

Lesson 2: What Makes a Forest?

NUTSHELL

In this classroom lesson, students match plant species with forest ecosystems and learn that living things are influenced by the nonliving things around them. They create a song or skit to show what they have learned about living and nonliving connections. The students conclude the lesson by creating a mural of different types of Wisconsin forests.

ENDURING UNDERSTANDINGS

- Forests are ecosystems characterized by a dominance of tree cover and they contain a variety of other organisms (e.g., other plants, animals).
- Forests differ in composition and structure. These are both affected by biotic (e.g., animals, plants, humans) and abiotic (e.g., soil moisture, sunlight, climate) factors.

ESSENTIAL QUESTIONS

- Why do living things in a forest need nonliving things?
- How do nonliving things in a forest influence what plants and animals live there?

OBJECTIVES

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

- Explain how living things in a forest depend on nonliving things.
- Recognize that all forests do not contain the same plants and animals.

SUBJECT AREAS

Arts, Language Arts, Science

LESSON/ACTIVITY TIME

Total Lesson Time: 140 minutes

- Introduction15 minutes
- Activity 135 minutes
- Activity 245 minutes
- Conclusion45 minutes

STANDARDS CONNECTIONS

Standards for this lesson can be viewed online at the LEAF website (www.leafprogram.org).

FIELD ENHANCEMENT CONNECTIONS

This lesson ties closely with **Field Enhancement 2, Observing Forest Interactions**. **NOTE:** Doing Field Enhancement 2 prior to this lesson may improve student comprehension.

BACKGROUND INFORMATION

Trees, shrubs, flowering plants, lichens, insects, lizards, frogs, mammals, snakes, people, and bacteria are some of the living things that might be found in a forest **community**. Which of these you find depends on the nonliving things that are there. Sunlight, moisture, temperature, soil, and air are some nonliving things that living communities depend on.

Are a community and an **ecosystem** the same thing? A community is a group of plants and animals interacting with one another in a given area. An ecosystem contains living things interacting with one another and their nonliving environment. So communities and ecosystems are not the same. Communities are the living things that are part of the larger ecosystem.

Forests are ecosystems. They contain plants, animals, and the nonliving things that influence them. Forest ecosystems in Wisconsin differ from one another depending on the living and nonliving factors present.

VOCABULARY TERMS

Community: A group of plants and animals interacting with one another in a given area.

Deciduous Forest: A type of forest containing trees that shed their leaves annually.

Ecosystem: An area that contains living and nonliving things existing together and interacting. Ecosystems come in all sizes (e.g., forest, meadow, log).

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

Nutrients: The minerals in the soil that a tree needs to live and grow.

Urban Forest: The trees and other living things in a city, town, or neighborhood.

The climate of Wisconsin varies across the state. These variations are due to how far south or north a location is, whether the location is near to either Lake Michigan or Lake Superior, and what elevation a location is. It can generally be said that the southern parts of Wisconsin get less snow and have milder temperatures than the northern parts.

The parts of Wisconsin that have higher elevation are likely to receive more precipitation. Large bodies of water, such as Lake Michigan and Lake Superior, tend to moderate temperatures and can increase precipitation near them. All of these factors impact the living things that grow in these areas. Even with these differences, many Wisconsin plants are adaptable enough to live anywhere in the state.

Soil is made up of particles that range in size from fine particles (clay) to medium-sized particles (silt) to coarse particles (sand).

MATERIALS LIST

For the Class

- Teacher Page 🍷1, *Forest Description Cards* copied and cut out
- Teacher Pages 🍷2A-C, *Tree and Shrub Community Member Cards* copied and cut out (see pages 40-42 for instructions)
- Copies Student Pages ✍1A-D, *Wisconsin Forest Descriptions*
- Tape and/or tacks
- Markers, paint, or crayons for mural
- Field guides and plant/animal identification books
- Four large sheets of paper (large enough for several students to work on at once)

For the Teacher

- Marker board
- Teacher Key 🍷✍1, *Tree and Shrub Community Member Cards Key*

Wisconsin soils are made up of these three particle sizes (clay, silt, sand) often mixed together in different quantities. Soil often contains organic matter and organisms that provide some of the nutrients for growing plants. Each type of soil has different amounts of **nutrients**. A sandy soil usually has few nutrients available, but a soil with sand, silt, and clay together (called a loam) is very rich in nutrients.

In addition to particle size and nutrients, the amount of water a soil can hold also matters. A very important factor in the availability of moisture to plants and animals is the soil. Clay soils hold water very well and stay moist for a long time after rain. Sandy or rocky soils can't hold much water and dry out quickly.

Plants compete with each other to fill their needs for sun, water, nutrients, and space. This competition affects what kinds of plants can live in a forest. For instance, not all plants get the same amount of sun. As tall plants try to get sunlight, they may shade shorter plants. If the smaller plants are tolerant of shade, they survive. If they need a lot of sun, they may not survive. Wind is a nonliving thing that can change that competition. If a strong wind knocks trees down, sunlight can reach the forest floor, and the sun-loving plants are able to grow.

Fire is a nonliving thing that impacts the forests as well. Some forest communities depend on fire to allow their seeds to sprout and keep other competitive species out. Others don't tolerate fire at all and do not grow where fires occur.

There is a type of forest ecosystem that grows in Wisconsin that many people don't think of as a forest at all. This ecosystem contains trees, shrubs, grasses, birds, insects, mammals, lizards, amphibians, and people. This forest ecosystem is found in cities, towns, and villages and is called the **urban forest**. Living things such as people, trees, and squirrels interact with each other and with the nonliving soil, water, sunlight, houses, roads, cars, and trucks around them. The difference between an urban forest and other kinds of Wisconsin forests is the amount of impact of humans. People choose almost all of the plants that live in the urban forest. The trees in our yards, the flowers, the vegetable garden, and the bushes that grow next to the house are all chosen by people. Trees may be planted because they have pretty fall colors or spring blossoms. Trees may be removed because they have fruit or branches that fall on the grass. Just as in other forests, the nonliving things determine what grows in an urban forest. If a tree won't grow on dry soil and that's what the town is built on, it won't grow in that town unless people change the moisture of the soil by watering it.

One thing that all urban forests have in common is people. People build houses, roads, parking lots, and stores. The nonliving rooftops and pavement allow rainwater to run off very quickly into storm sewers instead of soaking into the soil. That means less water is available to plants or animals. All of these nonliving urban elements influence which trees and other plants survive in the urban forest and which do not.

PROCEDURE

Introduction - Living and Nonliving

1. As a group, make a list on the board of the living things in the school. (*Plants, students, class pets.*)
2. Choose one of the living things (a simple one such as a plant) and write down the nonliving things it depends on. (*Sun, air, water, soil, flowerpot.*) Discuss why it depends on them. (*It needs to use sun, air, and water to make food for itself. It needs soil to get nutrients to grow and the pot to hold the soil.*)
3. Follow the same steps for the other living things. (*The gerbil depends on its cage for protection and room to move, its food for energy, water to help digest food and do other things in its body.*) Don't go over what students need yet. That will be covered in the next step.
4. Ask students to write down the things (living or nonliving) they depend on. After everyone has written down a few things they depend on, go over them as a group and write them on the board. Ask students if they would be able to survive if they didn't have nonliving things. (*Maybe, but not in the same way. If there were no books, students could still learn, but it would be different.*)

Activity 1 - Forest Matching

1. Explain to students that a community is a group of plants and animals that interact with each other in a specific area. Refer to the list that the class made during the introduction. Could the living things in the school be thought of as a community? (Yes.)
2. Explain that forests are made up of many communities. Ask what living things could be in a forest. (*Trees, shrubs, flowers, mushrooms, squirrels, deer, birds.*) Every community of living things depends on the nonliving things around them. Ask what the nonliving things are that the living things in a forest are influenced by. (*Sunlight, water, soil, rocks, temperature, precipitation, wind, buildings, fire.*)
3. Post the four cards from Teacher Pages **1A-D, Forest Description Cards**, around the room. Each forest has a set of nonliving factors and conditions (e.g., moisture of soil, nutrient content of soil, location in Wisconsin). The factors and conditions are listed with both words and symbols. Explain to students that these descriptions tell them about different kinds of forests in Wisconsin. The cards describe some nonliving things found in that forest. These nonliving things help determine what living things grow there.
4. Hand out the cards made from Teacher Pages **2A-C, Tree and Shrub Community Member Cards**, that you have cut out and shuffled. Each card has a tree or shrub name and a list of nonliving influences that are shown with both symbols and words. There are multiple cards for some plants because they can live in more than one forest. Hand out all of the tree and shrub cards. (This may mean that each student will have several. Be sure they are not all of the same plant.) Explain to the class that these cards show what conditions different trees and shrubs grow in.
5. Tell students that they need to find the forest on the forest cards around the room that their community members might live in. When they have found a forest that they think meets the needs of one of their community members, they should put the community member card on the board underneath the forest card. Have them make sure they don't put their card up in a particular forest if there is already a card with that plant on it there. When the students have put up their cards, check the answer key to make sure their answers are right.
6. Compare the forests to each other. Are they the same? (*No.*) Why not? (*Some of the forests have fewer plants. Some forests have some of the same plants, but not all of them.*) Explain that even though they've listed plants that could live in these forests, they won't always be there. Things like fire, shade, and other nonliving things can change the forest. People and other animals can change the forest too. Each of these forests also has animals that might live there. Each forest provides different types of habitat, so different animals live there.
7. Explain that forest "B" is different from the rest. There are a lot of plants that can grow there. It represents an urban forest. Define urban forest as the trees and other living things in a city or town. Emphasize that the soil, water, and other nonliving things in an urban forest still determine what will grow there. The big difference is that people have a greater impact on what grows in an urban forest. We can water trees if the soil is too dry. We can give the trees nutrients (fertilizer) if the soil doesn't have enough.

Activity 2 - Living and Nonliving Skit

- Group students in pairs or groups of three. Tell them they are going to make up a skit or a song about how living things depend on nonliving things.
- Assign each pair, or allow them to choose, a nonliving and living thing. (Soil/tree, sun/plant, temperature/animal.) The skit or song should be a conversation or other interaction between the living and nonliving things. The living thing should ask the nonliving thing for what it needs. They also need to explain why the nonliving thing is important to the living thing. *(A conversation might be similar to the following: "Hello soil! I'm a tree and I need nutrients. Do you have some I could use?" "Yes, tree, you can use some of the nutrients that I have. Can you please tell me why you need them?")* Each skit or song should only be a couple minutes in length.
- Have each group present their skit or song to the class.
- If possible, let them look up the plants and animals in reference books or on the web to see what they look like. (There are photographs of Wisconsin trees on the LEAF website: www.uwsp.edu/cnr/leaf.)

CAREERS

The career profile in this lesson is about David Hoppe, Soil Scientist, USDA Forest Service and is found on page 38. A careers lesson that uses this information begins on page 90.

EXTENSION

Invite your local UW-Extension Agriculture agent or the high school agriculture teacher to come into your class and demonstrate soil testing.

SUMMATIVE ASSESSMENT

Visit a tree in your schoolyard. Give students time to investigate the area. Generate a list of all the living and nonliving things that influence the tree. *(Squirrel eating its nuts, insect crawling on its bark, students pulling off its leaves, sprinklers watering it, a building shading it, etc.)*

Conclusion - Wisconsin Forest Mural

- Review that a forest is made of living things (animals, plants, bacteria, etc.). Remind students that those living things depend on nonliving things to live (climate, soil, sun, etc.). Tell the class that they are going to create a mural of a Wisconsin forest complete with the living and nonliving things that they need.
- Divide the class into four groups. Have each group read the description of the Wisconsin forest you assign them from Student Pages **1A-D, Wisconsin Forest Descriptions**. Tell them to use the materials you have ready to draw the forest. (Living and nonliving things included.) The forests they will be drawing are:
 - Pine
 - Urban
 - Deciduous
 - Pine and Deciduous Mixed

**"Listen to the trees as they
sway in the wind. Their leaves
are telling secrets.**

**Their bark sings songs of olden
days as it grows around the
trunks. And their roots give
names to all things.**

**Their language has been lost.
But not the gestures."**

★ Vera Nazarian ★

SOURCES

Elias, T. S. (1989). *Grolier's Field Guide to North American Trees*. New York: Outdoor Life Books, Meredith Press.

Forest Trees of Wisconsin: How to Know Them. (1990). Madison, WI: Department of Natural Resources.

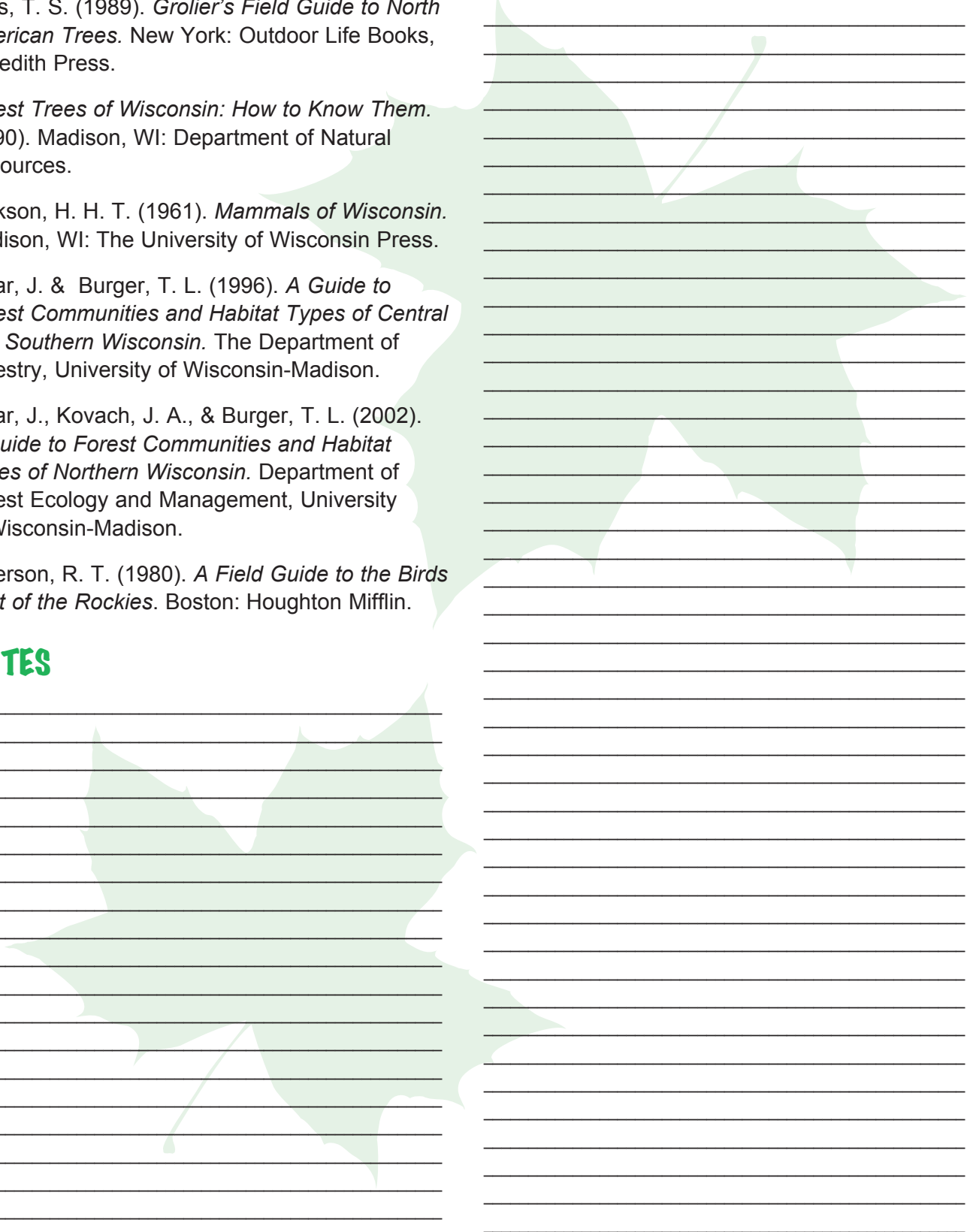
Jackson, H. H. T. (1961). *Mammals of Wisconsin*. Madison, WI: The University of Wisconsin Press.

Kotar, J. & Burger, T. L. (1996). *A Guide to Forest Communities and Habitat Types of Central and Southern Wisconsin*. The Department of Forestry, University of Wisconsin-Madison.

Kotar, J., Kovach, J. A., & Burger, T. L. (2002). *A Guide to Forest Communities and Habitat Types of Northern Wisconsin*. Department of Forest Ecology and Management, University of Wisconsin-Madison.

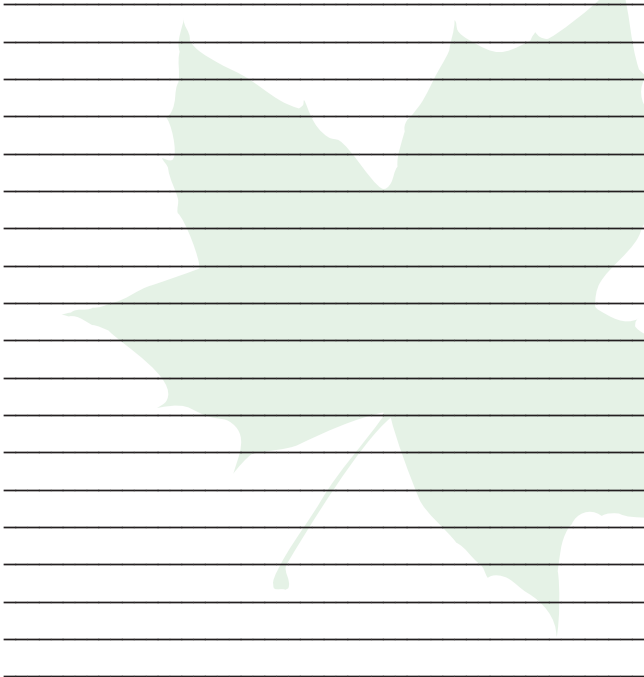
Peterson, R. T. (1980). *A Field Guide to the Birds East of the Rockies*. Boston: Houghton Mifflin.

NOTES



Lined writing area for notes, featuring horizontal lines and a large, light green maple leaf graphic in the background.

NOTES



Lined writing area for notes, featuring horizontal lines and a large, light green maple leaf graphic in the background.

Career Profile

David Hoppe, Soil Scientist

This is David Hoppe. David is a forest soil scientist with the United States Department of Agriculture Forest Service. He works in the Chequamegon-Nicolet National Forest in northern Wisconsin. David does a lot of things for his job. He looks at soil and decides what kind it is. He even uses satellites and computers to make maps of different soils. David looks at what happens to the soil when trees are cut, roads are built, or fires burn. After he has collected all this information, he puts the information into a computer to keep track of all of the things he's learned. He tells foresters what kinds of trees they should plant that would grow best in certain types of soils. David also works with people such as ecologists who want to know if endangered plant species can grow in certain areas.

To learn how to do his job, David went to college and studied forestry and soil. He worked as a soil scientist in Iowa and Minnesota before he got his job in Wisconsin. David also does things with a group of other soil scientists called the Wisconsin Society of Professional Soil Scientists.

David enjoys a lot of things about his job. He likes to be able to work with different people. Sometimes David gets to visit



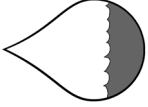

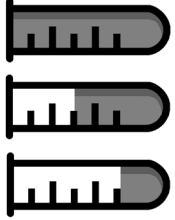
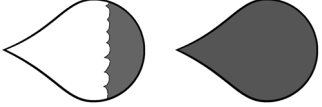


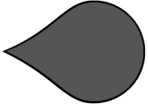


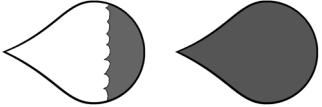
with students and teach them about his job. David also likes to be able to use all of the different things he has learned. He likes being able to spend some time inside and some time outside. When he's inside, he gets to use different kinds of computer software.

If you would like to be a soil scientist, David says that you should learn a lot about science and computers. He also says that "Writing and being able to talk to other people are also very important."



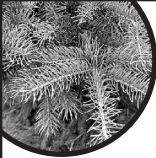
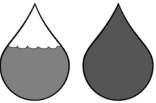


This is David studying the color of soil in the forest.





FOREST DESCRIPTION CARDS

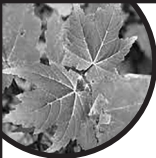



A	Mostly in northern Wisconsin 
	Low amounts of nutrients in soil 
	Dry soil 
B	Anywhere in Wisconsin 
	Low to high amounts of nutrients in soil 
	Dry to moist soil 
C	Mostly in southern Wisconsin 
	High amounts of nutrients in soil 
	Moist soil 
D	Mostly in central Wisconsin 
	Medium amounts of nutrients in soil 
	Dry to moist soil 





TREE AND SHRUB COMMUNITY MEMBER CARDS





You will need TWO copies of each card on this page.





		
WHITE SPRUCE		
Medium to moist soil	Medium nutrients	Grows mostly in central and northern Wisconsin
		

		
JACK PINE		
Dry soil	Low nutrients	Grows mostly in northern Wisconsin
		

		
RED MAPLE		
Moist soil	Medium nutrients	Grows mostly in central and northern Wisconsin
		





		
WHITE BIRCH		
Dry soil	Medium nutrients	Grows all over Wisconsin
		





		
AMERICAN ELM		
Moist soil	High nutrients	Grows all over Wisconsin
		





		
WHITE ASH		
Moist soil	Medium to high nutrients	Grows mostly in southern Wisconsin
		





TREE AND SHRUB COMMUNITY MEMBER CARDS



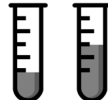

You will need TWO copies of silver maple, choke cherry, mapleleaf viburnum, and white cedar. You will need THREE copies of sugar maple, aspen, white oak, and red pine. Discard the extras.





SILVER MAPLE		
	Moist soil 	High nutrients 
		Grows mostly in southern Wisconsin 





SUGAR MAPLE		
	Moist soil 	Medium to high nutrients 
		Grows all over Wisconsin 





CHOKE CHERRY		
	Moist soil 	High nutrients 
		Grows all over Wisconsin 

ASPEN		
	Dry to moist soil 	Low to high nutrients 
		Grows mostly in central and northern Wisconsin 

MAPLELEAF VIBURNUM		
	Dry to moist soil 	Low to medium nutrients 
		Grows all over Wisconsin 

WHITE OAK		
	Moist soil 	Low to high nutrients 
		Grows all over Wisconsin 





WHITE CEDAR		
	Moist soil 	Low to high nutrients 
		Grows mostly in central and northern Wisconsin 





RED PINE		
	Dry to medium soil 	Low to medium nutrients 
		Grows mostly in central and northern Wisconsin 





TREE AND SHRUB COMMUNITY MEMBER CARDS





You will need **THREE** copies of blueberry and white pine. You will need **FOUR** copies of gooseberry, red oak, dogwood, hazelnut, and blackberry.





Discard the extras.




 <h3>BLUEBERRY</h3>		
<p>Dry soil</p> 	<p>Low to medium nutrients</p> 	<p>Grows mostly in central and northern Wisconsin</p> 





 <h3>GOOSEBERRY</h3>		
<p>Dry to moist soil</p> 	<p>Low to high nutrients</p> 	<p>Grows all over Wisconsin</p> 

 <h3>WHITE PINE</h3>		
<p>Dry to moist soil</p> 	<p>Low to medium nutrients</p> 	<p>Grows all over Wisconsin</p> 

 <h3>RED OAK</h3>		
<p>Dry to moist soil</p> 	<p>Low to high nutrients</p> 	<p>Grows all over Wisconsin</p> 

 <h3>DOGWOOD</h3>		
<p>Dry to moist soil</p> 	<p>Low to high nutrients</p> 	<p>Grows all over Wisconsin</p> 

 <h3>BLACKBERRY</h3>		
<p>Dry to moist soil</p> 	<p>Low to high nutrients</p> 	<p>Grows all over Wisconsin</p> 

 <h3>HAZELNUT</h3>		
<p>Dry to moist soil</p> 	<p>Low to high nutrients</p> 	<p>Grows all over Wisconsin</p> 

TREE AND SHRUB COMMUNITY MEMBER CARDS KEY

• CARD A •

Trees

aspen
jack pine
red oak
red pine
white pine

Shrubs and Small Trees

blackberry
blueberry
dogwood
gooseberry
hazelnut

• CARD C •

Trees

American elm
red oak
silver maple
sugar maple
white oak
white ash

Shrubs and Small Trees

blackberry
choke cherry
dogwood
gooseberry
hazelnut

• CARD B •

Trees

American elm
aspen
jack pine
red maple
red oak
red pine
silver maple
sugar maple
white ash
white birch
white cedar
white oak
white pine
white spruce

Shrubs and Small Trees

blackberry
blueberry
choke cherry
dogwood
gooseberry
hazelnut
mapleleaf viburnum

• CARD D •

Trees

aspen
red maple
red oak
red pine
sugar maple
white birch
white cedar
white oak
white pine
white spruce

Shrubs and Small Trees

blackberry
blueberry
dogwood
gooseberry
hazelnut
mapleleaf viburnum

Teacher Key  1

WISCONSIN FOREST DESCRIPTION — PINE

You're going for a walk in a pine forest. Lots of different kinds of pine trees grow here. Most of them are tall, with their branches at the top. When you look down at the ground, you see dead pine needles. That cushion of needles is why your feet aren't making any noise when you walk. There are some small pine trees here and there.



Their branches grow all the way up and down their trunks, not just at the top. Some of the young pines are tall enough to reach the lower branches of the big trees. Some of them are only as tall as you. As you walk, you hear a chattering noise from above. When you look up, you see a reddish squirrel sitting on a branch. It's flipping its tail and looking at you. It doesn't like you being there; that's why it's making that noise. Be careful that you don't step on the plants on the ground as you go away from the squirrel. Some of these plants are bushes that are about as tall as your waist. They have little berries on them that are blue. You know you shouldn't eat them unless an adult tells you it's okay, so you keep walking. When you look at the ground, you see other plants and moss too. A little yellow-and-black snake slides by. You don't run away because you know if you don't bother it, it won't hurt you. You hear pretty sounds above you. There are birds in the tops of the trees. There are all sorts of little and big birds. There are yellow ones, black-and-white ones, and brown ones. Shhh! A deer! It sees you. Be very quiet.

Names of Some of the Things That Live in the Pine Forest

TREES

- red pines
- white pines
- jack pines

ANIMALS

- deer
- porcupines
- garter snakes
- red squirrels
- black bears

FLOWERS

- lady's slippers

BIRDS

- chickadees
- warblers
- yellow-bellied sapsuckers
- brown creepers
- red-breasted nuthatches

SHRUBS

- blueberries
- wintergreen

WISCONSIN FOREST DESCRIPTION — URBAN

You're going to take a walk in an urban forest. *Urban* is a word we use to describe cities and towns. So, urban forests are forests in cities and towns. This forest is different than other forests. There are a lot of buildings and roads here. There's my house. I have two big trees growing in my yard. I wanted more trees, so I planted three small trees. I like roses, so I have rose bushes there too. I also have a garden with raspberry bushes that the birds seem to like. I get red birds, black-and-white birds, and bright-yellow birds at my bird feeder. There is a park across the street. It has a lot of trees in it. The squirrels that live in the park come across the street sometimes to eat out of my bird feeder. Maybe later you can go and see the ducks that live on the pond in the park. My neighbor decided to plant wildflowers in her yard instead of grass. She's working in her yard now. What's that sound? A crow. It's sure loud! Oh no! That rabbit is eating my raspberry bushes. I'd better go and shoo it away.



Names of Some of the Things That Live in the Urban Forest

TREES

- paper birches
- blue spruce
- crab apples
- maples
- elms

ANIMALS

- squirrels
- chipmunks
- people

PLANTS

- grass
- flowers

BIRDS

- robins
- sparrows
- crows
- pigeons
- ducks

SHRUBS

- lilac
- roses

WISCONSIN FOREST DESCRIPTION — DECIDUOUS

You're going for a walk in a deciduous forest. A deciduous forest is made up of many different kinds of deciduous trees. (Deciduous trees have green leaves in the summer but lose all of their leaves in the fall.) Even though it's a sunny day, there is not much sunlight getting to the ground



here. It's very shaded. There are a lot of big tall trees with big green leaves. It's kind of hard to walk sometimes because there are also logs lying on the ground. Be careful not to trip! You look down and see a salamander hiding under one of the logs. Don't let the branches of the bushes that are as tall as you hit you in the face. There sure are a lot of bushes! There are also plants that grow on the ground in this forest. There are ferns and lots of plants with pretty flowers. Did you see the squirrel chewing on an acorn? What's that gobbling sound? A turkey! It likes acorns too. Shhh! There's a deer over there. Look at all the birds that are in the bushes and trees. They are red and yellow. Some birds are even climbing up and down the sides of the trees.

Names of Some of the Things That Live in the Deciduous Forest

TREES

- oaks
- cherries
- maples
- aspens
- ironwoods

ANIMALS

- deer
- gray squirrels
- chipmunks
- foxes
- salamanders

SHRUBS

- witch hazel
- dogwoods

PLANTS

- poison ivy
- maidenhair fern
- wild sarsaparilla

ANIMALS

- chickadees
- cardinals
- turkeys
- woodpeckers
- goldfinches

WISCONSIN FOREST DESCRIPTION — PINE AND DECIDUOUS MIXED

You are going for a walk in a forest. When you look around, you see different kinds of trees. It's called a mixed forest. Some of the trees are pine trees. They have needles instead of flat leaves. Other trees have flat leaves. They are called deciduous. There are big trees, medium-sized trees, and smaller bushes in this forest. Don't trip on that log on the ground! What was that sound? It's a red fox snapping twigs as it walks through the forest. I bet it's looking for mice to eat! Do you see any? A squirrel is sitting in a pine tree nearby making chattering sounds. It doesn't like the fox being here. On the ground there are plants too. There's a vine climbing up that tree. I hope it's not poison ivy! There's a deer standing behind that bush. What's that gobbling sound? A turkey! There are more, smaller birds in the trees. They are red, black-and-white, and brown.



Names of Some of the Things That Live in the Mixed Forest

TREES

- red pines
- white pines
- maples
- oaks
- birches

BIRDS

- turkeys
- chickadees
- cardinals
- sparrows

SHRUBS

- raspberries
- wintergreen

PLANTS

- Virginia creeper
- wild sarsaparilla

ANIMALS

- deer
- foxes
- squirrels