LESSON 5
Many Forests, Many Values, Many Reasons

NUTSHELL

In this lesson, games, story analysis, and brainstorming help students categorize and assess people's forest values. Groups answer questions about Wisconsin's past and present forest use to get an idea of how forests shape the economy, culture, society, and environment. Students have a chance to demonstrate creatively what they've learned about values by completing an independent or small group project and presenting it in class.

BIG IDEAS

- The lumber era shaped Wisconsin's economic, cultural, social, and environmental landscapes. Influences of this time period are still visible in Wisconsin today. (Subconcept 22)
- Humans value forests for their aesthetic, cultural, ecological, economic, educational, and recreational benefits. (Subconcept 23)
- The degree of emphasis individuals place on forest values may vary. Reasons can include wealth, health, religion, culture, ecological knowledge, and personal experience. (Subconcept 24)
- 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)
- Forests can shape the economic, social, and cultural composition of local communities. (Subconcept 27)
- 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:

- Classify values placed on forests.
- Identify factors that influence how individuals value forests (wealth, health, religion, ecology, and culture.)
- Describe why forests are important to the environment, economy, and to themselves.
- Recognize the role that forest values play in shaping communities and relate how forest values have played this important role throughout history.

SUBJECT AREAS

Arts, Language Arts, Science, Social Studies

LESSON/ACTIVITY TIME

- Total Lesson Time: 155 minutes (Extension will be an additional 50 to 100 minutes)
- Time Breakdown:

Introduction	10 minutes
Activity 1	30 minutes
Activity 2	45 minutes
Activity 3	50 minutes
Conclusion	20 minutes

TEACHING SITE

Classroom

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.

MATERIALS LIST

FOR EACH STUDENT

- Copy of Student Page **1**, *Legacy of a Maple*
- Copy of Student Page **2**, *The Speakers Speak*

FOR EVERY 3 TO 4 STUDENTS

- Copy of Student Page **3**, *Legacy of a Maple Info Sheet*
- Copy of Student Pages **4A-C**, *Wisconsin Forests and Communities, Then & Now*
- Wisconsin state highway map (To obtain free state highway maps visit the Wisconsin Department of Transportation website at: www.dot.wisconsin.gov/. Search for "state road map.")

FOR THE CLASS

- Picture of a forest
- Marker/chalk board or chart paper
- Ball made of soft foam or crumpled paper
- Timer or source of music
- Four large sheets of paper and markers

FOR THE TEACHER

- LCD or overhead projector
- Copy of Teacher Pages **1A-B**, *Forest Value Statements*
- Teacher Page **2A-B**, *Student Page Keys*
- Copy of Teacher Page **3**, *You Won't Believe What We Can Make From Trees* to project

TEACHER PREPARATION

Print or write out the definitions of aesthetic value, cultural value, ecological value, economic value, educational value, and environmental value on large sheets of paper and post around the room.

How you view it has to do with the **value** 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 what it contributes to the ecosystem as a whole. It includes all the organisms, their habitats, and the ways 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, a base for tourism, and an amazing number of products.

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, birdwatching, photography, and camping. They are locations for seasonal homes and resorts.

VOCABULARY

Aesthetic Value: The worth of a forest in terms of its natural beauty.

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 the ecosystem as a whole.

Economic Value: The worth of a forest in financial terms (dollars and cents).

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.

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 forests. The forest influences the way people think and act.

We value forests because they contribute to our quality of life. There are services forests provide that do not fit easily into one of the value categories. These include carbon sequestering, 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.

With a little thought, it is easy to see how conflicts can arise from differing values. Someone who values the forest because it is a home to wildlife (ecological) may not be able to understand the point of view of someone who wants to hunt (recreational) or cut trees for timber (economic). Even when people hold the same type of value there may still be problems. For instance, people who make their living through tourism (economic) probably want to keep the forest intact, while those who make their living through the lumber or paper industry (also economic) want to harvest trees.

It is possible for people with different values to work together and even enhance each other's efforts and enjoyment. Establishing a wildlife preserve (ecological) can also make a good place for studying and learning (educational) as long as those using it are careful not to disturb habitats. A logging road (economic) can later be a good trail for biking and snowmobiling and for hunter access (recreation). A key to avoiding conflicts, or for reaching a reasonable resolution when they occur, is understanding why people hold different values.

The values we place on forests are influenced by social and physical factors and our degree of knowledge and understanding about forests. These reasons may include wealth, health, religion, culture, ecological knowledge, and personal experience. Being financially secure may make it easier to value forests for their less practical benefits such as aesthetics or recreation. On the other hand, if the reason a person is wealthy is because he/she always puts financial considerations first, he/she may value forests for only economic reasons. A person who is less financially stable may cut wood to heat his/her home or lease out forest land for the extra income it provides. Conversely, he/she may

value it for providing fairly low-cost products and recreation. The other reasons have similar dichotomies. If you have good health, you may value forests for the ways you can be active in them, while poor health may make most things having to do with forests seem unimportant.

Some religions teach humans' dominion over nature, while others hold the care of nature as sacred. Some people see ecology as a way of understanding everything about the world and where we fit in; others see it as a low priority. Some cultures place little value on things that aren't directly tied to profit, while others instill a reverence for the earth and the role of humans as stewards. Someone who understands that managing deer populations is necessary for certain species of plants to survive would react differently to hunting than someone with different ecological knowledge. Personal experience affects people's values of forests and how they view situations. Sometimes people just need exposure to a certain forestry practice or use in order to understand why others value it.

FORESTS INFLUENCE OUR LIVES

Besides looking at the values people have regarding forests and why they have them, it's interesting to consider the ways that forests and the forest industry have influenced our lives. Forests have been a major factor in the lives of Wisconsin Woodland People (such as the Menominee) for more than 10,000 years. As one Menominee said, "Everything we have comes from Mother Earth – from the air we breathe to the food we eat – and we need to honor her for that. In treating the forest well, we honor Mother Earth."

Influences of the early logging days (1850-1920) can still be found in Wisconsin today. Many immigrants of European descent who came to Wisconsin, did so to harvest its forests and to take advantage of its abundant jobs, supply of wood, and other natural resources for building homes and businesses. Descendants of these people are still living in Wisconsin today, adding to the variety of ethnicity we have in our state. Company towns sprang up and died as the forests were cleared and loggers moved on to other locations. Later, immigrants who came to Wisconsin tried to turn the cutover (the land after all the trees had been harvested) into farms. Many of these ventures were unsuccessful due to the difficulty in removing stumps, poor soil conditions, climate, and factors related to World War I and the Great Depression. Farms were abandoned and eventually returned to forest. Many of these lands make up our current system of national, state, and county forests and parks. The need to transport logs, and then milled lumber, led Wisconsin pioneers to rely first on the natural system of waterways and then to build railroads and road systems. These, in turn, influenced where settlements were located and are reflected in today's transportation system and location of current population centers.

Influences related to forests go both ways. Wisconsin's economy, society, and culture have been, and continue to be, affected by our forest resources. Conversely, we affect the forest with our activities. Almost none of the old growth of the early 1800s remains, yet forests today continue to cover about 46 percent of the state and forest acreage is growing. Much of this is because the value of sustainable forest management has been recognized. Roads and development have cut into significant areas of forest land, but have also made the forests accessible for more people. We use forest products every day and rely on having them in steady supply. Luckily, our forests are a renewable resource. It's important for students to realize all the ways that forests can be valuable and to start thinking about why forests matter to them personally. To ensure the sustainability of Wisconsin's forests, students must recognize the importance of forests to their lives and understand the role they have as future decision makers.

PROCEDURE

INTRODUCTION - FOREST VALUE CATEGORIES

1. Show the class a picture of a forest or look out the window at one. Ask students to think of at least one reason forests are important to them. Have a few volunteers share their reasons. Explain that many of these reasons fit into different categories of values.

2. Post large cards or sheets of paper with the definitions of aesthetic value, cultural value, ecological value, economic value, educational value, and recreational value so that every student can see them. (Keep the definitions posted for Activity 1 and Activity 2.) Briefly discuss the meanings of these values.

3. Have students give examples of how the forests fit into each of those value categories. *(A beautiful view or the changing colors of fall leaves provides aesthetic value. Going hunting with family and friends or growing up in a town where forests are the pervading influence on lifestyles provides cultural value. Providing food and shelter for wildlife and preventing soil erosion are examples of ecological value. All of the products and jobs that forests provide are benefits that relate to economic value. Being able to visit a school forest or study bird migration and nesting are educational values. Having a place to hike, ski, or play in a forest is why it has recreational value.)*

4. As a final step, ask students which of the values are most important to them.

ACTIVITY 1 - FOREST VALUE STATEMENTS GAME

1. Divide the class into four to six teams. Everyone on the same team should sit together in a row. If time allows, have the teams choose their own name related to forestry (e.g., The Lumberjacks, Mighty Oaks, Sawyers). If time is limited just name them by number or letter. Post the names on the board or chart paper for keeping track of scores.

2. Choose the team that goes first by some random method (dice, coin flips, draw a card, etc.). After that, play proceeds team-to-team in any orderly method that works for how the room is set up (left to right, right to left, clockwise, etc.)

3. Explain that you will be reading a statement related to forest values (Teacher Page **1A-B**, *Forest Value Statements).* Students are to decide if the statement represents: aesthetic value, cultural value, ecological value, economic value, educational value, or recreational value. Students on each team take turns answering, beginning with the first person in each row. (No help from other team members.) If the answer is correct, that team receives 10 points. If it is incorrect, any other person on that same team may raise his/her hand to answer. A correct "second chance" answer is worth 5 points. (Still no help from teammates. Students who volunteer on a missed question still take their regular turn when it comes up.) If not correct, score zero and go to the first person on the next team with a new statement. Noisy teams forfeit the opportunity for a second chance on missed statements. Some statements may be interpreted in more than one way; be open-minded. If students give an answer not on the list and can give a good explanation to justify their answer, they receive the points.

4. Continue until all statements have been read or a prescribed amount of time runs out. The winning team is the one with the most points. Ties are fine!

ACTIVITY 2 – LEGACY OF A MAPLE

1. Ask students to think back to the introduction. Did everyone in class think that the same values were the most important? *(No.)* Discuss why individuals value things differently; wealth, health, religion, culture, ecological knowledge, and personal experience can all play a role. Write these on the board and have students think of other possible factors that can play a role. Provide an example or two to help explain each of these. *(Someone who doesn't have very much money may value a forest mostly for what he/she can get from it economically [by cutting and selling the wood, leasing it for hunting, or developing it for home sites], while someone who doesn't have to worry economically may be more interested in a forest for its beauty or as a place to rest and relax. Someone who has chronic health problems may not care too much about forests at all [because he/she is too ill to use them] or may care most about the drugs that can be derived from the parts of some trees. On the other hand, a healthy person may value forests for their recreational opportunities.)*

   Ask students to come up with examples for the remaining values. *(Some religions teach that humans have dominance over all and have the right to use resources as they see fit; other religions take more of a "humans as caretakers" point of view. Some people don't believe in religion per se, but may see nature as their religion. Those who understand ecology and view the environment as an interrelated system that humans are just a part of will look at forests and value things differently than those who view humans as "in charge." A culture that is earth-centered, such as that of some Native Americans, will tend to value the forest for ecological, educational, and aesthetic reasons, while a money-centered culture will tend to look at the economic benefits.)*

2. Divide the class into groups of three or four. Have each student read Student Page **1**, *Legacy of a Maple* and Student Page **2**, *The Speakers Speak* and match the statements with the description of the person who made them. As a group, they should fill in Student Page **3**, *Legacy of a Maple Info Sheet*. Have them identify the value(s) expressed in each statement (refer to the definitions posted in the room) and the factors (wealth, health, religion, culture, ecological knowledge, and/or personal experience) that influenced the speakers. (See Teacher Page **2A-B**, *Student Page Keys* for answers.)

3. Bring the class back together and discuss their results. Emphasize that most of us are influenced by many factors and that different values may matter to us more or less depending on the issue or situation.

ACTIVITY 3 – NAMING FOREST VALUES

1. Start with a quick game of "Forest Products are HOT." Have students gather in a circle (it would be nice to do this outside, but not necessary). Explain that you will be setting a timer (or starting some music) and then tossing a ball to a student at random. (Two to three minutes or the length of one song should be about right. Remind students to toss the ball gently and that they must take it when it comes to them. The ball can be made of soft foam or even crumpled up paper. After all, this is a forest products game!) When a student catches it, he/she should quickly name a product that comes from the forest (made of some part of trees) and then toss it to someone else. The person who gets it next should do the same. The same product should not be named more than once. Continue doing this until the timer goes off. The idea is not to have the ball at the end – it's HOT! Have students go back to their seats. Ask if they're surprised by how many forest products were named.

2. Now project Teacher Page **3**, *You Won't Believe What We Can Make From Trees* and ask a few questions. Which items are a surprise (you didn't know that they were forest products)? *(Answers will vary, but it's likely that many of the cellulose and sap products will not be familiar to many students.)* What are some of the items that you use regularly? *(There will be many answers.)* Based on this, do you think you could do without forest products for very long? *(No.)* Another way to say that we depend on the forest for these things is that we "value" it. Emphasize how much humans depend on forest products every day.

3. Ask the question, "Besides these products, what are some ways that forests affect our economy?" *(It may take some direction from the teacher, but eventually students should come up with recreation, tourism, and jobs.)* What's another way that forests are valuable (aside from their economic benefits)? *(Ecologically or environmentally.)* Divide the class into four groups, each at a table or space on the floor (a station). Give each group a sheet of chart paper and a marker. One should be labeled "recreation/tourism," another "ecology/environment," a third "jobs," and the last "products or raw materials." Have students write down things forests provide pertaining to the topic listed at the top of the chart paper. After two minutes, have groups rotate, moving on to another station and leaving the chart paper at their starting station. At the new station, they should read the list and add to it. Continue to rotate every two minutes until all groups have been to all stations. Hang the charts where everyone can see them and review the final lists. Note that there's probably overlap between them (for example, jobs may cut across all areas). Emphasize that forests have multiple economic as well as ecological values.

   As you discuss the ecological/environmental values, be sure students understand how forests contribute to air and water quality (releasing oxygen and using carbon dioxide, serving as a filter for runoff, providing shade, absorbing and releasing water, muffling noise), erosion control (roots anchor the soil and slow the flow of water; forests also buffer strong winds), and wildlife habitat (forests provide shelter and food sources).

4. Now divide the class into groups of three or four. Give each group a Wisconsin state highway map and have the groups complete Student Pages **4A-C**, *Wisconsin Forests and Communities, Then & Now.* (An alternative way of conducting this part of the lesson is to give the Student Pages as homework. Students can pair up to compare and discuss results.) Finish by bringing all the groups together and having a class discussion. Briefly go over the answers and point out how forest influences of the logging era can be seen today. Ask, "What are some of the key areas in which forests have influenced Wisconsin communities?" *(Likely answers are transportation routes, locations of towns, immigration and ethnic makeup, tourism, and technology.)*

CONCLUSION - JOURNALING

Have students answer the following questions in their class journal (or as homework). Then discuss them in class:

- If you could have only one forest product, what would it be? Why?
- Of the values we discussed in class (aesthetic, cultural, ecological, economic, educational, or recreational), which are most important to you when you think of forests? Give specific examples of how you use forests that back up your answer.
- Think about the influences in your life (parents, friends, school, church, television, etc.). How have these affected what you think about forests and how you value them?

EXTENSION

1. Assign students to creatively show why forests are important to the environment, economy, and to themselves. Have students work alone or in a group of up to four. A possible list of projects can be found on page 96. Teachers should approve projects before students begin, making sure that there is variety in each class. Stress to students that they will be teaching each other through their presentations, so it is important both that they do a thorough, careful job on their projects and that they pay attention to one another's presentations. Allow some class work time for projects, but some work may need to be done outside of class. Students could be asked to keep a journal about what they learn from the presentations of others.

2. After students have completed their projects, have them demonstrate what they did. Mobiles, collages or any other type of artwork may be hung in the classroom or in other appropriate places in school or the community (e.g., library). Use "teachable moments" as students present their projects for discussion.

CAREERS

The career profile in this lesson features Darren Marsh, Operations Manager for Dane County Parks. The Career Profile is found on page 98. A careers lesson that uses this information begins on page 170.

POSSIBLE PROJECTS FOR THE EXTENSION

- Make a mobile of natural objects from the forest or products derived from wood or wood processing. Mobiles should have at least 10 objects. Each object should be labeled as to its use and importance. The object most important to the student should be singled out in some way (bigger label, placement at top or bottom of mobile, etc.) *(This project is for one or two people)*
- Create a presentation using PowerPoint, Hyper cards, or some type of slide show software that shows forest uses and/or why forests are important environmentally, economically, and personally. It should contain at least six slides and at least two graphics. *(For one or two people)*
- Write and perform a rap, song, play, puppet show, mock TV talk show interview, etc. The performance may be live or videotaped. Rap or song performances should be at least three minutes. Other performances should be at least five minutes. Stories may be told from the point of view of humans, wildlife, trees in the forest, forest products, or any combination of those. *(For up to four people)*
- Spend some time (at least 20 minutes) in a forest or near a tree that's special to you. Try to be as quiet as possible and observe all that you can about it and things related to it. Write a poem, reflective prose or a story of some type about this experience. Also include an illustration. *(For one person)*
- Make a collage which clearly shows forests and their products. Collages must contain at least 10 elements. Neatness, artistry, and conveying a message are all important. *(For one person)*
- Research the role of forests in history (especially in Wisconsin). Make a presentation in any of the ways listed above to show what you learned. *(For one to four people depending on the type of presentation)*

SUMMATIVE ASSESSMENT

- Now that students have a better understanding of forests, forest products, and their various values, have them keep track of all that they use in a day, so that they really begin to appreciate the forest in a personal way. Urge them to involve their families.
- Write an essay from the point of view of a forest describing the people who come and use it and what they seem to value about it.
- Have students bring in a variety of forest products and make a display in a public area of school (such as the library or a display case) that will let others learn more about them.

REFERENCES

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Landau, S. I. (1963). Funk & Wagnalls Standard Desk Dictionary. New York: Funk & Wagnalls, Inc.

The Menominee Forest Management Tradition: History, Principles and Practices. (1997). Menominee Tribal Enterprises.

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 Forests Forever Teachers' Guide. (2000). Wisconsin Forest Resources Education Alliance.

RECOMMENDED RESOURCES

●●● PUBLICATION ●●●

A Look at Wisconsin's Forests. Wisconsin Department of Natural Resources (1998). PUB-FR-122 Pamphlet highlighting facts about Wisconsin's forests.

●●● ACTIVITIES/CURRICULUM ●●●

If Trees Could Talk, Forest History Society, www.lib.duke.edu/forest/curriculum/
A national curriculum on forest history. The downloadable on-line activities have a social studies focus.

●●● BOOK ●●●

There's Daylight in the Swamps by Mert Cowley. (Chetek, WI: Banksiana Publishing Co.) This book documents the history of logging in the Great Lakes region. Photographs, drawings, letters, and job descriptions give you a feel for what lumber camp was really like.

●●● WEBSITES ●●●

Temperate Forest Foundation
www.forestinfo.org/Discover/issues.htm
Explanation of issues related to a variety of forest topics.

Department of Wood Science and Engineering, Oregon State University http://wood.oregonstate.edu/teachers.php
Great resources about wood products. Find pictures and lists of products made from wood along with information on how tree parts such as cellulose are extracted and used.

Primary and Secondary Wood Using Industry Database, Wisconsin Department of Natural Resources, UW Extension, Department of Forest Ecology and Management UW Madison www.woodindustry.forest.wisc.edu/
This website provides lists of primary and secondary wood-using industries in Wisconsin. You can search by materials used, products sold, number of employees, species used, city, county, and more. Look up your own town and see what forest products are made there. You might be surprised!

Forest Products Industry Map, Wisconsin Department of Natural Resources
http://dnr.wi.gov/forestry/smartForestry/toolbox/data_map.asp
This map shows locations of primary and secondary wood-using industries in Wisconsin.

●●● VIDEO ●●●

Forest Story: Restoring Wisconsin's Treasure by Wisconsin Department of Natural Resources (May 2000). This 25-minute video overviews Wisconsin's forest history since the cutover era. Learn what happened after the trees were cut, who the key players were, laws and regulations that led to reforestation, and about the emergence of forestry as a profession. The video can be viewed on line. Search "webcast Forest Story: Restoring Wisconsin's Treasure" at http://dnr.state.wi.gov. To obtain a copy contact Kirsten Held at the WDNR: (608) 264-6036 or heldk@dnr.state.wi.us

The **LEAF website** has additional Recommended Resources at www.uwsp.edu/cnr/leaf.

Additional forestry education materials are available for check-out to Wisconsin educators from the **Wisconsin Center for Environmental Education Resources Library**. Visit www.uwsp.edu/wcee.

CAREER PROFILE

DARREN, PARKS OPERATIONS MANAGER

Darren (right) enjoys designing and building new park facilities.

Meet Darren Marsh. He is the Operations Manager for Dane County Parks, which encompass over 8,000 acres of land. Darren is responsible for supervising day-to-day work at 33 parks and nine Natural Resource Sites in Dane County (south-central Wisconsin). His duties include planning projects, overseeing the budget, ensuring park enforcement, and managing public contact and special events. The park system has 25 full-time employees and as many as 30 limited-term staff whom he hires, trains, supervises, schedules, and evaluates. County residents, park visitors, volunteer groups, partner agencies and other county departments all benefit from the work Darren does. This can be challenging because these groups may have different goals and values for the parklands.

Darren has had training in many areas. He has a Bachelor's degree in Forest Science, emphasizing Recreation Resource Management, from the University of Wisconsin-Madison. He also has law enforcement officer training, management training, and Forest Service firefighting training. In addition to the education that Darren has, he also has worked in a variety of jobs to get experience. The job that most helped Darren appreciate what people value about resources was when he worked for the Jackson County Forestry and Parks Department in Black River Falls, Wisconsin.

Darren says that of the many parts of his job that he enjoys, his two favorites are working with volunteer groups and designing new park facilities. Volunteer groups bring a positive energy to projects and developing new facilities allows him to be creative and feel a sense of accomplishment.

If a job like Darren's sounds interesting to you, he has some suggestions. "Students should continually try to find work and volunteer opportunities that will develop their skills and background in the field of natural resources." Darren says that if you want to work in the field of forestry, it is important to develop a work history with jobs related to forestry.

FOREST VALUE STATEMENTS

Aesthetic Value: Relating to beauty in nature, art, etc.

Cultural Value: Relating to society, especially values, morals, manners, and tastes.

Ecological Value: Relating to interactions of organisms with each other and with their environment (ecosystems).

Economic Value: Relating to financial matters.

Educational Value: Relating to learning.

Recreational Value: Relating to activities done for fun or entertainment and leisure.

STATEMENTS

- If it weren't for all the dead trees on my property, I wouldn't have so many woodpeckers. *(Ecological)*
- I'm sure glad I have my own woods; it would be expensive to buy wood for my fireplace. *(Economic)*
- The smooth grain of cherry wood makes beautiful furniture! *(Aesthetic, Economic, or Cultural)*
- I wish our district would use the school forest more. It has so much potential to give students a chance to experience nature firsthand. *(Educational and Possibly Recreational)*
- I really enjoy hunting these woods for grouse. Besides, grouse sure do taste good! *(Recreational, Cultural, and Possibly Economic)*
- My family has collected and sold hickory nuts and walnuts for three generations now. *(Economic or Cultural; Possibly Recreational)*
- The stream in these woods is as beautiful as any painting I've seen. *(Aesthetic; Possibly Cultural)*
- If we do timber stand improvement now, these woods will be more valuable in the long run. *(Economic)*
- These grand homes show how the lumber barons influenced this community 150 years ago. *(Cultural; Possibly Aesthetic and Economic)*
- One of my favorite ways to spend time in the Northwoods is hiking and camping. *(Recreational)*
- I've learned more from observing animals in the wild than I ever did in school biology and ecology courses. *(Educational)*
- This art center is the legacy of a lumber family. It is located in the home they once lived in and many of the works in its collection were purchased by members of the family. *(Cultural, Aesthetic; Possibly Educational)*
- It seems a shame to get rid of these gooseberry bushes, but they're a host for an insect that's causing a lot of damage to the white pines here. *(Ecological, Economic)*
- Chronic Wasting Disease is something I want to learn more about. I know it affects the deer population living in Wisconsin forests, but I don't know exactly how. *(Educational, Ecological)*

FOREST VALUE STATEMENTS (CONTINUED)

- I'm glad to live so close to a county forest. It's really beautiful and it sure attracts tourists for camping, hunting, and snowmobiling. *(Economic, Aesthetic, Recreational)*
- All those hikes in the woods with scouts sure taught me a lot. I can navigate with a compass and map, identify trees, and I've learned that all living things are interrelated. *(Educational, Ecological)*
- Traditionally, Native Americans hold a strong reverence for the land. Land ownership is not seen as being as important as the responsibility to care for the land. *(Cultural)*
- When I was growing up, we didn't spend much money on vacations since we always camped in Wisconsin's state forests. *(Economic, Recreational)*
- One of my favorite possessions is a walking stick with a carved handle. My friend made it for me from a maple branch he found in the woods on my property. *(Aesthetic)*
- When we visit state parks, we usually try to go on a naturalist-led hike or to a program in the nature center. The naturalists sure know a lot about the environment! *(Educational or Ecological)*
- The lives of the early lumberjacks were tied to their work. What they ate and even what they did for fun seemed to connect to the woods in some way. *(Cultural or Recreational)*
- I don't really like the look of an area just after it has been clearcut. At least now I understand that for some species (such as aspen) it is one of the best ways to assure the trees grow back. *(Aesthetic or Ecological)*
- One of my college professors took us on a field trip to a forest where all the oak trees except a few were dead. It turned out he was trying to find out about the genetics of the trees that were naturally resistant to oak wilt disease. *(Educational or Ecological)*
- Many forest product companies have now adopted some type of sustainable yield policy and practices. This assures that they will continue to have trees to harvest in the future and it's better for the forest ecosystem as well. *(Economic or Ecological)*
- It's surprising how much you can do with a small wooded area. A teacher I know based a whole unit on the three trees that are outside her classroom! *(Educational)*
- In places where wood isn't plentiful, having a house and furniture made of wood can be a real status symbol. *(Cultural or Economic)*
- Wooden canoes may be heavier and more work to care for than those made of aluminum or fiberglass, but they're much nicer to look at! *(Aesthetic, Recreational)*
- Leaving a standing dead tree or making brush piles of the tops and small branches of harvested trees may not seem like a big deal to most people, but it sure can be important to the birds and small mammals that live there. *(Ecological)*
- The idea of multiple-use management has opened some forested areas to a wide array of activities, from hiking and hunting to riding four-wheelers and snowmobiles. *(Recreational)*
- The Dr. Seuss book and movie, *The Lorax*, get people thinking about forest products and the environment for quite some time. You don't often think of kids' books as being so controversial. *(Ecological, Economic, Educational)*

STUDENT PAGE KEYS

LEGACY OF A MAPLE INFO SHEET

STATEMENT NUMBER	SPEAKER NAME	VALUE(S) EXPRESSED IN STATEMENT Aesthetic (A) • Cultural (C) Economic ($) • Recreational (R) Educational (Ed) • Ecological (Eco)	FACTOR(S) INFLUENCING SPEAKERS Wealth (W) • Culture (C) • Religion (R) Health (H) • Ecological Knowledge (E) Personal Experience (P)
1	Ethan Bigbucks	$	W, P
2	Sarah T. Sapp	C	C
3	Steven B. Fit	R, Possibly Eco	H
4	Kevin O'Naturalle	Eco	E
5	Angie Saefgard	Eco, Possibly C	H
6	Jebadiah Sawtooth	$	R, W
7	Kerry Lerned	Ed, Possibly C	E, P

WISCONSIN FORESTS AND COMMUNITIES, THEN & NOW

1. Wood was needed to build homes and businesses. Wisconsin's abundant supply attracted people to move west.
2. The mill towns are all located near a river. This was important for transporting logs to the mill and for transporting lumber to markets in other parts of the state and country. The mills also used the river to generate power to run the mills.
3. Many of these towns are "paper" towns, with mills along the river. The water is needed in the papermaking process and is also used as a source of power.
4. Because pine floats, it was possible to rely on rivers to transport wood to the mills. Rafts of cut boards could be made and floated downstream from the mills and sold. Hardwoods like maples and oaks, on the other hand, are not buoyant. It wasn't until railroads were built in Wisconsin that hardwood logs could be shipped to distant markets.
5. Railroads became an important source of transportation. Since they can be located anywhere, settlement became more spread out, but it tended to be along railroad lines.
6. The forests in the east had been cut over.
7. This makes sense because these countries also had forested land, so workers from there would have the skills they needed. Some also came because the resources in their countries were being used up and the U.S. seemed to be a land of plenty. Finally, climate is fairly similar in these countries to parts of Wisconsin, so it would feel like home to some degree. There were probably communication problems with so many people speaking different languages.

   Descendants of the early immigrants still live in Wisconsin and contribute to the ethnic variety of our state. Many families are still tied closely to the lumber industry and have roots in the early logging days.

STUDENT PAGE KEYS

WISCONSIN FORESTS AND COMMUNITIES, THEN & NOW (CONTINUED)

8. An area would grow in population and rise economically as soon as a mill was established (the “boom”), but it would decline and be abandoned just as quickly once the supply of timber was used up (the “bust”).
9. The forests of Wisconsin support lumber and paper mills, various building supply manufacturers such as flooring, furniture, and specialty products such as skateboards. There are also tourist-related industries and recreational opportunities. This includes everything from hunting to snowmobiling to hiking to birdwatching. To ensure these towns have a stable economy we need to manage forests sustainably so the resources we depend on will always be available.
10. Early lumberjacks needed to be strong, hardworking, and willing to work under dangerous conditions. They had to be able to live in close quarters with many other men and learn to get by on fairly simple food and basically no “creature comforts.” They needed to be away from their families for long stretches of time. Most lumberjacks were fairly young, single men.
11. The advantages of company towns were that they could be put up fairly quickly, they were located near work, and they supplied all the basics. The disadvantages were that the company ran everything, so they controlled nearly every aspect of the workers’ lives and had no competition. They also tended to be very plain, with rows of houses exactly the same. These are evident today in some of the old mill towns of Wisconsin. They were frequently abandoned and became “ghost towns” when the supply of timber was exhausted.
12. Chainsaws and heavy equipment capable of cutting a tree, stripping its branches and bark, and cutting it into shorter lengths all in one operation are now used. Loggers are not as directly involved in the physical labor of cutting as they once were, but need to be skilled machine operators and still put in long hours in places that may be difficult to get to. One person can now accomplish what many did in the 1800s. More wood can be cut in less time, but now more thought and time is put into planning the harvest to be sustainable and environmentally responsible, replanting (when appropriate), and following “best management practices.”
13. More of these immigrants were families, so there was a range of ages and a more equal distribution of males and females. A major problem was clearing all the stumps. It is said that land that was completely cut over in one year took ten years to clear of stumps and make ready for farming. In many places, the climate and soils were not good for farming.
14. Much of it regrew or was replanted to forests that now make up the Nicolet and Chequamegon National Forests, as well as numerous state and county forests.
15. We have learned that forests are not endless resources. They are renewable and must be managed sustainably in order to ensure a supply for the future.

YOU WON'T BELIEVE WHAT WE CAN MAKE FROM TREES

SOLID WOOD PRODUCTS
- Animal Bedding
- Billboards
- Boats
- Bookshelves
- Corn Dog Sticks
- Doors
- Fences
- Firewood
- Furniture
- Mulch
- Picture Frames
- Playground Equipment
- Pool Cues
- 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

CELLULOSE PRODUCTS
- Buttons
- Carpet
- Cellophane
- Ice Cream Additives
- Imitation Leather
- Ping Pong Balls
- Rayon
- Shampoo Thickeners
- Sponges
- Toothbrushes
- Toothpaste Additives
- Wallpaper Paste

SAP PRODUCTS
- Chewing Gum
- Makeup
- Crayons
- Insecticides
- Mouthwash
- Shoe Polish
- Soap
- Turpentine
- Varnish

MISCELLANEOUS PRODUCTS
- Liquid Smoke
- Shade

Primary and Secondary Wood Using Industry Database - www.woodindustry.forest.wisc.edu/
This website provides lists of wood-using industries in Wisconsin. You can search by materials used, products sold, number of employees, species used, city, county, and more. Look up your own town and see what forest products are made there. You might be surprised!

1

LEGACY OF A MAPLE

Not so long ago in a place not so far away, there stood a sugar maple, nearly 200 years old. Each week as people went by to do their chores, go to church and school, or visit family and friends, they passed this tree. Some seldom noticed it, but others always did. Those who did might think about it a bit; some were even heard to remark about it. One day it was gone. Only a large stump remained. If it could hear, this is what it might have overheard.

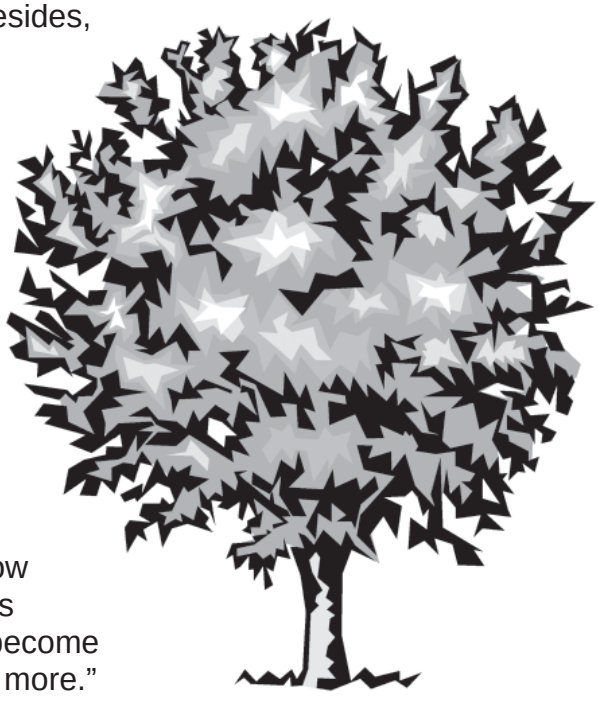
STATEMENT 1: "At long last; from my experience, wood like that brings good money as timber for flooring and making fine furniture. If you put that on your fire, you've got heat for a good long time. This town needs an economic shot in the arm. We should be harvesting more like this one."

STATEMENT 2: "Oh, but I'll miss it. Every year it was one of the trees I tapped. In fact, I could put three or four taps in this one. Riding out here on the sled with the kids in the early spring to put in the taps and collect the sap was something we all looked forward to. I'm afraid that's a tradition that won't last much longer if people keep cutting these mature maples. I sure hope we don't lose too many more of these beauties!"

STATEMENT 3: "I run or bike through this area nearly every day, and I think change is good. I'll enjoy watching new trees grow up to take this one's place and I bet many other people will too. With this oldie gone, these saplings will have a much better chance of making it. I, for one, will be glad to see some new growth around here."

STATEMENT 4: "There are going to be quite a few animals looking for a new home tonight. I'm sure I saw a nest in that tree (there's at least one every year) and I'd be mighty surprised if there weren't a squirrel or two using that big knothole left from when a big branch came down in that storm years ago."

STATEMENT 5: "Good thing someone saw fit to cut this one down. It would have come down on its own soon anyway. Sure wouldn't want that landing on my house! In fact, I told the kids to stay away from it. It really was worrying me. Besides, parts were dead already and just attracting insects. If you ask me, it was a menace to health and safety. Good riddance!"



STATEMENT 6: "All those tree huggers don't make any sense to me. It is our God-given right to use the resources on this earth. People who try to stop progress are only hurting the economy and themselves in the long run. That tree was put on earth for people to use and if that means cutting it down and selling the wood, so be it."

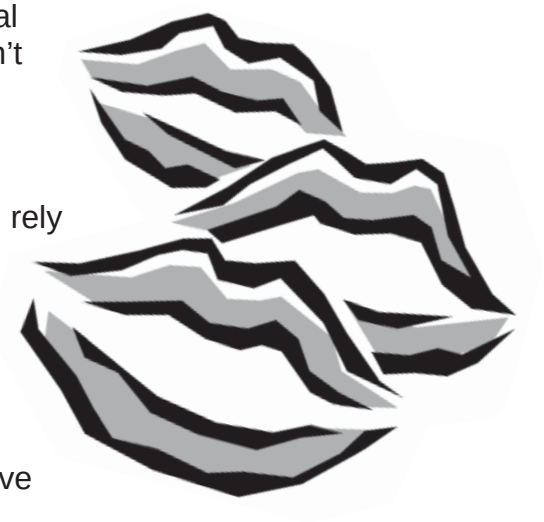
STATEMENT 7: "When I take my third-grade class out to learn to identify trees, we always stop at this maple to notice its five-pointed leaves and opposite branches. I know there are others, but from what I know of the area this was the finest example around. I guess I'll adapt and change my route, but coming here had become something of a tradition. It just won't be the same any more."

THE SPEAKERS SPEAK
(ABOUT THEMSELVES)

SARAH T. SAPP: "I suppose I should care a little bit more about money, but I don't. What really matters to me is my family and the traditions that make living in a small town like this special. We moved here 15 years ago after starting our married life in Milwaukee. We wanted to be able to know our neighbors, walk to most places, and live in a beautiful wooded setting."

JEBADIAH SAWTOOTH: "Trees provide us with resources necessary to our survival and economy. I believe that God gave us the right to use these resources to our fullest benefit. It is important that we live by the beliefs upon which we were raised. My parents always taught me that being a good person means contributing to society. By helping to cut up this tree and haul it away I'm doing my part."

ETHAN BIGBUCKS: "I'm 47 years old and heard my parents' stories about the Depression all the while I was growing up. We've got to put our financial security first. It's not that I'm broke or anything, but it doesn't take much to change things in a hurry. People get too emotional and don't want to look at things realistically."



KERRY LERNED: "I might seem like a bit of a stick-in-the-mud to some folks around here, but I think they've come to rely on me and would miss it if I changed much. Who else can they count on to do story hour at the library every Wednesday in the summer? Who do they come to every time they find an injured animal or want to know the name of a plant in the woods? Who is always there to organize a fund raiser or get the local youth ready for a parade? I may be predictable, but I know this town and I love it. I'd do just about anything to keep it the way it is."

KEVIN O'NATURALLE: "Some people think that you have to be some sort of geek to care about nature. Well, I'm not convinced of that. Look around this town and you'll see at least one bird feeder at nearly every home. Not that they all know what they're seeing, but they still like the color and movement and you can't help but figure out a little about breeding and migration as you watch from season to season. Understanding the environment doesn't come just from books. It's all about being a good observer."

ANGIE SAEFGARD: "Maybe I get too concerned about things, but when it comes to my kids, I don't care what people think. I've had asthma all my life and now I seem to be getting arthritis. It isn't fun not being able to run around like your friends. So far, my kids seem to be pretty healthy, but I'm not taking any chances. They wear helmets when they bike or skateboard, SPF 30 sunscreen whenever they go outside, and a good dose of insect repellent throughout the summer."

STEVEN B. FIT: "It matters to me that I live an active and healthy life. Why can't people see that that's important for other living things, too? It's great to breathe the good clean air we have here and I know the trees play a big part in keeping it that way. Nature needs to be in balance and if that means a fine old tree needs to go in order for new ones to thrive, so be it."

3

LEGACY OF A MAPLE INFO SHEET

Group Members_____

In the chart below, place the name of the speaker (from *The Speakers Speak* page) beside the number of the statement you think they made. In the next column, identify the value(s) expressed in each statement and in the final column identify the factor(s) that influenced the speakers.

STATEMENT NUMBER	**SPEAKER NAME**	**VALUE(S) EXPRESSED IN STATEMENT** Aesthetic (A) • Cultural (C) Economic ($) • Recreational (R) Educational (Ed) • Ecological (Eco)	**FACTOR(S) INFLUENCING SPEAKERS** Wealth (W) • Culture (C) • Religion (R) Health (H) • Ecological Knowledge (E) Personal Experience (P)
1			
2			
3			
4			
5			
6			
7			

WISCONSIN FORESTS AND COMMUNITIES, THEN & NOW

Forests and the forest industry have played a role in shaping Wisconsin's environment and communities since early logging days. (Even earlier, when you consider Native American cultures.) On the other hand, human activities have also influenced (and continue to influence) our forests. As you answer the following questions, try to pick up clues about the influences of forests on the economy, society, and culture of our state and how those, in turn, affect forests.

Group Members_____

1. Westward migration and settlement was occurring rapidly in the early to mid-1800s. Wisconsin's settler population increased from 300 in 1830, to 30,000 in 1840, to 300,000 in 1850. How did that affect the demand for lumber? How did the availability of lumber make migration more likely?

_____

_____

2. Some of the earliest mill towns in Wisconsin were Chippewa Falls, DePere, Eau Claire, Fond du Lac, Menasha, Mosinee, Neenah, Nekoosa, Oshkosh, Plover, Stevens Point, and Wisconsin Rapids. Locate these on a state map. What do you notice is similar about all their locations?

_____

_____

3. Many of these towns have similar industries today. What is that industry? Why is the river still important?

_____

_____

4. The most popular trees to cut in the early logging days in Wisconsin were the white pines. Besides growing tall and straight, they float on water. How does that tie in with your answer to #2?

_____

_____

WISCONSIN FORESTS AND COMMUNITIES, THEN & NOW

5. After the 1870s, mills no longer needed to be near water. Why not? How did that affect settlement patterns in Wisconsin?

_____

_____

6. Some of the earliest people to come to Wisconsin's forests were lumbermen from the Eastern United States. Why do you think they left where they had been?

_____

_____

7. Later immigrants came from Northern Europe (Germany, Ireland, and the Scandinavian countries). Why does this make sense? What problems might there be with having people working together from so many different places?

_____

_____

8. The nature of early lumber practices led to a "boom-and-bust" sort of economy. What do you think this means?

_____

_____

9. Forests still support the economy of many towns in Wisconsin today. What types of industry related to forests exist in Wisconsin? What is necessary to ensure these towns don't experience a "bust" economy?

_____

_____

10. Early timber harvesting was done with axes and two-man crosscut saws. Lumberjacks worked six days each week from daylight until dark. What kinds of skills and qualities would you need for this work? Who do you think the lumberjacks would usually be (male/female, married/single, younger/older, etc.)?

_____

_____

WISCONSIN FORESTS AND COMMUNITIES, THEN & NOW

11. Since the places where most lumber and mill operations took place were basically wilderness and not near established towns, there weren't places for the men to live to begin with. Sometimes a lumber company would build a "company town" in which everything was owned by the company (stores, banks, homes, etc.) What would be the advantages and disadvantages of this? What do you think happened to many of these towns once most of the timber in that area had been cut?

12. Cutting technology has changed over time. What are some of the newer ways of harvesting? What equipment is used? How does that affect the lives of loggers? How does it affect the amount of wood cut and the time to do so?

13. By the early 1900s, most of the timber had been logged and the resulting "cutover" land was sold by railroad companies, lumber companies, and land dealers. A new wave of immigrants came to Wisconsin hoping to turn this into farmland. How were these immigrants different from the earlier loggers (in terms of gender, age, marriage, etc.)? What kinds of problems do you think they ran into?

14. Because farming the cutover was so difficult, and because of factors related to World War I and the Depression, many farms and farm towns were abandoned by the late 1920s. Many of these reverted to the state or federal government because people were unable to pay their taxes. How is some of this land in public ownership currently used? (Hint: Look carefully at the northern third of a Wisconsin state map.)

15. In the early lumber days, the forests were thought of as an endless resource. The trees were cut from the land and when more were needed people just moved to a new area. How have people's attitudes toward forests changed today?