parts of the pencil. Draw a line to connect the part with the material it is made of. In the first column write R if it is from a renewable resource. Write NR if it is from a nonrenewable resource.

R or NR	Part	Material
_____	Pencil lead	Traditionally these were composed of rubber, which come from a rubber plant.
_____	Ferrule	Attaches the eraser to the pencil and is made of zinc and copper.
_____	Black color	A lacquer (type of shiny paint) that comes from castor oil, which is made from the seeds of the castor plants.
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_____	Yellow paint	This is made from carbon black, which is by the incomplete combustion of heavy petroleum

WHAT ARE NATURAL RESOURCES?

Part 3

1. List three things that you use that come from a renewable resource.

2. List three things that you use that come from a nonrenewable resource.

3. List two examples of a renewable resource around your community.