



## Academic Standards



**Wisconsin Forestree** addresses Wisconsin Model Academic Standards in Environmental Education , English, Language Arts, Mathematics, Science, and Social Studies. On the following pages, you will find the standards listed by lesson along with how they are met or addressed by each lesson.

### Lesson 1: The Science of Forests and Trees

#### **Environmental Education B.8.4** *Levels of Organization*

Students discover that individuals having exactly the same characteristics make up a species. They learn about the layers of a forest and what role each layer plays in the community.

#### **English Language Arts B.8.1** *Writing to Communicate*

Students use a log book to record information learned.

#### **Science F.8.8** *Populations and Ecosystems*

Students understand the structure of a typical forest as they investigate the layers found within the forest and the interactions between them.

#### **Science F.8.9** *Diversity and Adaptation of Organisms*

Students investigate how species are adapted for the role they play in the forest ecosystem.

### Lesson 2: A Competitive Edge

#### **Environmental Education B.8.6 & B.8.8** *Energy and Ecosystems*

Students investigate interactions between living things as they participate in a role-playing game. Trees compete with each other to establish themselves. The concept of ‘succession’ is addressed.

#### **English Language Arts B.8.1** *Writing to Communicate*

Students write a short autobiography of the life of their tree.

#### **Science F.8.9** *Diversity and Adaptation of Organisms*

Students investigate how environmental changes affect the survival or population growth of individual species of plants and animals. By role-playing tree species, students gain an understanding of how trees compete for resources following an environmental disturbance.

#### **Social Studies A.8.6** *Geography: People, Places, and Environments*

Students experience the effects caused by natural disturbances such as fire, insects, floods, and wind and their impact on the ecosystem.

### Lesson 3: Forests of Wisconsin

#### **Environmental Education A.8.4 & A.8.5** *Questioning and Analysis*

Students use maps to gather and synthesize information to arrive at an explanation for the distribution of forest ecosystems throughout the state.

#### **Environmental Education B.8.2, B.8.6, & B.8.10** *Energy and Ecosystems*

Students learn that succession is a natural process of change over time and that human use of the land over time affects the make-up of natural systems. They identify major forest types in Wisconsin.

#### **English Language Arts B.8.1** *Writing to Communicate*

Students write a paragraph describing the natural influences on Wisconsin’s forest types.

### **Science C.8.2** *Science Inquiry*

Students extract relevant information from a passage about a tree's characteristics in order to fill in a successional diagram.

### **Science E.8.1** *Structure of Earth System*

Using maps of Wisconsin's soils, topography and vegetation, students show where glaciation occurred in Wisconsin during the last ice age.

### **Science E.8.5** *Earth's History*

Students determine the influence that natural divisions in Wisconsin have on forest ecosystems present and learn about the resultant 'tension zone.'

### **Social Studies A.8.1 & A.8.6** *Geography: People, Places, and Environments*

Students use maps to differentiate six natural divisions in Wisconsin and determine the effects these parameters have on forest ecosystems that are present.

## **Lesson 4: Wisconsin Forest History**

### **Environmental Education B.8.10** *Energy and Ecosystems*

Students learn from a reading how human activity can shape the environment.

### **Environmental Education B.8.15 & B.8.24** *Natural Resources and Environmental Quality*

Students learn from a reading that humans have impacted the environment of Wisconsin through resource use. Students create a timeline of forestry history based on the passage they read.

### **English Language Arts A.8.3** *Read and discuss in order to understand human experience*

Students identify common historical and cultural themes by carefully reading the passage.

### **English Language Arts B.8.1** *Writing to Communicate*

Students re-write Wisconsin's logging history by changing one aspect of the story they read.

### **Science E.8.6** *Earth's History*

Students describe the changes in resource use over the past 150 years and explain how conservation efforts came about.

### **Social Studies A.8.4** *Geography: People, Places, and Environments*

Students discuss historical land use in Wisconsin and describe some of its effects on the environment.

### **Social Studies B.8.2, B.8.4, B.8.12** *History: Time, Continuity, and Change*

Students use information and a timeline from the reading to discuss how logging efforts in Wisconsin influenced its development.

## **Lesson 5: Forest Utility**

### **WI Environmental Education A.8.4** *Questioning & Analysis*

Students interpret information provided concerning the use of forest products and the economic value of related employment.

### **WI Environmental Education B.8.14** *Natural Resources and Environmental Quality*

Students identify and examine the utility of Wisconsin's forest resources.

### **WI Mathematics B.8.3 & 8.5** *Number Operations*

Students use their knowledge of mathematics to convert percents to whole numbers and vice versa in an exercise that shows land ownership and economic impact.

### **WI Social Studies D.8.3** *Economics: Production, Distribution, Exchange, Consumption*

After discussing the many uses of Wisconsin's forests, students discuss what economic impacts result from the forest industry, both within the state and on a global scale.

## Lesson 6: Forest Value

### WI Environmental Education C.8.1 *Environmental Issue Investigation Skills*

Students begin to understand what a value is and how differing values can create conflict in environmental issues.

### English Language Arts B.8.1 *Writing to communicate*

Students write a paragraph about how a forest is most valuable to them.

### English Language Arts C.8.3 *Participate effectively in discussion*

Students participate in a discussion about different types of values and how they can lead to conflict.

### Social Studies A.8.11 *Geography: People, Places, and Environments*

Students identify differing values and the effect they have on resource use.

## Lesson 7: Natural Resource Careers: A Game of Life

### Environmental Education B.8.22 *Natural Resources and Environmental Quality*

Students learn about careers related to managing natural resources by participating in “The Game of Life.”

### English Language Arts B.8.1 *Writing to communicate*

Students write a resume for a specific natural resource career field.

### English Language Arts C.8.3 *Participate Effectively in Discussion*

Students contribute to the discussion on forestry careers and within small groups about forestry practices and methods.

### Science G.8.1 *Science Applications*

Students identify the skills they will need for a career in managing natural resources.

## Lesson 8: Forest Management

### Environmental Education A.8.2 & A.8.5 *Question and Analysis*

Students read background information on the land that they are to manage, as well as information regarding specific needs to manage for, then develop a suitable management plan. Students share information with each other, revise their management plans and challenge their personal opinions about land management.

### Environmental Education B.8.16, B.8.17, & B.8.23 *Natural Resources and Environmental Quality*

Through the management activity, students begin to understand the various political, economic and environmental factors that influence land use decisions.

### English Language Arts B.8.1 *Writing to communicate*

Students write about the sources of conflict that arose when forming a management plan and relate these to real life situations that exist.

### English Language Arts C.8.3 *Participate Effectively in Discussions*

Students work in small groups, communicating with each other to share their opinions and goals for the management activity, as well as listening to others.

### Mathematics D.8.2 *Measurements*

Students use math skills to convert acres, miles, and feet during the management activity.

### Science H.8.2 *Science in Social and Personal Perspectives*

Students use consensus to create a management plan that meets differing goals.

## Lesson 9: Forestry Issues Investigation

### **Environmental Education C.8.1 & C.8.3** *Environmental Issue Investigation Skills*

Students identify the issue as well as the people involved, their values, goals and methods of attaining those goals, the decisions reached and the outcomes.

### **Environmental Education D.8.1, D.8.5, & D.8.7** *Decision and Action Skills*

Students use the sample issue to examine how beliefs and values will influence options for addressing environmental issues, determining the type of action to be taken, and dealing with consequences of that action.

### **English Language Arts A.8.1 & A.8.4** *Use Effective Reading Strategies & Read to Acquire Information*

Students use their reading skills to extract relevant information from an article dealing with forestry issues.

### **WI Language Arts C.8.3** *Participate Effectively in Discussions*

Students discuss with classmates the issues addressed in the article, being sure to allow everyone the opportunity to speak.

### **WI Science H.8.1** *Science in Social and Personal Perspectives*

Students decide whether scientific evidence in the articles is relevant or correct, the reliability of the source and how any biases the source may have would affect his/her presentation of the material.

## Lesson 10: Wisconsin Forestry Summit

### **Environmental Education C.8.1 & C.8.3** *Environmental Issue Investigation Skills*

Students identify and evaluate environmental problems and issues presented by the teacher.

### **English Language Arts B.8.1** *Writing to Communicate*

Students reflect on knowledge and skills developed during the Wisconsin Forestry unit and write a short essay detailing how the information might be used through their own life.

### **English Language Arts C.8.3** *Participate Effectively in Discussion*

Students draw on all they have learned in this unit and contribute appropriate comments to the discussion.

### **Science A.8** *Science Connections*

Students explain how the management theories in forestry developed, what their limitations are and how they might change again in the future.

### **Science C.8.1 & C.8.11** *Science Inquiry*

Students ask themselves and each other further questions about the future of forestry and resource use in Wisconsin and around the world.

### **Science F.8.10** *Diversity and Adaptations of Organisms*

Students predict how trends in forestry and resource management will affect the environment and their quality of life as the human population continues to grow.

### **Science H.8.2** *Science in Social and Personal Perspectives*

Students pose possible solutions to environmental problems and work together to achieve consensus.

### **Social Studies A.8.11** *Geography: People, Places, and Environment*

Students give examples of the causes and effects of global resource use and how those things will affect Wisconsin's people, plants, wildlife, and land.

### **Social Studies D.8.3 & D.8.11** *Economics: Production, Distribution, Exchange, Consumption*

Students describe Wisconsin's role in the global economy and environment, and how their personal decisions can affect the environment, both in Wisconsin and around the world.