
Environmental Scientist

Overview:

This lesson and activity are designed to give students a hands-on experience identifying natural resources and implementing solutions to conserve our natural resources.

Grade: 2

TEKS

Scientific processes

2.2 (A, D, E)

2.3 (A, B, C)

2.4 (A)

Science Concept

2.7 (A, D)

2.8 (A, B)

2.9 (A, B)

2.10 (B)

Literature

When the Whippoorwill Calls

Vocabulary

Natural Resource

Renewable Resource

Nonrenewable Resource

Materials

Hula-Hoops

Discovery Book

Compass

Thermometer

Field Guides

Ziploc Baggies

My Natural Resources

Classroom Activity

1. Place on a table the following natural resources: a picture of the sun, empty container labeled "Air", container filled with water, baggie with soil, several potted plants, and several pictures of animals. Another option is to copy and make a transparency of the "Natural Resource" page at the end of this lesson. Ask your students to write and draw a picture of all the natural resources.
2. Ask your students which of the items are natural resources? Allow your students to brainstorm a few minutes about this question. Write their responses on the overhead projector or chalkboard. The idea here is to evaluate their background knowledge about natural resources and find out what environmental issues your students think are important.
3. If your students are not familiar with the concept of Natural Resources then take a few minutes to explain the concept. Soil, Air and Water are three good examples of a natural resource. Can your students find other natural resources in your school's backyard? What about nonrenewable resources?
4. Read *When the Whippoorwill Calls* by Candice Ransom and discuss with your students the natural resources in the book.

Why are the people so upset about the government building a park?

5. Have your students design a city park. Can your students design a park that protects our natural resources and at the same time keep your citizens happy?
6. Take a closer look at your natural resources by conducting a few activities. Air quality is a major concern today. Follow the instructions at <http://hhmi.org/coolscience/airjunk/nosep2.htm> for a simple air quality test. Place the collectors around your school (inside and outside) in several locations. Leave the collectors for several days and evaluate the results toward the end of the week. Which location contained the most particles on the collector? Which location had the least? Why? Is there anything your students can do to improve the air quality?
7. Your school consumes a lot of water everyday. Ask your administrator for your school's water records. On the overhead, determine the number of gallons of water your school uses each month, week and day. Compare the school water data to the number of gallons of water used by one of your student's family. Graph the results on the overhead. Ask your students to come up with a plan for your school to conserve the number of gallons of water it consumes each month. Put the plan into action and monitor the monthly water bills to evaluate the success of your students' water saving plan.
8. Help the conserve the soil around your school. Take your students on a walk around your school and identify areas with soil erosion problems. This is a good time to discuss the water cycle and how water carries away the topsoil. A check dam is one of the easiest ways to prevent erosion. Materials for a check dam range from hay bales to stones. Discuss the problem with your students and let them come up with a solution for your erosion problems.
9. Plants are a great way to brighten the inside or outside environment. What kind of plants do you have around your school? Identify and count the different trees on your school's campus. Ask your local plant specialist for help in deciding what specific tree to plant. Make it a class project to collect the money, purchase the tree and plant it on your school grounds. A tree is a good example of a renewable resource. Plus, remind your students a tree gives us oxygen!
10. There are many animals around your school during the day and night. Setting-up a bird feeder is one of the easiest and most rewarding animal activities. You can purchase a bird feeder from a local grocery or make your own. A favorite in the East Texas area is to make a "Pine Cone" bird feeder. Simply tie a string on the top of the pinecone and fill the pinecone with peanut butter. Roll the pinecone in birdseed, sunflower seeds and cracked corn. Place several close to a classroom window and begin to learn the names of your local birds.
11. Close the lesson by reading *The Important Book* by Margaret Wise Brown. Ask your students to transform the story into their own by creating an "Important Book" about natural resources.

In the Field

My Natural Resources

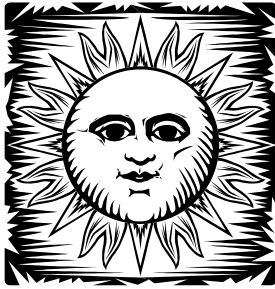
1. Prior to leaving your school make sure you have the following items.
 - Discovery Books
 - Ziploc Baggies (1 gallon size)
 - Pencils (inexpensive mechanical pencils are excellent)
 - Compass
 - Thermometer
 - Water
 - First Aid Kit
 - Sack Lunch or light snack
 - Camera
 - Backpack
 - Hula-Hoop
2. Before getting on the trail, remind students their observations and data collected will be used back in the classroom to create charts and graphs of their observations.
3. Set your behavior expectations before leaving the parking lot. Explain how students are to behave along the trail and in small groups. State specifically what behaviors you want to see along the trail. Remind students the higher their voices are the less likely they will see wildlife along the trail.
4. Distribute Discovery Books to students and record weather data observations. Teachers a gallon size ziploc baggie make an excellent container for pencils and Discovery Books during lunch or at the end of the day.
5. Walk through the gate and follow the trail. Remember to go slow and listen to your student's observations along the trail.
6. If you have enough adult supervision, divide your class into two groups. Have each group go in opposite directions along the trail. This will help reduce the noise level and also give your students an opportunity to share their observations when the class comes together at the halfway point. This is a good opportunity reinforce the idea that scientists share data too.

Post Eastman Activities

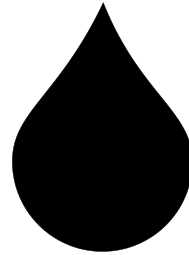
My Natural Resources

- Ask your students to discuss their experiences while at the Eastman Nature and Wildlife Habitat Center. What is the most important thing your students learned while at the Eastman Nature and Wildlife Habitat Center?
- Create a "Big Book" about your day at the Eastman Nature and Wildlife Habitat Center.
- Have your students create charts and graphs of the data they collected while at the Eastman Nature and Wildlife Habitat Center. Compare the Eastman data with the data collected at your school. Have your students draw conclusions about their observations.
- Have your students write/draw a narrative about their experiences at the Eastman Nature and Wildlife Habitat Center.
- Invite a Conservation Biologist to visit your classroom and discuss the importance of conserving our natural resources. What can students do to help the environment?
- Students create an "Environmental Report" based on their Discovery Book observations.
- Save aluminum cans and use the money to purchase trees for your school.
- Create bar graphs at home or in the Computer Lab. Use the data collected in the field to compare and contrast your school's environmental observations with that of the Eastman Nature and Wildlife Habitat Center's.
- Student produced books about natural resources.
- Maintain an Environmental Journal for 1 school year.

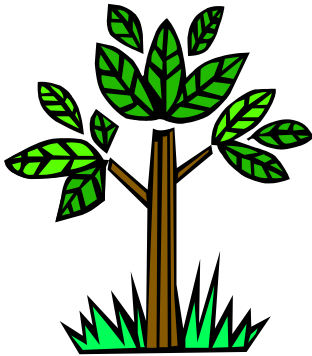
Natural Resources



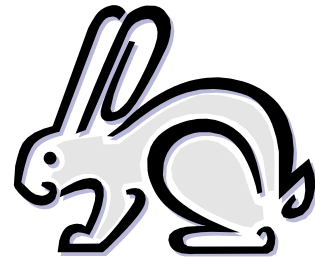
Sun



Water



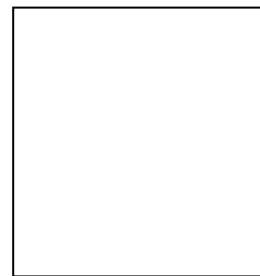
Plants



Animals



Soil



Air

Resources

Publications

When the Whippoorwill Calls by Candice F. Ransom

Seven Blind Mice by Ed Young

The Important Book by Mararet Wise Brown

Field Guide for the Eastman Nature Trail by Eric L. Taylor, Ph.D.

The Man Who Made Parks :The Story of Park Builder Frederick Law Olmsted by Frieda Wishinsky

Fishing in the Air by Sharon Creech

The Lorax by Dr. Seuss

Web Pages

Backyard Conservation

http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/newsroom/features/?&cid=nrcs143_023574

Texas Natural Resources Information System

<http://www.tnris.state.tx.us/>

EPA Office of Environmental Education

<http://www.epa.gov/enviroed/>

EPA Air Quality

<http://www.epa.gov/iaq/schools/>

Graphing Ozone

http://www.exploratorium.edu/learning_studio/ozone/graphing.html

Drag and Drop Puzzles

<http://kids.earth.nasa.gov/games/toms/>

EPA Student Center

<http://www.epa.gov/students/>