




APPENDIX

GLOSSARY	103
WISCONSIN MODEL ACADEMIC STANDARDS	104
WISCONSIN MODEL ACADEMIC STANDARDS (CHART)	109
SUBJECT AREAS	110
MULTIPLE INTELLIGENCES	111
LESSON CONNECTIONS TO THE <i>LEAF CONCEPTUAL GUIDE</i>	112
LESSON FEEDBACK FORM (K-1 UNIT)	113





GLOSSARY

ARBORIST: A person who takes care of individual trees by pruning, removing, or treating them.

BASIC NEEDS: The minimum conditions that need to be met for something to continue to live. The five basic needs of animals are food, water, shelter, space, and air.

COMMUNITY: The plants and animals living in an area.

CROWN: The part of a tree with live branches and leaves.

ECOSYSTEM: An area that contains living and nonliving things interacting with each other. Ecosystems can be of any size (e.g., forest, meadow, log).

FOOD: What a living thing eats for energy.

FOREST: An ecosystem that is characterized by a dominance of tree cover and contains a variety of other organisms (e.g., other plants, animals).

FOREST PRODUCTS: Things we use that started as something in a forest.

HABITAT: A place where a plant or animal can get the food, water, and shelter it needs to live.

LIFE STAGES: The stages a tree goes through during its life (germination, growth, maturity, reproduction, decline, and death).

NATIVE AMERICANS: The first people to live in our country and state.

NUTRIENTS: The things in the soil that a tree needs to live and grow.

ORCHARD OWNER: A person who raises fruit trees in order to pick the fruit and sell it.

PARK RANGER: A person who works in a park to protect the park and the people who use it.

PRODUCT: Something used by humans that we have made from something else (a resource).

RESEARCH ECOLOGIST: A person who researches the interactions of forest parts and the impacts of human actions.

RESOURCE: Something that can be used by animals, including humans.

ROOTS: The part of a tree that works underground to get water and nutrients for a tree to use.

SETTLER: A person who came from another place to make a new home.

SHELTER: The materials that a living thing uses to keep itself safe from weather and other elements.

SPACE: The area that a living thing needs to grow.

TRUNK: The part of a tree that the crown grows on and connects the crown to the roots (often called the stem).

URBAN FOREST: The trees and other living things in a city, town, or neighborhood.

VALUE: To decide something is important.

WILDLIFE BIOLOGIST: A person who researches wildlife and their habitats and takes action to improve those habitats.



WISCONSIN MODEL ACADEMIC STANDARDS

LEAF lessons address Wisconsin Model Academic Standards in Agriculture Education, Environmental Education, Language Arts, Mathematics, Science, Social Studies, and Visual Arts. On the following pages, you will find the standards listed by lesson along with an explanation of how they are addressed by each lesson.

LESSON 1: TREE HARDWARE

LANGUAGE ARTS C.4.2

Oral Language

Standard is: Listen to and comprehend oral communications.

- Follow basic directions
- Identify and summarize key points of a story or discussion
- Retell stories and reports of events in proper sequence
- Follow sequence in plot and character development, predict outcomes, and draw conclusion
- Recall the content of stories after hearing them, relate the content to prior knowledge, and answer various types of factual and interpretive questions about the stories

By listening to *The Acorn* story and completing Student Page – *Tree Life Stages*, students will learn to follow basic directions, summarize key points in proper sequence, and follow a plot.

ENVIRONMENTAL EDUCATION A.4.4

Questioning and Analysis

Standard is: Communicate their understanding to others in simple terms.

Through verbal, written, and dramatic expression, students gain experience in communicating their understanding to others throughout this lesson.

ENVIRONMENTAL EDUCATION B.4.4

Energy and Ecosystems

Standard is: List the components of an ecosystem, including the qualities of a healthy habitat.

By studying a forest ecosystem and playing *Build A Tree*, students comprehend the various, interrelated components of an ecosystem and the items necessary to keep that habitat healthy.

SCIENCE A.4.5

Science Connections

Standard is: When studying a science-related problem, decide what changes over time are occurring or have occurred.

As students dramatically portray a tree's life they become aware of changes developing over time.

SCIENCE E.4.6

Changes in the Earth and Sky

Standard is: Using the science themes, find patterns and cycles in the earth's daily, yearly and long-term changes.

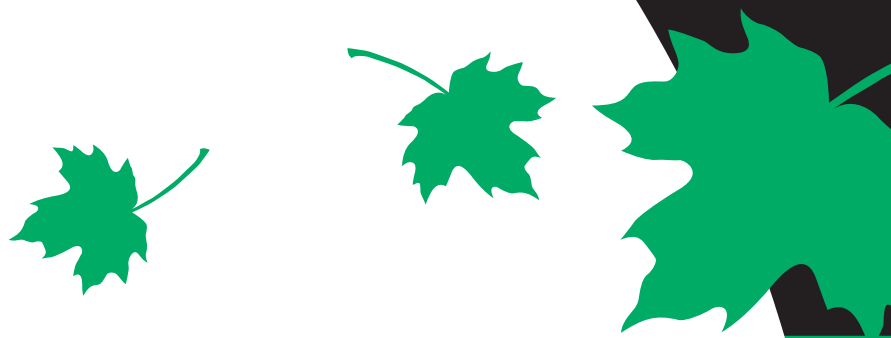
Through dramatic portrayal of a tree's life, students gain exposure to seasonal patterns, annual cycles, and long-term change in a forest ecosystem.

SCIENCE F.4.1

The Characteristics of Organisms

Standard is: Discover how each organism meets its basic needs for water, nutrients, protection, and energy in order to survive.

In building their own tree, students discover plant basic needs and how they are met.



SCIENCE F.4.3

Life Cycles of Organisms

Standard is: Illustrate the different ways that organisms grow through life stages and survive to produce new members of their type.

Students illustrate a tree's life stages and gain exposure to the continuation of the species through their completion of Student Page – *Oak Tree Life Stages*.

LESSON 2: WHAT'S IN A FOREST?

AGRICULTURE EDUCATION E.4.1

Ecology/Environment

Standard is: Identify various plants and animals and the way humans benefit from them.

Through their study of a forest ecosystem, students gain exposure to various plants and animals humans depend on.

ENVIRONMENTAL EDUCATION A.4.4

Questioning and Analysis

Standard is: Communicate their understanding to others in simple terms.

Students hone their interpersonal communication skills throughout this lesson in multiple forms.

ENVIRONMENTAL EDUCATION B.4.5

Energy and Ecosystems

Standard is: Describe natural and human-built ecosystems in Wisconsin.

By studying the natural forest community and the school community in which they learn, students gain knowledge about a variety of Wisconsin ecosystems.

SCIENCE F.4.4

Organisms and Their Environment

Standard is: Using the science themes, develop explanations for the connections among living and nonliving things in various environments.

Through the playing of *Forest Memory* and the discussion following, students begin to develop explanations for the connections existing in a forest environment.

VISUAL ARTS A.4.1

Visual Memory and Knowledge

Standard is: Develop a basic mental storehouse of images.

By seeing and manipulating the *Forest Memory* pieces, students increase their mental storehouse of images.

LESSON 3: MY FAVORITE FOREST USE

AGRICULTURE EDUCATION D.4.2

Agriscience/Production

Standard is: Understand that the food and fiber system uses natural resources.

- Discuss and give examples of natural resources used in their daily lives to produce food, fiber, and ornamental plants.

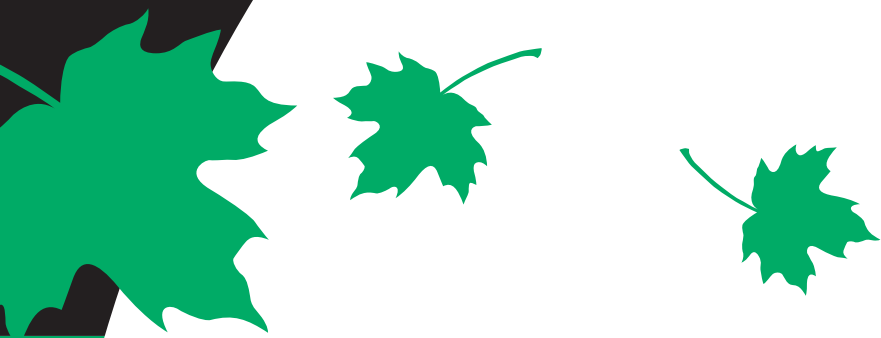
Through exploration of the *Tree Spy Cards*, students develop an appreciation of the forest as a natural resource that provides us with many products.

AGRICULTURE EDUCATION E.4.1

Ecology/Environment

Standard is: Identify various plants and animals and the ways humans benefit from them.

Through discussion, use of *Tree Spy Cards*, and the playing of *Through the Forest Game*, students understand how humans benefit from plants and animals.



ENVIRONMENTAL EDUCATION B.4.10

Natural Resources and Environmental Quality

Standard is: Describe how they use natural resources in their daily life.

Through exposure to the forest as a resource for beauty, products, enjoyment, and jobs, students realize natural resources' presence in their lives.

ENVIRONMENTAL EDUCATION B.4.11

Natural Resources and Environmental Quality

Standard is: List jobs in the community that result from or are influenced by processing and using natural resources.

During play of *Through the Forest*, students develop an awareness of jobs that exist due to the use of our forest resources.

SCIENCE E.4.7

Changes in the Earth and Sky

Standard is: Using the science themes, describe resources used in the home, community, and nation as a whole.

While playing *Through the Forest*, students communicate their understanding of forest resources present in all facets of their life.

LESSON 4: FOREST PRODUCT TIME MACHINE

AGRICULTURE E.4.1

Ecology/Environment

Standard is: Identify various plants and animals and the ways humans benefit from them.

Through the use of *Forest Resource* pictures students learn to recognize types of forest resources used by early Native Americans and European settlers.

ENVIRONMENTAL EDUCATION B.4.10

Natural Resources and Environmental Quality

Standard is: Describe how they use natural resources in their daily life.

Students look at forest products that we use every day.

SOCIAL STUDIES B.4.4

Historical Eras and Themes

Standard is: Compare and contrast changes in contemporary life with life in the past by looking at social, economic, political, and cultural roles played by individuals and groups.

Children develop an awareness of our historical and present development as a society dependent on the forest. Through use of *Forest Resource* pictures and worksheets, students compare contemporary products with past products and our cultural relation to resources.

SOCIAL STUDIES B.4.10

Historical Eras and Themes

Standard is: Explain the history, culture, tribal sovereignty, and current status of the American Indian tribes and bands in Wisconsin.

Students develop an awareness of the history and culture of Wisconsin's Native Americans as they explore the forest resources they used to meet their basic needs.

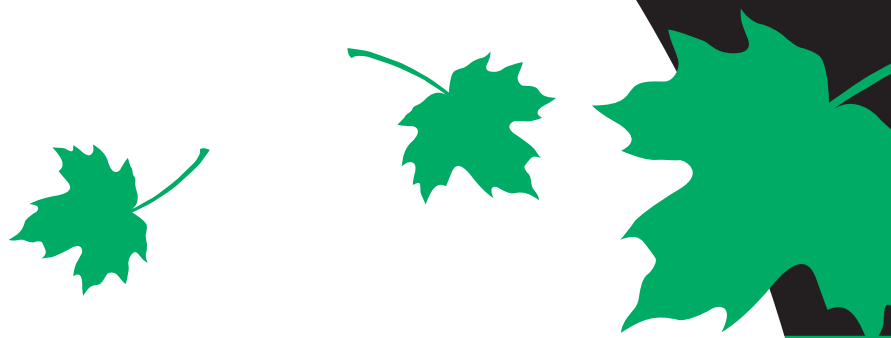
LESSON 5: ANIMALS NEED FORESTS TOO

ENVIRONMENTAL EDUCATION B.4.4

Energy and Ecosystems

Standard is: List components of an ecosystem, including the qualities of a healthy habitat.

Students learn the components of an ecosystem by drawing the things an animal needs to survive and playing a basic needs game.



SCIENCE F.4.1

The Characteristics of Organisms

Standard is: Discover how each organism meets its basic needs for water, nutrients, protection, and energy in order to survive.

Students are immersed in the study of animal basic needs throughout this lesson.

SCIENCE F.4.4

Organisms and Their Environment

Standard is: Using the science themes develop explanations for the connections among living and nonliving things in various environments.

By exploring animal dependence on living and nonliving components of the forest, students are brought into contact with connections between various elements of the forest and are challenged to depict them.

VISUAL ARTS E.4.4

Visual Communication and Expression

Standard is: Communicate basic ideas by producing visual communication forms useful in everyday life, such as sketches, diagrams, graphs, plans, and models.

Students sketch the basic needs of an animal.

VISUAL ARTS K.4.3

Making Connections

Standard is: Use what they are learning about life, nature, the physical world, and people to create art.

Students create artwork by drawing a story about an animal and how it meets its needs.

CAREERS EXPLORATION

ENVIRONMENTAL EDUCATION B.4.11

Natural Resources and Environmental Quality

Standard is: List jobs in the community that result from or are influenced by processing and using natural resources.

By hearing about specific jobs, completing a worksheet and drawing a picture, students will learn about jobs related to forests and forestry.

SCIENCE G.4.1

Science Applications

Standard is: Identify the technology used by someone employed in a job or position in Wisconsin and explain how the technology helps.

In the career profiles, students learn about a research ecologist who uses computers in his job.

FIELD ENHANCEMENT 1: ALL ABOUT MY TREE

ENVIRONMENTAL EDUCATION A.4.1

Questioning and Analysis

Standard is: Make observations, ask questions and plan environmental investigations.

Students make observations about various features of trees and record their observations on a worksheet.

ENVIRONMENTAL EDUCATION A.4.4

Questioning and Analysis

Standard is: Communicate their understanding to others in simple terms.

Students draw pictures and make observations about their adopted tree in a scrapbook that can be shared with others.



SCIENCE F.4.1

The Characteristics of Organisms

Standard is: Discover how each organism meets its basic needs for water, nutrients, protection, and energy in order to survive.

Through direct observation and group discussion, students discover how trees meet their basic needs.

VISUAL ARTS E.4.4

Visual Communication and Expression

Standard is: Communicate basic ideas by producing visual communication forms useful in everyday life, such as sketches, diagrams, graphs, plans, and models.

Students sketch what their tree looks like and what its basic needs are and share them in a class scrapbook.

FIELD ENHANCEMENT 2: SENSING THE FOREST

ENVIRONMENTAL EDUCATION A.4.1

Questioning and Analysis

Standard is: Make observations, ask questions and plan environmental investigations.

By smelling, touching, looking, and listening, students make observations about different parts of the forest environment.

SCIENCE F.4.4

Organisms and Their Environment

Standard is: Using the science themes, develop explanations for the connections among living and nonliving things in various environments.

Students investigate parts of the forest, identify which parts are living and which parts are nonliving, and begin to develop explanations for how they are connected.

VISUAL ARTS H.4.1

Visual Thinking

Standard is: Study the patterns and color in nature.

Students listen to sounds in nature and create a visual representation of them. Students match colors on their clothing to colors found in the forest.

FIELD ENHANCEMENT 3: SEARCHING FOR BASIC NEEDS

ENVIRONMENTAL EDUCATION A.4.1

Questioning and Analysis

Standard is: Make observations, ask questions and plan environmental investigations.

Students investigate a playground and surrounding area to determine if specific animals can meet their basic needs there.

ENVIRONMENTAL EDUCATION B.4.4

Energy and Ecosystems

Standard is: List components of an ecosystem, including the qualities of a healthy habitat.

Students explore an ecosystem to see if it meets the basic needs of specific animals.







































SCIENCE F.4.1

The Characteristics of Organisms























Standard is: Discover how each organism meets its basic needs for water, nutrients, protection, and energy in order to survive.

Through direct observation and group discussion, students discover how animals meet their basic needs for survival.

WISCONSIN MODEL ACADEMIC STANDARDS

Standard	Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5	Careers	FE 1	FE 2	FE 3
AGRICULTURE EDUCATION									
D.4.2									
E.4.1									
LANGUAGE ARTS									
C.4.2									
ENVIRONMENTAL EDUCATION									
A.4.1									
A.4.4									
B.4.4									
B.4.5									
B.4.10									
B.4.11									
SCIENCE									
A.4.5									
E.4.6									
E.4.7									
F.4.1									
F.4.3									
F.4.4									
G.4.1									
SOCIAL STUDIES									
B.4.4									
B.4.10									
VISUAL ARTS									
A.4.1									
E.4.4									
H.4.1									
K.4.3									

SUBJECT AREAS

	ARTS (Art, Dance, Drama, Music)	LANGUAGE ARTS	SCIENCE	SOCIAL STUDIES
LESSON 1 Tree Hardware				
LESSON 2 What's in a Forest?				
LESSON 3 My Favorite Forest Use				
LESSON 4 Forest Product Time Machine				
LESSON 5 Animals Need Forests Too				
CAREERS EXPLORATION				
FIELD ENHANCEMENT 1 All About My Tree				
FIELD ENHANCEMENT 2 Sensing the Forest				
FIELD ENHANCEMENT 3 Searching for Basic Needs				

MULTIPLE INTELLIGENCES

Multiple Intelligences can be thought of as different modes of learning and retaining information. Generally everyone has all the multiple intelligences, but in varying strengths. Students excel when they have an opportunity to express themselves in their preferred intelligences, but also need to have opportunities to strengthen other areas. The table below lists each of the LEAF lessons and the multiple intelligences that are addressed.

V-L: VERBAL-LINGUISTIC

Using language to express ideas and concepts, thinking symbolically and reasoning abstractly, and the ability to create conceptual verbal patterns.

L-M: LOGICAL-MATHEMATICAL

Skillfully able to think logically, inductively, categorically; recognize patterns; and work with abstract concepts.

V-S: VISUAL-SPATIAL

Perceiving images and spatial elements and representing those expressions effectively.

B-K: BODILY-KINESTHETIC

Creatively using the whole body to illustrate ideas and concepts.

M-R: MUSICAL-RHYTHMIC

Discriminating among musical components and using instruments or the voice to express understanding.

INTER: INTERPERSONAL





















































Demonstrating empathy toward or appreciating the thoughts and feelings of others.

INTRA: INTRAPERSONAL

Analyzing one's own thoughts and motivations and expressing understanding of those thoughts and feelings through behavior.

NAT: NATURALISTIC












Sensing patterns in and making connections with nature and the environment.


	 V-L	 L-M	 V-S	 B-K	 M-R	 Inter	 Intra	 Nat
Lesson 1: Tree Hardware								
Lesson 2: What's in a Forest?								
Lesson 3: My Favorite Forest Use								
Lesson 4: Forest Product Time Machine								
Lesson 5: Animals Need Forests Too								
Careers Exploration								
Field Enhancement 1: All About My Tree								
Field Enhancement 2: Sensing the Forest								
Field Enhancement 3: Searching for Basic Needs								

LESSON CONNECTIONS TO THE LEAF CONCEPTUAL GUIDE

The objectives of each lesson in the *LEAF Wisconsin K-12 Forestry Education Guide* are based on subconcepts outlined in the *LEAF Conceptual Guide to K-12 Forestry Education in Wisconsin*.

This chart identifies the subconcepts covered by each lesson in the K-1 Unit.

Theme 1: What is a Forest?																		Theme 2: Why Are They important?													
Subconcept:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Lesson 1																															
Lesson 2																															
Lesson 3																															
Lesson 4																															
Lesson 5																															
Careers																															

Theme 3: How Do We Sustain?																Theme 4: What is the Future?														
Subconcept:	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Lesson 1																														
Lesson 2																														
Lesson 3																														
Lesson 4																														
Lesson 5																														
Careers																														



LESSON FEEDBACK FORM (K-1 UNIT)

We want to hear from you! Your comments and suggestions will contribute to the effectiveness of the *LEAF Wisconsin K-12 Forestry Lesson Guide*.

Subject Areas and/or Grade Levels Taught _____

Name (optional) _____

School Name (optional) _____

School Address (optional) _____

School Phone (optional) _____

School Email (optional) _____

Lesson Number and Title _____

What recommendations do you have to improve the guide/lesson? If comments relate to a specific part of a particular lesson, please list page numbers for reference.

Please send comments to: LEAF, WCEE/CNR UWSP, Stevens Point, WI 54481, leaf@uwsp.edu