

It Does What?

Imagine a towering forest that stretches as far as the eye can see. Imagine a humble woodlot in the corner of a farmer's field. Imagine an urban forest planted along streets and overflowing into backyards. Imagine a forest that you and your students have come to love and enjoy. We need these forests. We need them for recreation and wood products. We need them for beauty and clean air. Animals need them. The earth needs them.

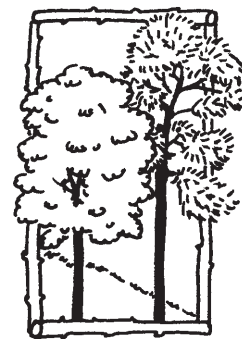
Why? . . . because, in addition to the numerous social and economic benefits, forests provide us with priceless ecological benefits! Some are obvious. Some are a little harder to figure out. Maybe some everyday items will help you and your students understand the many things that forests do for the earth.

Getting Ready

1. Gather as many objects listed under **Materials** as possible. If you can't find an item, glue a picture of it on a card or simply write the word on a card. You should have at least one item for every two students.
2. Place all the items under a blanket or in a box.

Doing the Activity

1. Talk briefly with your students about forests near your school or around your community. Ask students why these forests are important. For example, brainstorm what happens in the forest during a severe thunderstorm. What effect do the trees have on the torrential rain and strong winds? Briefly discuss erosion and how a forest helps to slow down and absorb the rainwater. Consider a tree near your school or home. What effect does the tree have on the surrounding temperature, air quality, and noise level? Does a forest provide these same benefits?
2. Tell the students that today they are going to think about the ecological benefits of forests with the help of some everyday items. Each team of two students will choose an item from inside the box or under the blanket. Teams will have 5 - 10 minutes to think about what their object does and how that object represents an ecological benefit of the forest. Then they will share what they have learned with the class. You might



Method

Students relate the function of everyday objects to the ecological benefits of a forest ecosystem.

Key Concepts

Forests are a vital part of ecological processes. They help to recharge oxygen, recycle nutrients, prevent erosion, purify water, provide wildlife habitat, and modify the climate.

Objectives

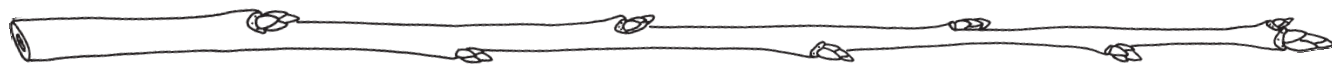
- describe the ecological benefits of a forest ecosystem
- relate the functions of everyday objects to the functions of a forest ecosystem

Subjects & WI Academic Standards

Science:
C.4, E.4, F.4, H.4
E.8, F.8, H.8

English/Language Arts:
B.4, C.4
B.8, C.8

Environmental Education:
A.4, B.4
A.8, B.8



Materials

- box or blanket for hiding items
- dollhouse or tent
- ear plugs
- snack food (candy bar)
- tent stake
- renewable battery
- coffee filter
- sponge
- air conditioner
- windbreaker
- air filter from car or furnace
- umbrella
- padlock
- rear-view mirror
- air freshener

Preparation

Time

30 minutes

Activity Time

1 or 2 50-minute class periods

Setting

indoors or outdoors

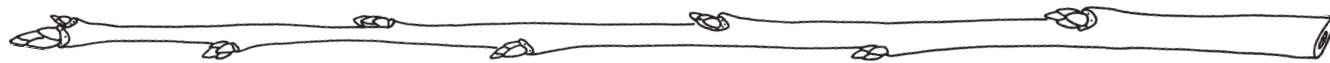
want to model the thought process and reporting. For example, an air conditioner cools a room by removing heat from the air. This could represent how forests cool the air through transpiration. The answer “because forests are really cool” shouldn’t count!

3. Allow each team to take an item. Give teams time to brainstorm for a few minutes. Listen to their thought processes and offer suggestions as needed.
4. Ask the teams to show their items to the class, explain the functions, and tell how they might represent functions of a forest ecosystem.
5. Discuss this statement: “If forests are so important, can we afford to cut them down?” What are the implications of not cutting any trees? The earth and all its inhabitants depend on forests. We do need to conserve forest ecosystems, but we also need to harvest trees for the wood and wood products that they provide. Can we do both?
6. Introduce the concept of sustainable forestry. Advocates for sustainable forestry say that we must be good stewards of our forest resources so that we can grow and harvest trees **and** conserve the soil, air, water, flora, and wildlife of the forest ecosystem.

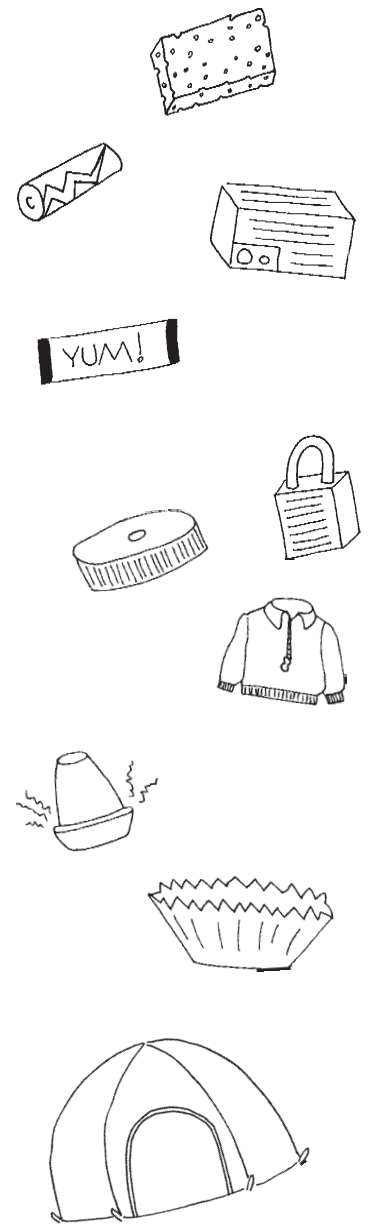
Stuck?

Here are some forest benefits to help you if you run out of ideas before you run out of items!

- ✿ Forest soils soak up water and recharge the water table. They help control flooding by regulating water flow within a watershed. (sponge)
- ✿ Leaves of forest plants help trap and hold small airborne particles such as dust, ash, pollen, and smoke that can damage our lungs. (air filter from car or furnace)
- ✿ Tree leaves provide shade and cool the forest. (umbrella)
- ✿ Forests “recharge” themselves through the processes of death, decay, and rebirth. (renewable battery)
- ✿ Forest plants absorb thousands of gallons of water through their roots and release them through their leaves. This transpiration has an incredible cooling effect. (air conditioner)
- ✿ Forests provide shelter and food for birds, mammals, reptiles, amphibians, and insects. (dollhouse or tent)



- ✦ The roots of forest plants anchor the soil in place, reducing or preventing erosion. (tent stake)
- ✦ Forest plants absorb and hold nutrients from the soil until they die. Then the nutrients are unlocked for use by other plants. (padlock)
- ✦ Forests muffle noises from traffic. (ear plugs)
- ✦ Forest plants remove carbon dioxide from the air and release oxygen during photosynthesis. (air freshener)
- ✦ Forests slow down forceful winds, protecting homes and habitats. (windbreaker)
- ✦ Forests provide many foods for people—from nuts and berries to white-tailed deer. (snack food)
- ✦ Forests improve water quality by slowing the flow of water and filtering out pollutants. (coffee filter)
- ✦ Forests have provided beauty and enjoyment for generations. With careful management, they will continue to do so for years to come. (rear-view mirror)



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Assessing Student Understanding

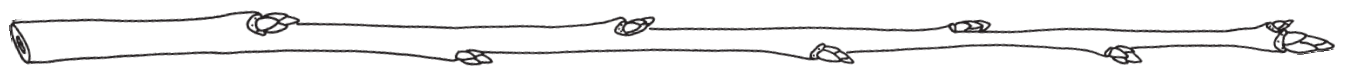
Observe student participation in class activities. Evaluate level of understanding and ability to communicate knowledge.

Ask students to come up with other everyday objects that demonstrate the functions of a forest ecosystem. They should write about the connections or present their findings to the class.

Extending the Learning

Plant a Renewable Resource!

Arbor Day has been an American tradition since 1872. Wisconsin residents have celebrated it since 1889. Each year, the state nurseries of the Wisconsin Department of Natural Resources offer free tree seedlings for distribution to each fourth grade student in celebration of Arbor Day. You can order trees for your fourth grade students by sending in the form sent to your school in late October. For more information on Wisconsin's Arbor Day Free Tree Program, contact the Griffith State Nursery, 473 Griffith Ave., Wisconsin Rapids, WI 54494, (715) 424-3700.



Enter the Arbor Day Poster Contest

The Department of Natural Resources Forestry program sponsors an annual Arbor Day Poster Contest for all state fifth graders. The contest is part of a national competition sponsored by the National Arbor Day Foundation and is the culmination of an Arbor Day curriculum unit that will be provided to each fifth grade teacher. One copy of the contest and curriculum materials, addressed to "5th grade teacher," is sent to all public and private elementary schools in October. Additional copies are available by writing Arbor Day Poster Contest, PO Box 7921, Madison, WI 53707.

Enter the Forest Appreciation Writing Contest

Each year the Wisconsin Department of Natural Resources sponsors a writing contest for fourth grade students. Students can enter essays, poetry, or other types of creative writing that follow the theme for that year. Contest packets with rules and judging criteria are sent to fourth grade teachers in January. The deadline is usually the first week of March. For more information, contact: Forest Appreciation Week Writing Contest, Wisconsin DNR, Bureau of Forestry, PO Box 7921, Madison, WI 53707.

Be a Tourist in Your Own Town

Find out if you live in a Tree City USA. Visit the Wisconsin Department of Natural Resources website (www.dnr.state.wi.us/org/land/forestry/uf/awareness) for a complete list of Wisconsin cities. If you do, how did your community qualify? If you don't, what are the qualifications? Is anyone in city government aware of the program or working toward the goal of becoming a Tree City? Take a walk through your community. Where are trees growing? Talk about what the community would be like without any trees. Invite your city forester or someone from the city maintenance department to talk to your group about how trees are planted, why they are planted where they are, and how people in the community can help care for trees.

Care for the Trees on Your Street

Read *Pearl Moscowitz's Last Stand* by Arthur Levine. Sometimes one tree is very important. Pearl is a "grandmother" who has seen enough changes. She's determined to save the last tree on the street. You might follow up this story with a walk around the block to check on your own neighborhood trees. Each one serves a vital purpose. The **Project Learning Tree** activity "Trees in Trouble" helps you identify some special problems that city trees face.