



**The  
Changing  
of the  
Land:  
A Wisconsin  
Forest History  
Unit**

**Central Wisconsin Environmental Station  
University of Wisconsin - Stevens Point  
College of Natural Resources**



**A Product of the Central Wisconsin Environmental Station**

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## The Changing of the Land: A Wisconsin Forest History Unit Lessons

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### **Lesson 1 - Wisconsin's Early Forests and Its Inhabitants...24**

Students will learn about Wisconsin's forests before European settlement. They will act out the concept of forest succession, learn about, illustrate, and present ways in which Native Americans of Wisconsin used forest resources, and discover the beginnings of forest management in Wisconsin.

## **Lesson 2 - Forestry Needs More Than Trees...43**

Much more than just trees were needed for the early logging that took place in Wisconsin. The focus of this lesson will be on the need for transportation of logs, the people involved in the logging process, and company towns that sprung up in Wisconsin. Students will conduct experiments to help them understand the importance of wood characteristics, design a company town, and discover how difficult the language barrier could be for new immigrants.

## **Lesson 3 - The Logging Process...52**

The lumbering era of Wisconsin was an exciting time. This lesson will show the sequence of turning a raw material (trees) into a finished product (lumber). Students will hear the adventures of a northern Wisconsin tree, do an activity that will demonstrate why log stamps were so important, and put in order all of the people that were involved in turning a tree into lumber.

## **Lesson 4 - Lumberjack Life...65**

The logging days were a colorful time in history for those who lived in the lumber camps. The men worked long hours during the winter months. Secluded in camps, far from town, a unique language and creative entertainment were born. Students will learn about life in a lumber camp by hearing tall tales told by lumberjacks, playing lumberjack games, and using lumberjack lingo.

## **Lesson 5 - Farming the Cutover and Wisconsin Ghost Towns...79**

Following the sound of the axe and the saw was the aftermath of the forests' removal. The great forests of the northwoods had been reduced to slash and bare soil. In this lesson, students will learn about attempts made to farm the cutover land and the ghost towns that resulted from loss of resources. They will learn about the trials of farming through a "reader's theater" piece, write letters from the perspective of an inhabitant of the cutover land, and read about three of Wisconsin's ghost towns.

## **Lesson 6 - The Peshtigo Fire...95**

The Peshtigo fire took more lives than any other fire in American history. Part of its cause was irresponsible use of the forests surrounding Peshtigo, Wisconsin. Students will color code a navigation route, create a mileage "key," and figure out the shortest route to Peshtigo, Wisconsin from their school. They will then act as travel agents and generate a "trip tic" to Peshtigo. Finally, they will read letters from a nine-year-old survivor of the fire.

## **Lesson 7 – Politics and Forestry Beginnings In Wisconsin...113**

There were forward thinkers in Wisconsin who recognized the need to protect forests in the mid-1800's and early 1900's. It wasn't until the early 1920's, however, that forestry became firmly established in the state. Students will learn about two of Wisconsin's early forest protection advocates, debate the pros and cons of forestry in the 1920's, and learn about both sides of the fire suppression debate by reading about these topics aloud in class and playing a forest history "Jeopardy!" game.

## **Lesson 8 – Rebuilding Our Forests...123**

Planting new trees after the forests of Wisconsin had all been cut down was not an easy task. It took a lot of work and a lot of thought. In this lesson, students will create their own "slide show" to help them understand who was involved in the replanting of Wisconsin's forests.

## **Lesson 9 – Forest Products and Technology...129**

Wood and other forest products continue to be heavily used in our everyday lives. The Forest Products Lab (part of the U.S. Forest Service), located in Madison, Wisconsin, researches these products in order to discover how we can best use them. Students will learn about the work done at the Forest Products Laboratory by acting as wood scientists.

## **Lesson 10 – Managing For the Future...136**

Ideas we have today about managing our forests for the future are very different than those of the past. Students will take part in a sustainability model, do a multiple-use management role-play, and learn about how they can make a difference in their own backyard.

## **The Changing of the Land Informational Support**

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**References** **154**

**Resources** **156**



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# The Changing of the Land Initiative

Wisconsin schools are mandated to teach Wisconsin History and Environmental Education as part of the fourth grade curriculum. More specifically, Wisconsin's Model Academic Standards in Social Studies state that "students need to understand their historical roots and how past events have shaped their world. In developing these insights, students must know what life was like in the past and how things change and develop over time. Reconstructing and interpreting historical events provides a needed perspective in addressing the past, present, and future." Furthermore, Wisconsin's Model Academic Standards in Environmental Education state that by the end of fourth grade, students should be able to "apply ideas of the past, present, and future to specific environmental issues."

It is often difficult to thoroughly cover all of the standards in the classroom. In addition, environmental education is often a topic in which adequate training had not been provided and which is, therefore, often overlooked. The Changing of the Land: A Wisconsin Forest History Unit will help fourth grade students and teachers in Wisconsin meet state standards.

The purpose of this curriculum is to have every fourth grade student in Wisconsin understand and appreciate the great logging legacy of their state. Much of Wisconsin has been shaped by the logging that took place and still takes place here. History lessons are often dull to students who cannot see a connection between the material they are learning and their own lives. This forest history curriculum is meant to bring the history of Wisconsin's forests alive as students meet ordinary people throughout history through stories, learn about how forestry shaped the communities around them, and think about what needs to be done to protect the future of their forests.

Wisconsin forests and forestry are ideal curriculum topics. The State's forest resources helped determine much of its settlement, infrastructure development, and economy. Forestry can be used as a framework that will take students back to pre-European settlement days and then lead them to the present. Finally, it easily lends itself towards looking at how the past has shaped our present and at forest management strategies to create a sustainable future.

Finally, this curriculum is aimed at teaching every student. It incorporates multicultural views of Wisconsin's logging history in order to present an accurate and rich portrayal of the past. The activities students do to help them understand history incorporate language arts, mathematics, science, and art. In addition, it incorporates many teaching methods in order to appeal to students with many different learning styles. It is our hope that each and every student will become connected with the history and environment of their state through these lessons!



# How To Use This Curriculum

There are a lot of forestry curricula out there. How do you choose the right one? How do you get the most out of the limited time you have to teach your students? You are lucky to be a fourth grade teacher and have *The Changing of the Land: A Wisconsin Forest History Unit* at your fingertips!

As a fourth grade instructor it is your job to teach your students Wisconsin state history. You have also been instructed to infuse environmental education into the curriculum. There are many worthy environmental education curricula, but most are meant to be used as separate lessons. *The Changing of the Land* is different because it is a unit-based curriculum. You do not need to pick and choose which lessons to teach to augment your history lessons. It stands alone.

Use this curriculum as a portion of your Wisconsin state history for the year. It gives a complete look at the history of Wisconsin's forests from before statehood to today. Each lesson builds on what students have learned in the previous lessons. There are reading passages that can be used in your language arts time block, and vocabulary lists that can be used for spelling tests while you are teaching the curriculum.

Everyone designs his/her classroom and instruction differently, and *The Changing of the Land* leaves plenty of flexibility for how you teach. You could spend a few days doing nothing but *The Changing of the Land*, or you could spend two weeks on the lessons, doing one lesson each day. The choice is yours. We invite you to use it as it best suits your students needs and your teaching style. Enjoy teaching *The Changing of the Land: A Wisconsin Forest History Unit*!





# The Changing of the Land Field Experience

But wait...that's not all! Bring your fourth graders to the Central Wisconsin Environmental Station for The Changing of the Land Field Experience. The Central Wisconsin Environmental Station is located in Amherst Junction, about twenty miles east of Stevens Point, Wisconsin. It is a residential environmental center that is part of the University of Wisconsin at Stevens Point. This three-hundred acre field station on glacial Sunset Lake serves university students, K-12 students, and teachers by providing quality environmental education instruction and programming.

The Changing of the Land program at the Central Wisconsin Environmental Station is a one-day field experience that will bring Wisconsin's forest history alive for your students. They will hear from people of Wisconsin's past, learn how to age trees, and make plans for a sustainable future. For more information, please contact the Central Wisconsin Environmental Station at 715-824-2428 or visit our website at <http://www.uwsp.edu/cnr/cwes>.



Do you need more Changing of the Land: A Wisconsin Forest History Unit CD's? If you would like to order one for yourself or a fellow educator, please e-mail us at [cwes@uwsp.edu](mailto:cwes@uwsp.edu) with the following information:

Name

School

Address

Number of copies

If you do not have access to e-mail, please mail your request to:

Central Wisconsin Environmental Station

10186 County Road MM

Amherst Junction, WI 54407



# The Changing of the Land

## Lesson Layout

### **In a Nutshell**

This section is a brief description of the lesson. It tells you what the lesson is about and what your students will do in the lesson.

### **Concepts**

Concepts are the big ideas.

They are the broad concepts that your students should understand after taking part in the lesson.

Concepts are placed in the order that they come across in the lesson.

They are not “things” that the students achieve.

### **Objectives**

Objectives are measurable things that the students should achieve by the end of the lesson.

### **State Standards**

This section lists the Wisconsin Model Academic Standards that the lesson covers for English Language Arts, Mathematics, Science, Social Studies, and Environmental Education at the fourth grade level. A thorough description of how each lesson addresses each standard is included in the following section of the introduction.

### **Total Estimated Time**

This is a time estimate of how long the entire lesson would take for you to teach in your classroom. It includes the lesson introduction, all of the lesson activities, and the lesson conclusion.

### **Materials**

Includes everything that you, the teacher, will need to teach the lesson.

### **Teacher Preparation**

This includes anything you, the teacher, will need to accomplish before teaching the particular lesson. It includes items that will need to be prepared as well as worksheets that might need to be copied for your students.

### **Background Information**

The Changing of the Land: A Wisconsin Forest History Unit is for every fourth grade teacher in Wisconsin. Do not worry if you are lacking background in forest history. The background information given in each lesson provides you with more information than you will need to teach these lessons. It will help you feel completely prepared to teach and answer questions that your students might pose.

**Activity Introduction**

This section suggests how you can begin introducing the concepts of your lesson and get your students really interested. It often consists of a really cool questions or very brief game or activity. It is like a “grabber” to get your kids into learning the topic of that particular lesson. Introductions are no more than ten minutes.

**Activity**

Each lesson is broken up into several activities. This is the meat of the lesson. There is a suggested amount of time given with each activity to help you plan it into your schedule.

**Conclusion**

The conclusion provides a method for tying the entire lesson together. It takes no longer than ten minutes.

**Extension Activities**

These are activities that provide non-essential information but still add to the understanding of the lesson. You can pick and choose what extension activities to do.

**Evaluation**

This section will be used to determine whether students learned the concepts and have achieved the objectives for the lesson. They are not in the form of a typical test format. It is hoped that the evaluation methods in this curriculum will address students of all learning styles.

**Resources**

These are resources that you might find useful for additional activities or information in your classroom.

**References**

These are the materials the author of the lesson got information from in order to develop the lesson.

**Inserts**

These are materials that you will need to teach the lesson including worksheets, readings, etc.



# Wisconsin's Model Academic Standards

## Lesson 1

### English Language Arts

#### C – Oral Language

C.4.1 – Students will present information on Native American forest use to the class.

C.4.2 – Students will process information given by their peers about Native American forest use

C.4.3 – Students will participate in discussions about succession, Native American forest use, and how fire was used to manage forests.

#### D – Language

D.4.1 – Students will learn vocabulary having to do with the subjects in Lesson 1.

### Social Studies

#### A – Geography: People, Places, and Environments

A.4.4 – Students will read about and present information on how Native Americans tribes in Wisconsin interacted with their natural environment.

#### B – History: Time, Continuity, and Change

B.4.1 – Students will learn what artifacts are and how they help us understand the past.

B.4.4 – Students will compare and contrast forest use today with early Native American forest use.

#### E – The Behavioral Sciences: Individuals, Institutions, and Society

E.4.11 – Students will read a Native American folktale and use it to help them determine how a particular Native American tribe in Wisconsin interacted with the natural environment.

## Lesson 2

### English Language Arts

#### C – Oral Language

C.4.3 – Students will participate in discussions about log transportation and company towns.

#### D – Language

D.4.1 – Students will learn vocabulary having to do with the subjects of Lesson 2.

#### F – Research and Inquiry

F.4.1 – Students will research wood characteristics.

### Mathematics

#### E – Statistics and Probability

E.4.1 – Students will deduce why pine was cut first in Wisconsin's Northwoods based on their observations of wood characteristics.

### Science

#### A – Science Connections

A.4.3 – Students will collect data about different types of wood.

#### C – Science Inquiry

C.4.2 – Students will observe what happens to different kinds of wood in water.

## **H – Science In Social and personal Perspectives**

H.4.1 – Students will describe how railroads helped in wood transportation and aided in the development of the state of Wisconsin and the rest of the country.

### **Social Studies**

#### **A – Geography: People, Places, and Environments**

A.4.4 – Students will learn about how lumberjacks interacted with the environment.

A.4.7 – Students will read about where Wisconsin’s wood was used.

### **Environmental Education**

#### **A – Questioning and Analysis**

A.4.1 - Students will research wood characteristics.

A.4.2 – Students will make predictions and then observe what different types of wood will do in water.

#### **B – Knowledge of Environmental Processes and Systems**

B.4.8 – Students will be able to identify wood as a natural resource.

## **Lesson 3**

### **English Language Arts**

#### **A – Reading/Literature**

A.4.1 – Students will read a story aloud that is from a tree’s point of view to learn about the logging process.

#### **C – Oral Language**

C.4.3 - Students will participate in discussions about how the logging process was conducted in the late 1800’s.

#### **D – Vocabulary**

D.4.1 - Students will learn vocabulary having to do with the subjects in Lesson 3.

### **Mathematics**

#### **A – Mathematical Processes**

A.4.3 – Students will connect mathematics and forestry while completing the “Lumber and Numbers” worksheet.

#### **B – Number Operations and Relationships**

B.4.5 - Students will use addition, subtraction, multiplication, and division while completing the “Lumber and Numbers” worksheet.

### **Social Studies**

#### **A – Geography: People, Places, and Environments**

A.4.4 – Students will identify how each kind of lumberjack job interacted with their natural environment.

#### **B – History: Time, Continuity, and Change**

B.4.4 – Students will compare and contrast logging practices today with those of the late 1800’s.

### **Environmental Education**

#### **B – Knowledge of Environmental Processes and Systems**

B.4.8 – Students will be able to identify wood as a natural resource.

## **Lesson 4**

### **English Language Arts**

#### **C – Oral Language**

C.4.3 – Students will participate in discussions about lumberjack life and culture.

**D – Vocabulary**

D.4.1 - Students will learn vocabulary having to do with the subjects in Lesson 4.

D.4.2 – Students will recognize, understand, and be able to use lumberjack lingo.

**Social Studies**

**B – History: Time, Continuity, and Change**

B.4.3 – Students will listen to and write lumberjack folktales.

**E – The Behavioral Sciences: Individuals, Institutions, and Society**

E.4.11 – Students will listen to and write tall tales that express the culture of the lumberjack.

**Lesson 5**

**English Language Arts**

**A – Reading/Literature**

A.4.1 – Students will read about some of Wisconsin’s ghost towns.

**B – Writing**

B.4.1 – Students will create advertisements to sell cutover land and write letters from the point of view of somebody who lived on the cutover land.

**C – Oral Language**

C.4.3 – Students will participate in discussions about the cutover land, farming the cutover, and Wisconsin’s ghost towns.

**D – Vocabulary**

D.4.1 - Students will learn vocabulary having to do with the subjects in Lesson 5.

**Social Studies**

**A – Geography: People, Places, and Environments**

A.4.4 – Students will describe through a letter-writing exercise how inhabitants of the cutover land interacted with their natural environment.

A.4.8 – Students will identify how humans created the cutover area.

**B – History: Time, Continuity, and Change**

B.4.4 – Students will compare and contrast living on the cutover land in the early 1900’s with living in Wisconsin today.

**Environmental Education**

**A – Questioning and Analysis**

A.4.4 – Students will create advertisements to sell cutover land and write letters from the point of view of somebody who lived on the cutover land and share them with the class.

**B – Knowledge of Environmental Processes and Systems**

B.4.3 – Students will identify wood as a renewable resource.

**Lesson 6**

**English Language Arts**

**A – Reading/Literature**

A.4.1 – Students will read letters of a Peshtigo Fire survivor in order to help them understand the event.

**B – Writing**

B.4.1 – Students will write a newspaper account covering the Peshtigo Fire.

### **C – Oral Language**

C.4.3 – Students will participate in discussions about the Peshtigo Fire.

### **D – Vocabulary**

D.4.1 - Students will learn vocabulary having to do with the subjects in Lesson 6.

### **Social Studies**

#### **A – Geography: People, Places, and Environments**

A.4.2 – Students will locate Peshtigo, WI on a map and figure out how to get there from where they live.

A.4.4 – Students will identify how human interactions with the natural environment led to the Peshtigo Fire.

A.4.8 – Students will identify how humans caused major changes in the community in and around Peshtigo, WI.

#### **B – History: Time, Continuity, and Change**

B.4.3 – Students will examine letters of a Peshtigo Fire survivor and relate them to historical events.

### **Environmental Education**

#### **A – Questioning and Analysis**

A.4.4 – Students will communicate their understanding of the events surrounding the Peshtigo Fire through a newspaper article.

## **Lesson 7**

### **English Language Arts**

#### **A – Reading/Literature**

A.4.1 – Students will read aloud about political events in Wisconsin’s forest history.

### **C – Oral Language**

C.4.3 – Students will participate in discussions about forest management and some of its major leaders in the state.

### **D – Vocabulary**

D.4.1 - Students will learn vocabulary having to do with the subjects in Lesson 7.

### **Social Studies**

#### **B – History: Time, Continuity, and Change**

B.4.6 – Students will explain the significance of Arbor day.

B.4.7 – Students will identify Increase Lapham and E.M. Griffeth as leaders in Wisconsin forest conservation.

#### **C – Political Science and Citizenship: Power, Authority, Governance, and Responsibility**

C.4.4 – Students will explain how Wisconsin’s state government had aided in forest conservation.

#### **E – The Behavioral Sciences: Individuals, Institutions, and Society**

E.4.8 – Students will describe the beliefs of those for and against state forests in the early 1900’s.

## **Lesson 8**

### **English Language Arts**

#### **C – Oral Language**



C.4.1 – Students will create and present a “slide show” about the replanting of Wisconsin’s forests.

C.4.2 – Students will listen and learn about replanting in Wisconsin from the presentations of their peers.

C.4.3 – Students will participate in discussions about the replanting of Wisconsin’s forests.

#### **D – Vocabulary**

D.4.1 - Students will learn vocabulary having to do with the subjects in Lesson 8.

#### **Social Studies**

##### **A – Geography: People, Places, and Environments**

A.4.4 – Students will describe through a “slide show” presentation how Wisconsin’s forests were replanted.

A.4.8 – Students will describe through a “slide show” how projects in Wisconsin’s forests aided in forest conservation.

##### **B – History: Time, Continuity, and Change**

B.4.2 – Students will construct a timeline in the classroom illustrating the events surrounding the replanting of Wisconsin’s forests.

B.4.4 – Students will compare and contrast life during the Depression with today’s lifestyle.

### **Lesson 9**

#### **English Language Arts**

##### **C – Oral Language**

C.4.1 – Students will communicate their scientific findings from Forest Products Laboratory experiments to the rest of the class.

C.4.2 – Students will learn about the experiments of their peers during class presentations.

C.4.3 – Students will participate in discussions about the Forest Products Laboratory in Madison, WI.

##### **D – Vocabulary**

D.4.1 - Students will learn vocabulary having to do with the subjects in Lesson 9.

##### **F – Research and Inquiry**

F.4.1 – students will conduct research and experiments on “railroad ties” to simulate actual research that took place at the Forest Products Laboratory.

#### **Science**

##### **C – Science Inquiry**

C.4.2 – Students will make prediction about what will happen and observe what does happen during experiments.

##### **G – Science Applications**

G.4.1 – Students will experience how Forest Products Laboratory scientists use science and technology in their work at the Forest Products Laboratory.

#### **Social Studies**

##### **A – Geography: People, Places, and Environments**

A.4.4 – Students describe how Forest Products Laboratory scientists research wood conservation and how this affects the environment.

A.4.9 – Students will give examples of how knowledge about wood has led to wood conservation.

**B – History: Time, Continuity, and Change**

B.4.8 – Students will compare and contrast past and present wood technologies.

**Environmental Education**

**A – Questioning and Analysis**

A.4.1 – Students will conduct their own investigations of “railroad ties.”

**B – Knowledge of Environmental Processes and Systems**

B.4.10 – Students will identify the products made with trees that they use every day.

**Lesson 10**

**English Language Arts**

**C – Oral Language**

C.4.3 – Students will participate in discussions about sustainable management, multiple use, and urban forests.

**D – Vocabulary**

D.4.1 - Students will learn vocabulary having to do with the subjects in Lesson 10.

**Social Studies**

**A – Geography: People, Places, and Environments**

A.4.4 – Students will identify how various projects cause humans to interact with the environment and how they interact with the environment around them in their own area.

**B – History: Time, Continuity, and Change**

B.4.10 – Students will explain the history, culture, and tribal sovereignty of the Menominee peoples in Wisconsin.

**Environmental Education**

**B – Knowledge of Environmental Processes and Systems**

B.4.3 – Students will identify wood as a renewable resource.

B.4.8 – Students will give examples of natural resources that forests affect.

**C – Environmental Issue Investigation Skills**

C.4.2 – Students will apply what they have learned throughout the curriculum about the past and present of Wisconsin forests to make decisions about the future of a forested piece of land.

C.4.3 – Students will identify people and groups that might have interest in forested land.

C.4.4 – Students will identify what kinds of decisions, compromises, and actions would need to be carried out in order for several groups to be able to work with a piece of forested land.

**D – Decision and Action Skills**

D.4.1 – Students will demonstrate knowledge of the decision-making process by suggesting alternative uses for forested land that more than one group can agree with.

D.4.2 – Students will identify what actions on forested land are sustainable and which are not.



# Master Materials List

## **Lesson 1**

Paper  
Crayons, markers, or other drawing materials  
Overhead of Wisconsin vegetation map  
Overhead projector  
Copies of “Manabozho and the Maple Trees” (Insert 1) for the class  
Copies of Native American Nature Cards

## **Lesson 2**

Overhead projector  
Wood pieces or household objects  
Rope  
Paper  
Crayons, colored pencils

## **Lesson 3**

Bucket  
Candy (optional)

## **Lesson 4**

A selected tall tale to read (check the 398.2 section of your library or use the tall tale provided in Insert 4.1)  
A copy of the Paul Bunyan Breakfast menu for each student  
A copy of A Day in the Life of a Lumberjack for each of the two readers  
Six strands of different colored yarn  
Broom  
Long, stuffed sock  
Blindfold  
Tree cookies (optional)  
Blanket (optional)  
Tape player and lumberjack music (optional)  
Logs and rope (optional)  
Cast iron skillet (optional)  
Bandanas (optional)

## **Lesson 5**

Drawing paper  
Drawing materials  
Photo of advertisement (Insert 5.1)

**Lesson 6**

Copy of a “Trip-Tic” from AAA (optional)  
Wisconsin maps with town names, including Peshtigo, Wisconsin for each student (be sure to add your own town to the map before running off copies)  
Colored pencils, fine-tip markers, other drawing materials  
Lined and plain paper  
Overhead projector  
Copies of the four letters for each student

**Lesson 7**

Picture of forest (Insert 7.1)  
Picture of Cutover (Insert 7.2)  
Copies of Inserts 7.3 and 7.4 for your students

**Lesson 8**

Paper  
Drawing materials

**Lesson 9**

Wrapped ream of paper  
8.5x11 paper  
Scissors  
Tool box with: plastic bags, plastic wrap, duct tape, sponge, paper clips, scissors, glue, thumbtacks  
Fake railroad ties  
Glue  
Wax paper  
Lab coats  
Water tubs

**Lesson 10**

M&M’s or other small candies (be aware of chocolate allergies)  
Bowl  
Paper  
Crayons, colored pencils  
String and tape (if doing web activity)  
Overhead of Menominee Reservation from space  
Task cards A, B, and C for your students  
Overhead of Map A



# Vocabulary List

## Lesson 1

**Archaeology** – the scientific study of materials from past human life and activities

**Canopy** – the highest layer of a forest

**Cradleboard** – a wooden object that babies can be placed in to be carried around or propped up

**Culture** – the beliefs, social customs, and material items of a racial, religious, or social group

**Excavate** – to dig out and remove

**Glacier** – a large body of ice slowly moving down a slope or spreading outward on a land surface

**Manage** – to purposely change something for one's own purpose

**Primary succession** – succession that occurs on completely bare land, such as after a volcano or glacier

**Retreat** – to move away

**Secondary succession** – succession that occurs after a disturbance such as a windstorm or fire

**Segregation** – forced separation of two or more groups

**Static** – showing little change

**Succession** – the change in an ecosystem from one group of plants and animals to another as each group changes their environment

**Tension zone** – an area where two different ecosystems overlap

**Wigwam** – a shelter typical of the Native Americans of the Great Lakes region made from rounded poles with bark over them

## Lesson 2

**Company town** – a town in which all of the businesses and buildings are owned and run by a single company

**Ethnic** – relating to a race or large group of people that share common features or customs

**Experiment** – to perform tests under controlled conditions to discover something

**Hardwood** – wood from a non-coniferous tree that is usually more dense and so sinks lower in the water than other wood

**Immigrant** – a person who comes from another country to live

**Mill** – a building or collection of buildings with machinery in them to make something such as flour or lumber

**Softwood** – wood from a coniferous (cone-bearing) tree that usually floats higher in the water than other wood

**Transportation** – a way to travel from one place to another such as by car, ship, etc.

## Lesson 3

**Bucker** – the person who cut the tree trunk up into logs

**Crosscut saw** – a saw designed to cut across the grain of wood; what lumberjacks used in the 1800's and early 1900's to saw trees down

**Cruiser** – the person who estimates the amount of wood in a forest before it is cut  
**Lumber** – logs sawed up for use  
**Lumberjack** – a logger  
**Notch** – a v-shaped gap  
**River pig** – the person who floats the logs down the river to the lumber mill  
**Road monkey** – the person who spreads hay on icy slopes to make it safe for the sleighs to travel  
**Sawyer** – the person who used a crosscut saw to saw a tree down  
**Scaler** – the person who measures each log down at the river bank and estimates how much wood is there  
**Skidder** – the person who drags the logs out of the forest and loads them onto sleighs  
**Stamper** – the person who pounds the lumber company’s stamp into the end of each log  
**Swamper** – the person who cut the branches off of the tree after it had been cut down  
**Teamster** – The person who brings the loaded sleighs down to the river  
**Top Loader** – the person who stands on top of the logs on the sleigh and arranges them into a pile  
**Undercutter** – the person who cuts a notch on one side of the tree in preparation for cutting it down

#### **Lesson 4**

**Ancestor** – family member who lived many generations before you  
**Boast** – to brag  
**Brogue** – a heavy shoe with nails in the sole  
**Bunkhouse** – the building where all of the lumberjacks in a camp would sleep  
**Cant hook** – a wooden stick with a metal hook on the end used to handle logs  
**Burden** – something heavy that is carried  
**Character** – a person in a story  
**Culture** – the common features of a particular group of people including beliefs, products, and social customs  
**Derrick** – a machine used for lifting heavy objects  
**Exaggerate** – to enlarge a fact past what is actually true  
**Plot** – the main story in a piece of writing  
**Feat** – a large accomplishment  
**Jargon** – the special vocabulary of a certain profession or other group of people  
**Gangplank** – a moveable bridge used to board a ship  
**Gauge** – to measure  
**Heed** – to pay attention  
**Lingo** – the special vocabulary of a certain profession or other group of people  
**Quandary** – a state of puzzlement  
**Resolution** – the part of a story where the main problem has been solved  
**Retort** – to answer angrily  
**Setting** – where something takes place  
**Tall tale** – an incredible story with many exaggerations  
**Vessel** – a boat or ship  
**Wharf** – a structure built along the shore from which people or objects can get onto of off of a boat

## Lesson 5

**Company town** – a town in which all of the businesses and buildings are owned and run by a single company

**Cutover** – what northern Wisconsin was referred to as after all of the trees had been cut

**Desolate** - empty

**Ghost town** – a town that used to be successful but has since been abandoned

**Land speculator** – someone who buys land and then sells it for a higher price

**Natural resource** – a source of money or needed material that comes from nature

**Quarry** – an open area in the ground from which a kind of rock or stone is gotten

**Saloon** – a bar

**Sawmill** – a mill that has sawing machines for lumber

**Slash** – leftover parts of trees that have been cut down

**Timeline** – a visual description of a sequence of events

## Lesson 6

**Color code** – to indicate or instruct by using different colors

**Mileage scale** – a divided line on a map used to show what length on the map is used to show a certain number of miles

**Navigate** – to find one's way

**Sawmill** – a mill that has sawing machines for lumber

**Travel agent** – a person who arranges travel for others

## Lesson 7

**Con** – a negative argument against something

**Crop** – a plant that is grown and harvested

**Legal** – allowable by law

**Politics** – the art or science of government

**Preserve** – an area set aside for the protection of a natural resource

**Pro** – a positive argument in favor of something

**Slash** - leftover parts of trees that have been cut down

**Unconstitutional** – something that goes against the constitution

**Warden** – an official in charge of enforcing certain laws

## Lesson 8

**Crops** – plants that are grown and harvested for food

**Cutover** – what northern Wisconsin was referred to as after all of the trees had been cut

**Great Depression** – a time period in the United States, in the late 1920's and early 1930's, when many people lost their jobs and a lot of money

**Tax delinquent** – overdue in paying one's taxes

## Lesson 9

**Cellulose** – a part of the cell walls of plants

**Collapse** – to fall down suddenly

**Colleague** – a fellow worker

**Conserve** – to keep safe and sound

**Fiberboard** – a wood product made up of strips of wood fiber all with their grains going in the same direction

**Fungi** – a group of lower plants such as mushrooms, mold, and some bacteria

**Grain** – the arrangement of fibers in wood

**Laboratory** – a place where experiments are done

**Oriented strandboard** – a wood product made up of layers of very small fibers; the grain of each layer is opposite that of the layers surrounding it

**Particleboard** – a wood product made up of very small pieces of wood; it can even be made from sawdust

**Plywood** – a wood product made up of several sheets of wood with the grain of each layer going in the opposite direction of the layers on either side of it

**Preservative** – something that keeps things from breaking down or decomposing

**Railroad tie** – a wooden support to which railroad rails are attached

**Slash** - leftover parts of trees that have been cut down

### **Lesson 10**

**Criteria** – standards on which a decision is based

**Insulation** – a material that prevents the transfer of energy

**Menominee** – a Native American tribe native to Wisconsin

**Multiple use** – able to be used for many things

**Pollutants** – something that makes the air, water, etc. dirty

**Renewable resource** – a resource that can be replaced by a natural cycle

**Runoff** – the portion of rain, snow, etc. that reaches streams or other bodies of water

**Sovereign** – one that exercises authority in a certain area

**Sustainable** – able to be kept up at the same pace

**Urban** – in or close to a city

**Urban forest** – the trees within an urban area