



LESSON 5

We All Need Trees

BIG IDEAS

- Humans value forests for their aesthetic, cultural, ecological, economic, educational, and recreational benefits. (Subconcept 23)
- Forests impact air and water quality, prevent soil erosion, and provide habitat for wildlife. (Subconcept 25)
- Wisconsin's forests have multiple economic values, including forest products, recreation, tourism, and jobs. Forests provide a variety of raw materials for many industries. (Subconcept 26)
- Humans depend on forests for products and services that they use every day. (Subconcept 28)

OBJECTIVES

Upon completion of this lesson, students will be able to:

- Explain reasons humans value forests.
- Describe how forests support a healthy environment.
- Discuss ways forests are economically valuable.
- List forest products and services they use every day.

SUBJECT AREAS

Arts, Language Arts, Science, Social Studies

LESSON/ACTIVITY TIME

- Total Lesson Time: 90 minutes
- Time Breakdown:
 - Introduction.....20 minutes
 - Activity30 minutes
 - Conclusion.....40 minutes

TEACHING SITE

Classroom

FIELD ENHANCEMENT CONNECTIONS

This lesson closely ties with Field Enhancement 1, *Wood's Worth*.

NUTSHELL

In this lesson, students learn about forest values and categorize them. As a culmination, students write and produce a radio or television commercial promoting the value of trees.

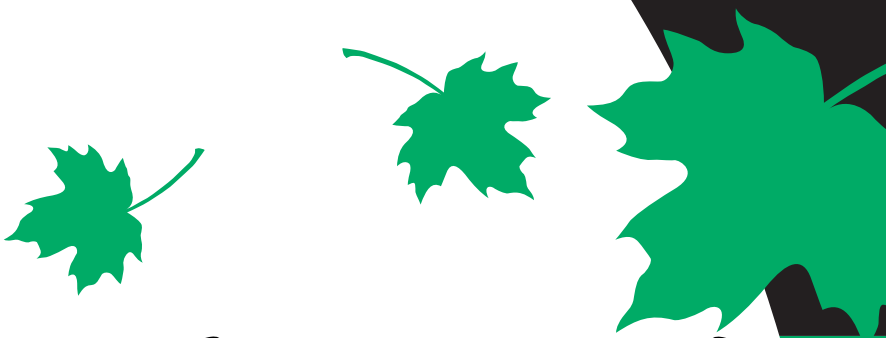
BACKGROUND INFORMATION

Look at a forest. What do you see – a beautiful, peaceful place; a home for birds and other wildlife; buildings, furniture, and paper; a place for camping, fishing, hiking, hunting, and snowmobiling; a natural lab for learning about the world around us; or maybe a place where you are just part of a much greater scheme? A forest is all of these and more. How you view it has to do with the **value** or worth that you place on it. These values can be classified into several categories.

Aesthetic value relates to beauty and the natural appeal of the land, trees, and other living things within a forest. Often aesthetic appreciation is based on the senses and emotions evoked by a particular place.

Ecological value relates to a forest's worth in terms of preserving ecosystems. It includes all the organisms, their habitats, and the way those living things relate to one another and to the nonliving parts of the environment such as the soil and water. Forests impact air when trees use carbon dioxide and release oxygen. Water quality is impacted when trees serve as filters for runoff and absorb and release water. Soil erosion is decreased when trees slow strong winds and roots anchor soil and slow the flow of water. Wildlife habitat is created through shelter and food sources in the forest.

Economic value is a forest's worth in financial terms. Forests provide raw materials for many industries, jobs (nearly 300,000 in Wisconsin), a base for tourism, and an amazing number of products.



VOCABULARY

Cultural Value: The worth of a forest in terms of the way a person was raised to believe in it.

Ecological Value: The worth of a forest in terms of what it contributes to an ecosystem as a whole.

Economic Value: The worth of a forest in financial terms.

Educational Value: The worth of a forest in terms of its benefits for teaching and learning.

Recreational Value: The worth of a forest in terms of its use for leisure.

Value: The worth someone places on something.

Recreational value is based on a forest's use in terms of leisure. Forests give us places to relax and have fun including hiking, biking, skiing, snowmobiling, ATV riding, fishing, hunting, trapping, bird-watching, photography, and camping. Forests are locations for seasonal homes and resorts.

Educational value is the worth of a forest in terms of its instructional value. From research projects, school forests, and nature centers to guided hikes and making observations, forests' educational values are numerous.

Cultural value is the worth of a forest in terms of the way one was raised to believe in it. These values often tie in with religious beliefs, family influences, and our ethnic and racial backgrounds. Cultural values can include activities such as hunting and maple sugaring. Growing up in a mill town or being part of a family with roots in the lumber industry are also things that influence cultural values of forest. The forest influence pervades the way people think and act.



MATERIALS LIST

FOR THE CLASS

- Chalk/marker board
- Overhead transparency of Teacher Page 🍁2, *Game Categories* (optional)
- Noisemakers (need three or four)
- Video Camera (optional)

FOR THE TEACHER

- Teacher Page 🍁1, *Game Categories and Words*
- Teacher Page 🍁3, *Tree Products List*

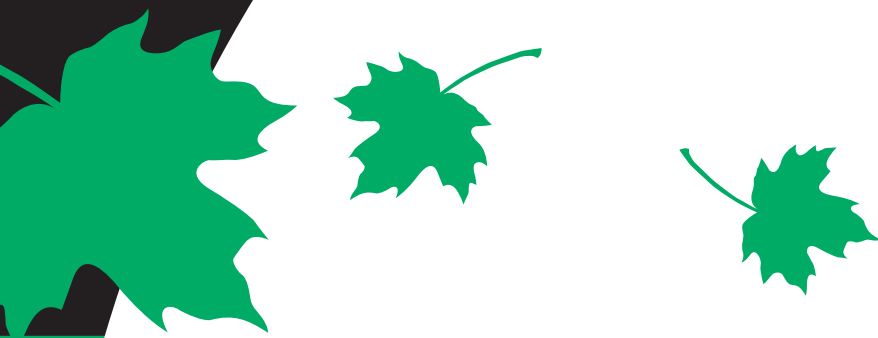
TEACHER PREPARATION

Write game categories on the board or make an overhead transparency of Teacher Page 🍁2, *Game Categories*.

We value forests because they contribute to our quality of life. There are services forests provide that fit into more than one of the value categories. These include carbon sequestering (trees store carbon in their tissues which reduces carbon in the atmosphere), muffling noise, providing shade, and providing resources for products that make our lives easier. Such amenities may be overlooked because they are not easily seen or quantified. They are, however, important reasons to value our forest resources.

PROCEDURE INTRODUCTION

1. Discuss the definition of value. (*The worth someone places on something.*)
2. Have each student take out scrap paper and list five things that they value. (*Friends, Gameboy, parents, etc.*) Ask for volunteers to share things on their list they value. Ask if other students have some of the same things.



3. Have students brainstorm the reasons people value forests. (*Beauty, wood, homes for animals, etc.*) Record all answers on the board. Discuss that these things can fall into categories. Sometimes they fall into more than one.

- Ecological value - The worth of a forest in terms of preserving the ecosystem.
- Economic value - The worth of a forest in financial terms.
- Recreational value - The worth of a forest in terms of its use for leisure.
- Educational value - The worth of a forest in terms of its benefits for teaching and learning.
- Cultural value - The worth of a forest in terms of the way a person was raised to believe in it.

Explain that they are going to be naming specific examples for two of these categories.

4. Make a list of economic benefits people get from forests. (*Jobs, products to sell, tourism.*)
5. Make a list of ways forests impact the environment. (*Prevent soil erosion, store carbon, cycle nutrients.*)
6. Lead a discussion about values. Make sure to point out that there are no right or wrong answers when it comes to values. What we value and why depend on our economic, educational, and social background. Discuss some of the different values that are listed on the board and why people may feel they are important.

ACTIVITY

1. Explain that students will play a game that involves using short clues to guess words related to a forest value category.
2. Give an example of how the clues will be read. The category is "Why Trees Are Important." The clues are: "summer," "cool," "leaves." The answer is "shade."

3. Divide the class into three or four teams. Explain the rules.

- a. On each team, players line up facing the board with the categories written on it (or use the overhead transparency of Teacher Page 🍁2, *Game Categories*).
- b. The player at the front of the line for each team will be the one with the chance to answer the question. Students who know the answer should "ring in" by raising their hands or using noisemakers.
- c. After the question has been read and a correct answer given, those players go to the back of the line and the next players step forward.
- d. Give a point for every correct answer and record that on the board. Subtract a point for incorrect answers. If an incorrect answer is given, another team may try to answer to get the point.

4. Choose a category to begin. Begin to read clues from that category on Teacher Page 🍁1, *Game Categories and Words*. Complete all the words in a category before moving on to the next.

5. Once all of the categories and words have been used, tally the points and move on to the bonus round.

- a. The bonus round is a speed round. Each team will work together to list products we use from forests on a piece of paper.
- b. Each team is given two minutes to make a list of as many forest products as they can think of.
- c. At the end of the two minutes, the whole class listens to the products that were on each group's list. As a group, the class determines whether they qualify as products they use every day (or often enough) and whether they are made from trees.

- d. Teams get one bonus point for each correct thing listed. Tally the final score.

NOTE: Teacher Page 3, *Tree Products List*, includes products that students may not name on their own. Discuss those they were unaware of.

CONCLUSION

Have students work in groups of four to create a video, radio, or live commercial about the value of forests using the criteria below. Have students present their commercial to the class when they are done. Write the following guidelines for the project on the board.

1. You will work in groups of four.
2. Your commercial must be one to two minutes in length.
3. Your commercial's main topic is: Why should people value forests? In the commercial you should incorporate information from at least four categories from the beginning of the lesson. One must be economic benefits. One must be ecological benefits. You may choose the other two. (Recreational, educational, or cultural.)
4. Your commercial must have some type of music in it and must have some type of slogan that is "catchy."

CAREERS

The career profile in this lesson is about Jim Buchholz, Park Superintendent, WDNR. Career Profile 4E.PS is found on page 84. Use this profile to enhance the lesson and/or use it with the special careers lesson on page 148.

SUMMATIVE ASSESSMENT

Assign students to design a survey and ask parents, neighbors, relatives, and others why they value forests.

REFERENCES

Miller, G. T. Jr. (1991). Environmental Science – Sustaining the Earth. Belmont, CA: Wadsworth Publishing Company.

Strathe, S., Hylla, N., Kiser, S., Boyd, E., & Dreier, P. (2000). Wisconsin Forestree – Bridging the Gap Between Environment and Economy. Central Wisconsin Environmental Station.

Wisconsin Department of Natural Resources.
World Wide Web: www.dnr.state.wi.us

RECOMMENDED RESOURCES

●●● WEBSITES ●●●

International Paper Life of a Forest
www.iplifeoftheforest.com/

Find information on the values of forests as well as how to get education materials. A number of forest topics are addressed.

REAL TREES 4 Kids
www.realtrees4kids.org

Find activities and information about Christmas trees. Contains sections for both kids and teachers. Different sections address economic, social, and ecological values of Christmas trees.

The World of Trees
www.domtar.com/arbore/english/index.htm
This website has information and activities about tree life cycles, values, and stewardship opportunities. Forest structure, tree structure, and lots of other forest information are included.

Jim visits all areas of the park to check on visitors and the natural resources they are using.



JIM, PARK SUPERINTENDENT

This is Jim Buchholz. Jim is the Park Superintendent at Kohler-Andrae State Park. He directs the way the park is run. This includes training and supervising employees who work with law enforcement, maintenance, outdoor education, and revenue collection. He also maintains the budget, helps decide park rules, and presents programs. People who visit the park come from Wisconsin, other states, and even other countries. There are almost 500,000 people who come to the park every year!

Jim has a bachelor's degree in Wildlife Management and also attended North Central Technical College to become a certified law enforcement officer. To help him gain experience, he worked in temporary jobs in state parks before he got this job. Jim has been at his job for 27 years. He is a member of a statewide parks group and the Sheboygan Chamber of Commerce.

Jim says he enjoys his job because he gets to help people enjoy their stay in the park. He also gets to use his creative talents to plan new displays and trails.

If you want to be a park superintendent, Jim suggests that you learn as much as you can about outdoor recreation. Visit local and state parks as often as you can and observe how they are managed. Jim also says, "Stop and ask questions of park rangers, park supervisors, or other park workers. They're always happy to answer your questions."

GAME CATEGORIES AND WORDS

CATEGORY: WAYS TO ENJOY FOREST BEAUTY

- Feathers, binoculars, identification books**Bird-watching**
- Pencils, paper, picture**Sketching**
- Camera, color, black and white**Photography**

CATEGORY: RECREATION IN A FOREST

- Deer, grouse, firearms.....**Hunting**
- Fire, hot dogs, tent**Camping**
- Trails, feet**Hiking**
- Trails, wheels, quiet**Biking**
- Winter, machines, trails**Snowmobiling**
- Winter, webbed feet, deep snow.....**Snow Shoeing**

CATEGORY: WAYS FORESTS HELP THE ENVIRONMENT

- Makes air, breathe**Give Oxygen**
- Open spaces, stop blowing soil, stop drifted snow**Provide Windbreaks**
- Shelter, critters, home.....**Provide Habitat for Animals**
- Sponge, gas used in photosynthesis, stores**Absorb Carbon Dioxide**
- Slow water, roots hold soil, no mud slides**Prevent Erosion**
- Filter, clear streams, healthier**Improve Water Quality**

CATEGORY: HOW FORESTS HELP WISCONSIN'S ECONOMY

- Hiking, biking, camping**Providing Recreation**
- Wisconsin Dells, autumn color, parks**Tourism**
- Forester, park ranger, sawmill worker**Jobs**
- Fruit, lumber, paper**Forest Products**

CATEGORY: LEARNING FROM FORESTS

- Field trips, teachers, students....**School Forest**
- Experiments, problem solving, collecting data, scientists**Research**

CATEGORY: FOREST-RELATED CAREERS

- Plans, measures trees, works in forest.....**Forester**
- Plants, harvests, trees as a crop**Tree Farmer**
- Inside, saws, makes lumber....**Sawmill Worker**
- Outside, saws, harvests trees**Logger**
- Campers, hikers, protects.....**Park Ranger**

CATEGORY: THINGS MADE FROM TREES

- Float, paddle, motor**Boats**
- Sport, swing, hits**Baseball Bats**
- Shelter, walls, people**Houses**
- Roll, soft, bathroom**Toilet Paper**
- Lined, school, notes**Notebook Paper**

CATEGORY: ANIMALS THAT LIVE IN FORESTS

- Climb trees, eat acorns, bury nuts**Squirrels**
- Night, eat mice, fly.....**Owls**
- Many species, flying, buzz**Insects**
- Eat insects, eight legs, webs**Spiders**
- Herd, hunted, antlers**Deer**

CATEGORY: FOOD FROM TREES

- Red, pie, caramel.....**Apples**
- Pie, pits, sundae topper**Cherries**
- Mixed, chopped, in brownies**Nuts**
- From Wisconsin's state tree, sap, pancakes**Maple Syrup**

CATEGORY: THINGS IN HOUSES THAT ARE MADE OF WOOD

- Four legs, around a table, sit.....**Chairs**
- Plates, food, storage**Cupboards**
- Four legs, large and flat, eat at.....**Tables**
- Open/close, walk through, for privacy.....**Doors**
- Strips of wood, down low, walked on.....**Floors**

GAME CATEGORIES

Category: **Ways to Enjoy Forest Beauty**

Category: **Recreation in a Forest**

Category: **Ways Forests Help the Environment**

Category: **How Forests Help Wisconsin's Economy**

Category: **Learning From Forests**

Category: **Forest-related Careers**

Category: **Things Made From Trees**

Category: **Animals That Live in Forests**

Category: **Food From Trees**

Category: **Things in Houses That Are Made of Wood**

TREE PRODUCTS LIST

ALL OF THESE PRODUCTS ARE MADE IN WISCONSIN!

SOLID WOOD PRODUCTS

- Animal Bedding
- Bark Mulch
- Billboards
- Boats
- Bookshelves
- Canoes
- Corn Dog Sticks
- Crutches
- Doors
- Fences
- Firewood
- Furniture
- Picture Frames
- Playground Equipment
- Pool Cues
- Railroad Ties
- Rulers
- Stairways
- Telephone Poles
- Violins
- Yardsticks

PAPER PRODUCTS

- Books
- Calendars
- Candy Wrappers
- Cardboard
- Dental Tray Covers
- Drinking Cups
- Disposable Surgical Gowns
- Envelopes
- Gift Wrapping Paper
- Masking Tape
- Milk and Juice Cartons
- Napkins
- Newsprint
- Photographic Paper
- Puzzles
- Toilet Paper
- Wallpaper

FOOD PRODUCTS

- Apples
- Cider
- Hickory Nuts
- Maple Syrup
- Pears
- Plums
- Walnuts

MISCELLANEOUS PRODUCTS

- Liquid Smoke
- Shade

