

# FORESTER ACTIVITY GUIDE



Cover Photos Provided by the Wisconsin DNR



LEAF-Wisconsin's K-12 Forestry Education Program  
College of Natural Resources  
**University of Wisconsin - Stevens Point**



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 College of Natural Resources  
**University of Wisconsin-Stevens Point**

Enriching Students. Sustaining Forests.  
**LEAF: Wisconsin's K-12 Forestry Education Program**

**LEAF** was created to help promote forestry education in Wisconsin schools. In 2001, Wisconsin K-12 forestry education stakeholders evaluated the current status of and the needs for Wisconsin-based K-12 forestry education. A variety of programs existed, but voids were identified in delivery and dissemination of educational materials and services. To offer a more unified effort, stakeholders supported the development of a comprehensive program that would enhance existing efforts.

During the spring of 2001, legislation was written to establish the LEAF program as a partnership between the Wisconsin Department of Natural Resources-Division of Forestry and the Wisconsin Center for Environmental Education at the College of Natural Resources, University of Wisconsin-Stevens Point. Funding for the program is provided through a surcharge on the sale of seedlings from Wisconsin Department of Natural Resources-Division of Forestry nurseries.

**LEAF**

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[dnr.wi.gov](http://dnr.wi.gov)

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## PROGRAMS FOR FORESTERS

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### PUBLICATION DESIGN

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# PROGRAMS FOR FORESTERS

## INCLUDED IN THIS ACTIVITY GUIDE

- TEMPLATES to use to email educators (initial, confirmation, follow-up)
- TIPS for working indoors or outdoors in rural or urban settings with various grade levels
- INTRODUCTION and THEME 1: What Does a Forester Do? Allows you a chance to introduce yourself and share the role of a forester.
- THEMES 2 through 5 include activities that support the most-requested topics for forester presentations
  - Theme 2: Caring for the Forest
  - Theme 3: Forest Products and Benefits
  - Theme 4: Tree Planting and Forest Health
  - Theme 5: The Role of Fire in Forests
- PRINTABLE themes in PDF format
- DIGITAL/GOOGLE RESOURCES to support each lesson
- LEAF RESOURCES educators can use after your visit to support additional learning

## PROGRAM/ACTIVITY BEST PRACTICES

To make the most of your experience we suggest that you:

- Use the email templates to communicate with the teacher in advance of and following your program/visit.
- Review the activity you have selected.
- Consider modifications you can make to the activity to best meet the needs of your audience.
- Print Forester Guide resources you will use during your program/visit.
- Print any student materials that will be needed for your program/visit.
- Collect materials needed for each activity well in advance of your program.



## RATIONALE

This resource will help you prepare an age-appropriate, interactive, outdoor (modifiable to indoor) program/activity for youth in grades Kindergarten through 12. Each program/activity enriches existing lessons from LEAF's Wisconsin K-12 Forestry Lesson Guides.



## PROGRAMS FOR FORESTERS

### WISCONSIN DEPARTMENT OF NATURAL RESOURCES (DNR) KEY TARGET MESSAGES

Developed for use by professional foresters, this guide helps ensure that a consistent message is given in classrooms throughout the state. Each program communicates one or more of the Wisconsin DNR's target messages which include:

1. Wisconsin has a plan to sustain the healthy, working forests vital to Wisconsin's well-being.
2. Forests and forest products have a key role in supporting climate resilience.
3. Diversity in both the forest resource and the forestry workforce is vital.
4. Forests are important to both rural and urban prosperity.
5. Forests support local economies with revenue from forest recreation as well as forest products and jobs.
6. Forests are a renewable resource providing products, aesthetics and recreational opportunities important to our everyday lives.
7. Forests support other vital natural resources in Wisconsin, including clean air, water, and wildlife habitat.
8. Everyone can help sustain Wisconsin forests (by being careful with fire, not spreading invasive species, using wood products rather than alternatives, planting and caring for a native tree, enjoying the outdoors responsibly and more).

*Updated by Natural Resources Staff Specialist, Kirsten Held  
Approved by Chief State Forester, Heather Berklund, February 2022*



Photo Credit: Wisconsin DNR

# PROGRAMS FOR FORESTERS

## TIPS FOR VARIOUS AUDIENCES

### Kindergarten Through 4th Grade

- Be patient and provide clear expectations and directions. Limit instructions to 1 or 2 steps at a time.
- Be aware of their distractibility.
- Before they will care about your topic, they need to know you care for them and are interested in them.
- Share your personal stories, anecdotes and experiences. YOU are a lot cooler than a concept.
- Don't be afraid to have fun with them; let your guard down.
- Answer, or attempt to answer, their questions, whether they are on topic or not, then move on.
- Smile! Enjoy the diversions, but redirect with clear boundaries.
- In Kindergarten and 1st Grade, children can understand your instructions, but cannot read well.

### 5th Grade Through High School

- Be positive. If you are, chances are they will be too.
- Listen! Students need to know you care about them and the topic.
- Your energy and enthusiasm can be significant in getting disinterested students engaged in learning.
- Be patient.
- Avoid embarrassing students or singling them out.
- Expect some students will have short attention spans and an inability to concentrate.
- Be a good role model.
- Walk a mile in their shoes – try to remember what you were like at their age and treat students as you would have liked to be treated.



### CONNECT TO YOUR AUDIENCE

Engage them! This is the most important aspect of your presentation!

### CONNECT YOUR AUDIENCE TO THE FOREST

Remind them WHY forests matter!

### CONNECT YOUR AUDIENCE TO PLACE

Whenever possible, get your audience outdoors!



## PROGRAMS FOR FORESTERS

### PRESENTATION KIT ITEMS

LEAF recommends putting together a tote or box that you can take along when you travel to engagements. While you will still need to pack items specific to each engagement, it is recommended that you bring the following items to all engagements:

- Vest
- Helmet
- Compass
- Maps
- Radio
- Calculator
- Biltmore sticks/cruising sticks
- Diameter tapes
- Deep Woods Off
- Chaps for briars
- Fire equipment/tools

### GOOGLE RESOURCES FOR FORESTER PROFESSIONALS

LEAF has created digital resources to support your work with teachers and students. Resources include:

- HOW-TO ARTICLES for using the Forester Activity Guide
- PRINTABLE PDFs of each theme
- SLIDESHOW PRESENTATIONS for each theme (Google slides format)
  - Easy to download and edit to meet your needs
  - Used by most K-12 educators and easy to access/share
- PRINTABLE versions of all student materials (PDF format)
- Initial Request Letter Template (Google docs format)
- Theme-specific Confirmation and Follow-up Letter Templates (Google docs format)

All digital resources can be accessed using the Google Resources for Forestry Professionals link on the LEAF website: [uwsp.edu/wcee/wcee/leaf/leaf-curriculum/lessons-for-forestry-professionals/](http://uwsp.edu/wcee/wcee/leaf/leaf-curriculum/lessons-for-forestry-professionals/)

# PROGRAMS FOR FORESTERS



## LETTER TEMPLATE – INITIAL REQUEST LETTER

Dear (Insert Your Name),

Thank you for your interest in having me visit your class. In order to provide the best experience for your students, it would be helpful if you could answer the following questions for me:

- What is the ideal date and time for my visit? What other dates/times would work for you?
- How long would you like the activity/presentation to be?
- Where will the presentation take place? Indoors or outdoors?  
If outdoors, please describe the area/space we are able to use.
- About how many students will I be working with?
- Have your students already been learning about forests and/or forestry? If so, what topics have they already learned about?

All of my presentations begin with an introduction that explores the theme What Does a Forester Do? After that, I have materials and activities that I can present related to the following themes:

- Caring for the Forest
- Forest Products and Benefits
- Tree Planting and Forest Health
- The Role of Fire in Forests

Please let me know which of these themes would best meet the needs of your students. If none of these themes are an excellent fit, please share other ideas you might have for my visit. I may be reached at (insert email and phone number/extension).

Sincerely,

(Insert Your Name)

Consider using the text from this letter to reach out to educators in advance of your program or visit.

A digital version of this letter can be accessed using the Google resource for Forestry Professionals on the LEAF website.

[uwsp.edu/wcee/wcee/leaf/leaf-curriculum/lessons-for-forestry-professionals/](http://uwsp.edu/wcee/wcee/leaf/leaf-curriculum/lessons-for-forestry-professionals/)



# PROGRAMS FOR FORESTERS

**INTRODUCTION..... 1**  
Programs for Foresters

**THEME 1 ..... 9**  
What Does a Forester Do?

**THEME 2..... 18**  
Caring for the Forest

**THEME 3..... 35**  
Forest Products and Benefits

**THEME 4..... 50**  
Tree Planting and Forest Health

**THEME 5..... 73**  
The Role of Fire in Forests



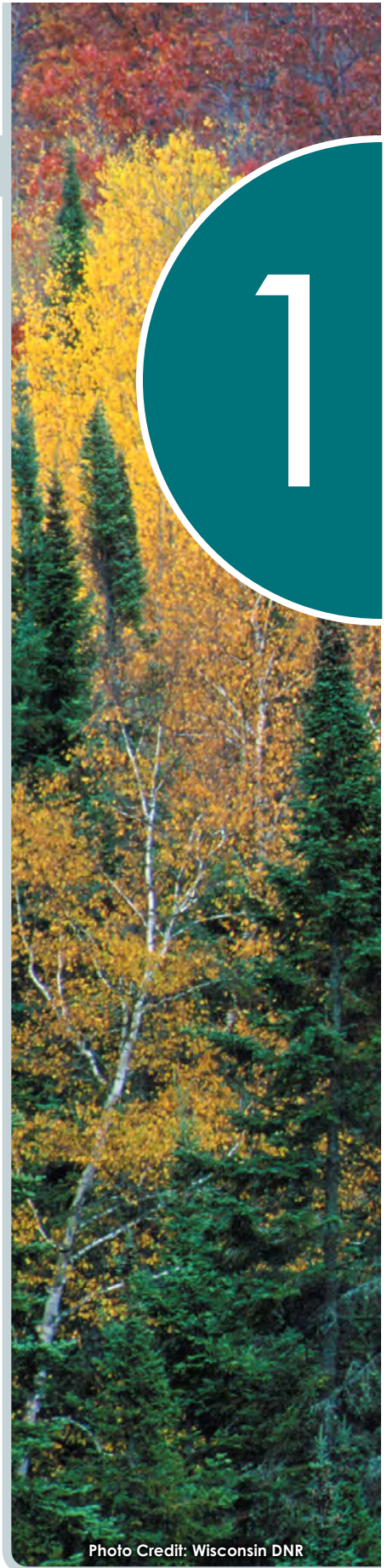


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**WHAT  
DOES A  
FORESTER  
DO?**

Photo Credit: Wisconsin DNR

# WHAT DOES A FORESTER DO?



## IN THIS LESSON YOU WILL FIND:

### LESSON WHICH INCLUDES

- What Does a Forester Do?
- What Do Urban Foresters Do?
- Forester Skills
- How Do You Become a Forester?
- Careers in Forestry
  - Video of Forester and Forester/Forest Ranger
  - Additional Career Videos

### LINK TO GOOGLE RESOURCES

### OPTIONAL ACTIVITIES RELATED TO THIS THEME

- Leaf Rubbings

### LINKS TO VIDEOS THAT SUPPORT THIS LESSON

### LEAF LESSONS THAT SUPPORT THIS THEME

Photo Credit: Wisconsin DNR



## WHAT DOES A FORESTER DO?

### PRIMARY OBJECTIVES

- Students will examine the job of a forester.
- Students will understand the skills needed to be a forester.
- Students will understand how to become a forester.

### SECONDARY OBJECTIVE

- Students will explore additional forest/forestry related careers.

### WISCONSIN DNR KEY TARGET MESSAGES

- Wisconsin has a plan to sustain the healthy, working forests vital to Wisconsin's well-being. (1)
- Diversity in both the forest resource and the forestry workforce is vital. (3)
- Forests are a renewable resource providing products, aesthetics and recreational opportunities important to our everyday lives. (6)
- Forests support other vital natural resources in Wisconsin, including clean air, water, and wildlife habitat. (7)

### WISCONSIN STANDARDS FOR ENVIRONMENTAL LITERACY AND SUSTAINABILITY

- Students analyze the dynamic balance between natural and cultural systems. (Strand 3: Engage; Standard 6)
- Students engage in experiences to develop stewardship for the sustainability of natural and cultural systems. (Strand 3: Engage; Standard 7)

### PREPARATION

- Lesson is prepped for GRADES 4-12; follow modifications for working with a K-3 audience.
- Read the lesson to familiarize yourself with what you need to explain and where you may need to elaborate.
- If you are presenting indoors and want to use the slideshow/videos:
  - Reach out to the teacher to make sure there is a projector and computer with internet available.
  - Email the slideshow to the teacher and ask them to have it ready for your visit.
- If you are presenting outdoors, consider having print images from the slideshow to share/pass around.
- You know the job of a forester best! Feel free to make this lesson your own!

# WHAT DOES A FORESTER DO?

## MATERIALS

Google resources to support this theme can be accessed at [uwsp.edu/wcee/wcee/leaf/leaf-curriculum/lessons-for-forestry-professionals/](http://uwsp.edu/wcee/wcee/leaf/leaf-curriculum/lessons-for-forestry-professionals/).

Please share the appropriate grade level slideshow with the educator so they have access to materials used in the activity and other recommended teacher resources.

- Team Level Forester Kit
- Notecards or sticky notes for student questions
- Grades 4-12 Slideshow\_Theme 1\_What does a forester do? (Google resource)
- Grades K-3 Slideshow\_Theme 1\_What does a forester do? (Google resource)
- Video Links (in slideshow)



Google resources to support this theme can be found at [leafprogram.org/fg](http://leafprogram.org/fg)



## MODIFICATIONS

### K-3 Audience

- Use alternate K-3 slideshow.

### For Urban Setting

- Spend additional time on What Do Urban Foresters Do? section.
- Discuss storm damage clean-up.

### For Indoor Setting

- Use slideshow and video resources to support your presentation.

### For Outdoor Setting

- Print images from slideshow (or other images) to show learners.
- Rely on items from the Team Level Forester Kit in place of slideshow and video.



## WHAT DOES A FORESTER DO?

### DISCUSS THE FOLLOWING 6 TOPICS IN YOUR PRESENTATION

#### 1. Forester Introduction

- Name
- Job Title
- Where do you work?
- Why did you become a forester?
- What do you like best about being a forester?
- Before we continue, write down one question you have for me today.

#### 2. What Does a Forester Do?

Heather Berkland, Chief State Forester, Wisconsin DNR, states the common goal of forest professionals is, "To sustainably manage forests for the economical, ecological, social and cultural benefits for all of us today and for the future." Show tools from your Team Level Forester Kit as you discuss these topics:

- Planting and caring for trees
- Conducting forest inventories
- Marking trees that should be cut
- Managing timber sales
- Helping private landowners meet goals for their land
- Managing fire (prescribed burns, wildfire prevention, extinguishing fires)
- Providing leadership (county and school forests)

#### 3. What Do Urban Foresters Do?

**Do not skip this even if you are NOT presenting to an urban audience.**

- WHAT ARE URBAN FORESTS? The urban forest is all the trees, plants, and beings living in and around a city, town, village, etc. The urban forest includes both public and private lands.
- WHAT DO URBAN FORESTERS DO? Manage trees and tree canopies in cities for:
  - Energy conservation
  - Economic value
  - Improved air quality
  - Reduced stormwater runoff
  - Carbon storage
  - Aesthetics

# WHAT DOES A FORESTER DO?



## 4. Forester Skills

- Provide leadership
- Communicate effectively
- Reason and problem solve
- Manage time
- Collaborate
- Use math and science
- Work with tools

## 5. How Do You Become a Forester?

- Earn a bachelor's degree (or higher) from a school with a curriculum accredited by the Society of American Foresters or an equivalent degree.
- In Wisconsin, students can earn a bachelor's degree in forestry at:
  - University of Wisconsin-Madison
  - University of Wisconsin-Stevens Point
- In Wisconsin, students can earn a certificate to be a Forest Management Specialist at:
  - Fox Valley Technical College, Appleton

## 6. Careers in Forestry

Play one or more videos from the slideshow or discuss these featured careers from WIDNRTV YouTube channel:

- Forester
- Forest Ranger
- Forestry Technician
- Forest Products Specialist
- Field Technology Coordinator
- Forest Management and Ecology Research Scientist
- Forest Inventory Analyst



## WHAT DOES A FORESTER DO?

### ADDRESS QUESTIONS

- Are there any questions from the presentation?
- Collect notecards/sticky notes and answer questions.

### REVIEW KEY MESSAGES

- Foresters and others who work in the forest sustainably manage forests for the economical, ecological, social, and cultural benefits for all of us today and for the future.
- Foresters sustainably manage forests by planting, caring for, and harvesting trees.
- Foresters use a variety of skills during their work and must be effective communicators, coordinators, and collaborators.
- There are several interesting careers related to forests and forestry.

### OPTIONAL ACTIVITIES RELATED TO THIS THEME

LEAF RUBBINGS: Collect leaves with students (or bring some along), place paper over leaves, gently rub a crayon over the leaves, and talk about the different parts of the leaves.

### RECOMMENDED TEACHER RESOURCES

All recommended teacher resources are included in the Theme 1 Slideshow Presentation (Google resource). Resources can also be downloaded from the LEAF website ([uwsp.edu/wcee/wcee/leaf/leaf-curriculum](http://uwsp.edu/wcee/wcee/leaf/leaf-curriculum)). Please share the slideshow or link to the website with the educators you work with.

- WIDNRTV career videos that were not shown during the presentation (Forester, Forest Ranger, Forestry Technician, Forest Products Specialist, Field Technology Coordinator, Forest Management and Ecology Research Scientist, and/or Forest Inventory Analyst)
- Into Forestry: Heroes of the Forest Video
- LEAF K-12 Forestry Lesson Guide Career Explorations
- LEAF K-12 Forestry Lessons and Field Enhancements



Photo Credit: Wisconsin DNR

# WHAT DOES A FORESTER DO?



## LETTER TEMPLATE – CONFIRMATION LETTER

### Theme 1: What Does a Forester Do?

Dear (Insert Your Name),

This letter confirms that I am scheduled to present What Does a Forester Do? to your (insert grade level) class on (insert program date and time).

During my program students will:

- Examine the job of a forester.
- Understand how to become a forester and the skills needed to be a forester.
- Explore forestry-related careers.

Please review the information provided above and contact me if anything is incorrect.

If you would like to do any advanced preparation, feel free to have each student write a question for me on a notecard or sticky note. If time permits, I will answer these questions following the presentation.

I will check in at the office when I arrive. Please let someone in the office know that I am coming. I plan to arrive 10 to 15 minutes before the program is scheduled to begin to set up for the activities. I look forward to working with you soon!

Sincerely,

(Insert Your Name)



## WHAT DOES A FORESTER DO?

### LETTER TEMPLATE – FOLLOW-UP LETTER

#### Theme 1: What Does a Forester Do?

Dear (Insert Your Name),

Thank you for inviting me into your classroom to help students understand the role of a forester. I hope you and your students enjoyed the program.

If you would like to extend student learning and engagement related to forestry following my visit, please consider these LEAF activities which can be found in the LEAF Wisconsin K-12 Forestry Lesson Guides on the LEAF website.

Link: [www.uwsp.edu/wcee/wcee/leaf/leaf-curriculum/](http://www.uwsp.edu/wcee/wcee/leaf/leaf-curriculum/)

#### Theme 1: What Does a Forester Do?

- LEAF 2-3 Field Enhancement 1: I Can Be a Forester
- LEAF 5-6 Lesson 6: What Is Management?
- LEAF 7-8 Lesson 3: How Forests Are Managed

I also recommend lessons from the LEAF Urban Forest Lesson Guide which can be accessed at the link shared above.

Please let me know if I can be of further assistance.

Sincerely,

(Insert Your Name)



2

**CARING  
FOR THE  
FOREST**

# CARING FOR THE FOREST

## 2

### IN THIS LESSON YOU WILL FIND:

#### LESSON WHICH INCLUDES

- Plantation Game (K-8)
- Taking Care of Urban Forests (K-8)
- Tree Inventory (7-12)

#### LINK TO GOOGLE RESOURCES

#### OPTIONAL ACTIVITIES RELATED TO THIS THEME

- Why Would Anyone Cut Down a Tree? (book)
- From Seeds to Sky (video)
- Tree Cookies Lesson
- Learn About Your Land (UW-Extension self-paced course)

#### LEAF LESSONS THAT SUPPORT THIS THEME



Photo Credit: Wisconsin DNR



## CARING FOR THE FOREST

### PRIMARY OBJECTIVES

- Students will examine the need for sustainable forest management and understand what we do/don't do to the forest.
- Students will be able to explain why trees are cut down in forests.

### WISCONSIN DNR KEY TARGET MESSAGES

- Wisconsin has a plan to sustain the healthy, working forests vital to Wisconsin's well-being. (1)
- Diversity in both the forest resource and the forestry workforce is vital. (3)
- Everyone can help sustain Wisconsin forests (by being careful with fire, not spreading invasive species, using wood products rather than alternatives, planting and caring for a native tree, enjoying the outdoors responsibly and more). (8)

### WISCONSIN STANDARDS FOR ENVIRONMENTAL LITERACY AND SUSTAINABILITY

- Students develop and connect with their sense of place and well-being through observation, exploration, and questioning. (Strand 1: Connect, Standard 1)
- Students evaluate relationships and structures of natural and cultural systems and analyze their interdependence. (Strand 2: Explore; Standard 2)
- Students engage in experiences to develop stewardship for the sustainability of natural and cultural systems. (Strand 3: Engage; Standard 7)

### PREPARATION

- Read the lesson to familiarize yourself with what you need to explain and where you may need to elaborate.
- If you are presenting indoors and want to use the slideshow/videos:
  - Reach out to the teacher to make sure there is a projector and computer with internet available.
  - Select the slides that go with your desired activity and edit the slideshow accordingly.
  - Email the slideshow to the teacher and ask them to have it ready for your visit.
- You know how to care for the forests. Feel free to make this lesson your own!

# CARING FOR THE FOREST

## MATERIALS

Google resources to support this theme can be accessed at [uwsp.edu/wcee/wcee/leaf/leaf-curriculum/lessons-for-forestry-professionals/](http://uwsp.edu/wcee/wcee/leaf/leaf-curriculum/lessons-for-forestry-professionals/).

Please share the appropriate grade level slideshow with the educator so they have access to materials used in the activity and other recommended teacher resources.

- Team Level Forester Kit
- Slideshow\_Theme 2\_Caring for the Forest (Google resource)

### Plantation Game

- Grocery bag with various forest products (e.g., paper plates, cardboard, paper towels, napkins, toilet paper, pencils, etc.)
- Stuffed forest bird and stuffed forest animal

### Tree's Life Game

- Tree's Life Game Cards (see Student Resource 1a and Student Resource 1b or the printable Google resources).

### Tree Inventory

- Tree ID Documents
- LEAF Forester Guide Tree Inventory Data Sheet (see Student Resource 2a and Student Resource 2b or the printable Google resources)  
OR Tree ID Data Sheet (see Student Resource 3 or the printable Google resource)



Google resources to support this theme can be found at [leafprogram.org/fg](http://leafprogram.org/fg)



## MODIFICATIONS

### K-8 Audience

- For early elementary audiences (K-4), consider beginning by reading the story, "Why would anyone want to cut down a tree?" (Google resource).
- Use Plantation Game or Tree's Life Game.

### 7-12 Audience

- Use Tree Inventory.

### Urban Setting

- Use Tree's Life Game instead of Plantation Game.

### Outdoor Setting

- All activities are meant to be used in an outdoor setting.

### Indoor Setting

- K-8: Plantation Game and Tree's Life Game can be modified for kids to participate within the classroom; move chairs and/or tables to create open spaces.
- 7-12: Utilize LEAF 9-12 Urban Guide Lesson 2: Working Together (Google resource).



## CARING FOR THE FOREST

### PLANTATION GAME

Ideal for GRADES K-8; Play in a large, outdoor space if possible.

#### Introduction

- Ask students what forests give us/what trees do for us. (POSSIBLE ANSWERS INCLUDE: SHADE, OXYGEN, CLEAN WATER, WILDLIFE, LUMBER, PAPER, CHEMICALS, CAMPSITES, FOOD, ETC.)
- Explain to students that they are going to play a game that will teach them about the life cycle of a pine plantation and the products and benefits people and wildlife get from them.
- Explain to students that the game will also help them understand how foresters do their job.

#### Planting

- Arrange the students in five rows, facing you.
- Have the rows of kids stand as close to each other as possible.
- Tell the kids to sit down because you just “planted” them.
- Tell the kids they are two-year-old seedlings from the Wisconsin DNR nursery that have been planted in a field.

#### Growing

- Ask the kids to stand up.
- Tell them to slowly extend their arms out from their sides until they touch the next person and then freeze in place.
- Ask students WHY they think they had to freeze in place like they stopped growing.
- Explain that the trees are now fighting each other for sunlight, water, and nutrients and are now “stuck” where they cannot grow anymore.
- Tell them to imagine they are 25-year-old trees with a DIAMETER of six inches.

#### Thinning

- Ask students what they think foresters can do to help the trees be able to grow again.
- Tell them that foresters thin the plantation.
- Explain that thinning is when foresters have loggers cut trees down in order to give the rest of the trees more room and resources to grow.
- Have students sitting in the second and fourth rows sit down. Explain to them that they are the trees that the loggers have cut down.

# CARING FOR THE FOREST



## Forest Products

- Ask the students what they think happens to the trees that have been cut down.
- Ask the students what products the trees may have been turned into. (POSSIBLE ANSWERS INCLUDE: PAPER PLATES, CARDBOARD, PAPER TOWELS, TOILET PAPER, PENCILS, ETC.)
- Pass out items from the grocery bag of forest products to the trees that have been cut down. Tell them they are now that item.

## Remaining Trees

- Explain to students that all remaining trees now have room to grow.
- Have students extend their arms all the way out to show this.
- Ask students to slowly rotate until they (gently) tap people in front of and behind them.
- Ask students what they think happened.
- Tell them they are now 35 years old, 50 feet tall and 12 inches in diameter. Tell them they are “stuck” again and cannot keep growing.
- Ask students what should be done. (THINNING)

## Thinning/Forest Products

- Ask every other student in the standing rows to sit down.
- Ask students what forest products they think these larger trees are used for. (POSSIBLE ANSWERS: LUMBER, SMALL LOG CABINS, ALONG WITH ALL THE OTHER ITEMS THAT SMALLER TREES WERE MADE INTO)
- Tell students that foresters keep harvesting trees from the forest about every 10 years until the trees are 90 years old and about 25 inches in diameter. Then loggers cut down almost all of the rest of the trees.
- Have all but the tallest student and one other student sit down. Ask what forest products the largest trees might get turned into. (POSSIBLE ANSWERS: BIG TIMBERS, BIG CABIN LOGS, TELEPHONE POLES)
- Remind the students that earlier you discussed that forests do more than just provide lumber. They are also homes for wildlife.
- Give the tallest student a stuffed bird and tell students that tree has a bird's nest in it.
- Give the other standing student the stuffed forest animal and tell them that they are a hollow tree providing a home to that animal.
- Tell students some trees will never be cut down because they are providing other special values that are important too.

## Planting

- At this point, all students are sitting except for the two wildlife trees.
- Tell students that trees are a renewable resource.
- Ask students what a renewable resource is.
- Ask students what comes next in the process. (PLANT MORE TREES!)



## CARING FOR THE FOREST

### TREE'S LIFE GAME (URBAN FOREST FOCUS)

Modified from LEAF Urban Guide Lesson 3: Taking Care of Urban Forests  
Ideal for GRADES K-8. Play in a large, outdoor space if possible.

#### Preparation

- Mark out a course at the location of your presentation. The course can be made using cones or creating a path between trees.
- Print out and cut apart one set of the Tree's Life Game Cards (see Student Resource 1a and Student Resource 1b or the printable Google resources). Feel free to add additional cards of your own to the game (laminates for future use).
- ADAPTATION FOR OLDER STUDENTS: Print one set of cards for every four to five students and have them complete the activity with minimal guidance.

#### Introduction

- Explain to students that there are things in the urban forest that make it challenging for trees to grow.
- Tell them they will play a game to learn about some of those things and see what can be done to help trees in urban forests (i.e., what can be done to manage urban forests).
- Break students into teams (no more than four or five students per team). Have teams decide on a team name.
- Explain that all teams are going to start at the same place (cone or tree) and all teams have the same goal – to be the first to get to the finish (cone or tree).
- Decide which team will go first.

#### Playing the Game

- Call out the name of the team that is up first, draw a Tree's Life Game Card (see Student Resource 1a and Student Resource 1b or the printable Google resources) and read it aloud.
- Have the students either take steps forward (toward the finish line) or backward (away from the finish line) based on what the card says.
- Students should never move back past the start; they should always stop when they get back to start (or just not move off start).
- Once that team is done moving, draw a card for the next team, and then the next, until all teams have had a chance to move.
- Repeat the process until one team makes it to the finish line.

# CARING FOR THE FOREST



## DISCUSSION

Ask students the following questions and discuss their answers.

- What were some of the challenges for urban trees that you learned about in the game?
- What were some solutions or ways to help urban trees that you learned about in the game?
- Can you think of other challenges/solutions for urban trees?
- Ask students what they think foresters do to manage urban forests. (POSSIBLE ANSWERS INCLUDE: PRUNING, PLANTING, MULCHING, WATERING, PROTECTING, INSPECTING, ETC.)
- Ask students how they think this is different from a rural forest. (POSSIBLE ANSWERS INCLUDE: RURAL FORESTS HAVE MORE TREES SO EACH TREE DOESN'T GET AS MUCH INDIVIDUAL ATTENTION; RURAL TREES OFTEN HAVE MORE SPACE, NUTRIENTS, WATER, ETC.)
- Ask students if rural forests still need to be managed. (POSSIBLE ANSWERS INCLUDE: SOMETIMES. RURAL TREES MAY STILL SURVIVE IF THEY AREN'T PART OF A MANAGED FOREST BUT TREES WILL BE HEALTHIER IF A FOREST IS MANAGED WELL. MANAGEMENT OF A RURAL FOREST WILL BE DIFFERENT THAN MANAGEMENT OF AN URBAN FOREST [FOR EXAMPLE, THINNING TAKES PLACE IN RURAL FORESTS MORE OFTEN].)



Photo Credit: Wisconsin DNR



## CARING FOR THE FOREST

### TREE INVENTORY

Ideal for GRADES 7-12; outdoor location at schoolyard or school forest.

#### Preparation

Determine what Tree ID materials will work best for your setting and print them for your presentation.

- Wisconsin DNR Community Tree Map (interactive map; not printable) <https://pg-cloud.com/Wisconsin/>
- LEAF Tree Identification Terms (Google resource)
- Wisconsin Urban Tree Key (Google resource)
- LEAF Tree ID Key (Google resource)
- LEAF Winter Tree ID Key (Google resource)
- LEAF Tree ID Data Sheet (see Student Resource 3 or the printable Google resource)
- LEAF Forester Guide Tree Inventory Data Sheet (see Student Resource 2a and Student Resource 2b or the printable Google resources)

#### Introduction

Explain to students what a tree inventory is and its purpose. A tree inventory is used to record information about and characteristics of individual trees including: location of the tree, name of the tree species, tree diameter, tree height, tree health.

#### Tree ID/Inventory Tools

Show tools you use to help you with tree ID and tree inventories, and explain how they work. Include tree ID documents you have elected to use, DBH tape and Biltmore sticks.

#### Begin Tree ID/Inventory

- Demonstrate the process to identify and inventory trees.
- Have students participate and practice using the tools. If you don't have enough DBH tapes or biltmore sticks, send an email to LEAF at [leaf@uwsp.edu](mailto:leaf@uwsp.edu) to check out materials.
- It is not expected that you complete an entire inventory. The goal is to teach educators and students HOW so they can complete their own inventory.

#### Debrief

- Discuss how data from a tree inventory can be utilized including: tree needs and care, tree management, plans for future planting, etc.

#### Additional Tools and Resources

- Wisconsin DNR Inventory Basics ([dnr.wi.gov](http://dnr.wi.gov))
- Wisconsin DNR Wisconsin Community Canopy Coverage ([dnr.wi.gov](http://dnr.wi.gov))
- MyTree and other online tree tools from i-Tree ([itreetools.org](http://itreetools.org))

#### Extension Activity: Working Together

LEAF Urban Guide 9-12 Unit,  
Lesson 2 (Google resource)

Students participate in an interactive game to learn about urban forest management techniques and how homeowners, business owners, and city foresters can work together to avoid conflict.

# CARING FOR THE FOREST



## REVIEW KEY MESSAGES

- Anyone can be involved in caring for trees/forests.
- Caring for trees is an important part of forest management.
- Both rural and urban forests can benefit from forest management.
- Rural forests are managed differently than urban forests.

## OPTIONAL ACTIVITIES RELATED TO THIS THEME

- Why Would Anyone Cut Down a Tree? Book by Roberta Burzynski from the USDA Forest Service (Google resource)
- Wisconsin Young Forest Partnership "From Seeds to Sky" video available on WIDNRTV YouTube channel
- Tree Cookies Lesson
  - Bring tree rings along on your visit
  - Explain how tree rings form
  - Students examine tree rings
  - Learn how trees grow and deal with wounds
- Learn About Your Land (UW-Extension self-paced course)

## RECOMMENDED TEACHER RESOURCES

All recommended teacher resources are included in the Theme 2 Slideshow Presentation (Google resource). Resources can also be downloaded from the LEAF website ([uwsp.edu/wcee/wcee/leaf/leaf-curriculum](http://uwsp.edu/wcee/wcee/leaf/leaf-curriculum)). Please share the slideshow or link to the website with the educators you work with.

- LEAF Urban Forest Lesson Guide K-4 Unit, Lessons 1-4
- LEAF Urban Forest Lesson Guide 5-8 Unit, Lessons 1-4
- LEAF Urban Forest Lesson Guide 9-12 Unit, Lessons 1-4
- LEAF 2-3 Guide, Lesson 5: Decisions, Decisions
- LEAF 4 Guide, Lesson 7: Sustaining our Forests
- LEAF 5-6 Guide, Lesson 6: What Is Management?
- LEAF 7-8 Guide, Lesson 3: How Forests Are Managed
- LEAF 7-8 Guide, Lesson 4: Forest Management Issues
- LEAF 9-12 Guide, Field Enhancement 4: Timber Cruise

## ADDRESS QUESTIONS

- Are there any questions from the presentation?
- Collect notecards/sticky notes and answer questions.



## CARING FOR THE FOREST

### LETTER TEMPLATE – CONFIRMATION LETTER

**Theme 1: What Does a Forester Do?**  
**Theme 2: Caring for the Forest**

Dear (Insert Your Name),

This letter confirms that I am scheduled to present “What Does a Forester Do?” and “Caring for the Forest” to your (insert grade level) class on (insert program date and time).

During my program students will:

- Examine the job of a forester.
- Understand how to become a forester and the skills needed to be a forester.
- Explore forestry-related careers.
- Examine the need for sustainable forest management and the forester’s role in it.
- Explain why trees are cut down in forests.

Please review the information I have provided above and contact me if anything is incorrect.

If you would like to do any advanced preparation, feel free to have each student write a question for me on a notecard or sticky note. If time permits, I will answer these questions following the presentation.

I will check in at the office when I arrive. Please let someone in the office know that I am coming. I plan to arrive 10 to 15 minutes before the program is scheduled to begin to set up for the activities. I look forward to working with you soon!

Sincerely,

(Insert Your Name)

# CARING FOR THE FOREST



## LETTER TEMPLATE – FOLLOW-UP LETTER

**Theme 1: What Does a Forester Do?**  
**Theme 2: Caring for the Forest**

Dear (Insert Your Name),

Thank you for inviting me into your classroom to help students understand the role of a forester and how people care for forests. I hope you and your students enjoyed the program.

If you would like to extend student learning and engagement related to forestry and caring for the forests following my visit, please consider these LEAF activities which can be found in the LEAF Wisconsin K-12 Forestry Lesson Guides on the LEAF website.

Link: [www.uwsp.edu/wcee/wcee/leaf/leaf-curriculum/](http://www.uwsp.edu/wcee/wcee/leaf/leaf-curriculum/)

### **Theme 1: What Does a Forester Do?**

- LEAF 2-3 Field Enhancement 1: I Can Be a Forester
- LEAF 5-6 Lesson 6: What Is Management?
- LEAF 7-8 Lesson 3: How Forests Are Managed

### **Theme 2: Caring for the Forest**

- LEAF 2-3 Lesson 5: Decisions, Decisions
- LEAF 4 Lesson 7: Sustaining Our Forests
- LEAF 5-6 Lesson 6: What Is Management?
- LEAF 7-8 Lessons 3 and 4: How Forests Are Managed and Forest Management Issues
- LEAF 9-12 Field Enhancement 4: Timber Cruise

I also recommend the lessons from the LEAF Urban Forest Lesson Guide which can be accessed at the link shared above.

Please let me know if I can be of further assistance.

Sincerely,

(Insert Your Name)

## TREE'S LIFE GAME CARDS

You are not planted too close to a house.

**MOVE AHEAD 3 SPACES.**

Your shade cooled someone's house.

**MOVE AHEAD 2 SPACES.**

Your fruit is food for birds and they help you spread your seeds.

**MOVE AHEAD 2 SPACES.**

You are properly taken care of by a family.

**MOVE AHEAD 3 SPACES.**

You are a tree that grows well in Wisconsin weather.

**MOVE AHEAD 2 SPACES.**

Someone hung a bird house in your branches to help wildlife.

**MOVE AHEAD 3 SPACES.**

You survived an ice storm because you were pruned.

**MOVE AHEAD 2 SPACES.**

You were inspected for insects that could hurt you, and there were none.

**MOVE AHEAD 3 SPACES.**

People prevented pollution from getting into the water.

**MOVE AHEAD 2 SPACES.**

Someone put a fence around you when you were young to protect you.

**MOVE AHEAD 3 SPACES.**

You were planted in good soil.

**MOVE AHEAD 2 SPACES.**

You have plenty of room to grow.

**MOVE AHEAD 3 SPACES.**

Someone hired an arborist to take care of you.

**MOVE AHEAD 2 SPACES.**

Someone watered you during a dry summer.

**MOVE AHEAD 3 SPACES.**

You were planted!

**MOVE AHEAD 2 SPACES.**

Someone pruned off your broken branch.

**MOVE AHEAD 3 SPACES.**

You have mulch on your roots to protect them.

**MOVE AHEAD 2 SPACES.**

You are the right size for your spot.

**MOVE AHEAD 3 SPACES.**

## TREE'S LIFE GAME CARDS

<p>Someone fertilized you.</p> <p><b>MOVE AHEAD 2 SPACES.</b></p>	<p>Your are a short tree planted under power lines so you fit there.</p> <p><b>MOVE AHEAD 3 SPACES.</b></p>	<p>Someone mowed the lawn around you carefully so your trunk did not get hit.</p> <p><b>MOVE AHEAD 3 SPACES.</b></p>
<p>Someone carved their initials in your trunk.</p> <p><b>MOVE BACK 1 SPACE.</b></p>	<p>You were planted under power lines and have grown too tall to fit there.</p> <p><b>MOVE BACK 2 SPACES.</b></p>	<p>Someone hung on your small branch and broke it off.</p> <p><b>MOVE BACK 2 SPACES.</b></p>
<p>Someone cabled their bike to you and hurt your bark.</p> <p><b>MOVE BACK 1 SPACE.</b></p>	<p>You were pruned at the wrong time of year and got a disease.</p> <p><b>MOVE BACK 2 SPACES.</b></p>	<p>A car backed into you.</p> <p><b>MOVE BACK 1 SPACE.</b></p>
<p>People hit you with a lawnmower.</p> <p><b>MOVE BACK 2 SPACES.</b></p>	<p>An insect attacked you.</p> <p><b>MOVE BACK 1 SPACE.</b></p>	<p>You were planted too deep in the ground.</p> <p><b>MOVE BACK 2 SPACES.</b></p>
<p>You can't live in the soil you were planted in.</p> <p><b>MOVE BACK 2 SPACES.</b></p>	<p>The road was widened and your roots were cut off.</p> <p><b>MOVE BACK 1 SPACE.</b></p>	<p>A new house was built on your roots.</p> <p><b>MOVE BACK 2 SPACES.</b></p>
<p>There is too much pollution.</p> <p><b>MOVE BACK 1 SPACE.</b></p>	<p>There is not enough space for you to grow.</p> <p><b>MOVE BACK 1 SPACE.</b></p>	<p>There is concrete too close to your roots.</p> <p><b>MOVE BACK 2 SPACES.</b></p>

# LEAF FORESTER GUIDE TREE INVENTORY DATA SHEET

Tree #/ID	Location	Tree Type Conifer or Broadleaf	Branching Pattern Opposite or Alternate	Tree Name	Tree Diameter (breast height)	Tree Height	Tree Health Overall tree health crown, trunk, bark, foliage, etc. 5=Excellent, 4=Good, 3=Fair, 2=Poor, 1=Dead

Adapted from LEAF 7-8 Field Enhancement 1: Tree ID Data Sheet

## LEAF FORESTER GUIDE TREE INVENTORY DATA SHEET

Tree #/ID	Location	Tree Type Conifer or Broadleaf	Branching Pattern Opposite or Alternate	Tree Name	Tree Diameter (breast height)	Tree Height	Tree Health  Overall tree health crown, trunk, bark, foliage, etc. 5=Excellent, 4=Good, 3=Fair, 2=Poor, 1=Dead

Adapted from LEAF 7-8 Field Enhancement 1: Tree ID Data Sheet

Group Member Names: \_\_\_\_\_

**TREE ID DATA SHEET**

Tree #	Tree Type		Branching Pattern		Tree Name	Wildlife Observations (nest, droppings, food remains, etc.)	Describe the Tree Bark (rough, scaly, dark, smooth, light, etc.)	Sketch the Overall Shape of the Tree
	Conifer	Broadleaf	Opposite	Alternate				
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								



3

**FOREST  
PRODUCTS  
AND  
BENEFITS**

Photo Credit: Wisconsin DNR

# FOREST PRODUCTS AND BENEFITS

## IN THIS LESSON YOU WILL FIND:

### LESSON WHICH INCLUDES

- Forest Products – Does it Come from a Tree? Activity
- Forest Benefits – Forest Benefits Team Challenge Activity
- Urban Forest Benefits – Problem-solving Activity (see Student Resource 4a and Student Resource 4b or the printable Google resources)

### LINK TO GOOGLE RESOURCES

### OPTIONAL ACTIVITIES RELATED TO THIS THEME

- LEAF Urban Guide Lessons/Activities

### LEAF LESSONS THAT SUPPORT THIS THEME



Photo Credit: Wisconsin DNR

# FOREST PRODUCTS AND BENEFITS



## PRIMARY OBJECTIVES

- Students will investigate the products that come from the forest.
- Students will explore the many uses of the forest.

## WISCONSIN DNR KEY TARGET MESSAGES

- Forests and forest products have a key role in supporting climate resilience. (2)
- Forests are important to both rural and urban prosperity. (4)
- Forests support local economies with revenue from forest recreation as well as forest products and jobs. (5)
- Forests are a renewable resource providing products, aesthetics and recreational opportunities important to our everyday lives. (6)
- Forests support other vital natural resources in Wisconsin, including clean air, water, and wildlife habitat. (7)

## WISCONSIN STANDARDS FOR ENVIRONMENTAL LITERACY AND SUSTAINABILITY

- Students evaluate relationships and structures of natural and cultural systems and analyze their interdependence. (Strand 2: Explore; Standard 2)

## PREPARATION

- Read the lesson to familiarize yourself with what you need to explain and where you may need to elaborate.
- If you are presenting indoors and want to use the slideshow:
  - Reach out to the teacher to make sure there is a projector and computer with internet available.
  - Email the slideshow to the teacher and ask them to have it ready for your visit.
  - Select the slides that go with your desired activity.
- You know a lot about forest products and benefits. Feel free to make this lesson your own!



# FOREST PRODUCTS AND BENEFITS

## MATERIALS

Google resources to support this theme can be accessed at [uwsp.edu/wcee/wcee/leaf/leaf-curriculum/lessons-for-forestry-professionals/](http://uwsp.edu/wcee/wcee/leaf/leaf-curriculum/lessons-for-forestry-professionals/).

Please share the appropriate grade level slideshow with the educator so they have access to materials used in the activity and other recommended teacher resources.

- Team Level Forester Kit
- Slideshow\_Theme 3\_Forest Products and Forest Benefits

### Does it Come From a Tree? Game

Collect a variety of items that do/don't come from a tree (include things that seem like they come from a tree). Items referenced in this lesson include: toilet paper/paper towel tube, paper clips, newspaper, sponges, apple, macaroni and cheese, chewing gum, maple syrup, toothpaste, comb, disinfecting wipes, suntan lotion, pencil, ping pong balls, aspirin, nail polish, white sugar, chocolate, cotton balls, shampoo, cork, and oatmeal.

### Forest Benefits Team Challenge

Provide a piece of paper and pencil for each team of students.

### Urban Forest Benefits Problem-solving Activity

Make copies of and cut apart the Urban Forest Benefit Scenario Cards (see Student Resource 4a and Student Resource 4b or the printable Google resources).



Google resources to support this theme can be found at [leafprogram.org/fg](http://leafprogram.org/fg)



## MODIFICATIONS

### K-4 Audience

- Consider using LEAF's Urban Forest Guide\_K-4 Unit\_ Lesson 2: Forest Benefits (Google resource).

### 5-8 Audience

- Use as designed.

### 9-12 Audience

- Consider using LEAF Urban Forest Guide 9-12 Unit; Lesson 1: What's It Worth (Google resource).

### Urban Setting

- Be sure to leave time for the Urban Forest Benefits – Problem-solving Activity.

### Indoor/Outdoor Setting

- Lesson can be completed indoors and/or outdoors.

# FOREST PRODUCTS AND BENEFITS



## INTRODUCTION

The forest provides us with many economic, ecologic, social, and cultural benefits. Today we will explore forest products and other forest benefits.

### Forest Products – Does it Come from a Tree? Game

Explain to students that they are going to play an easy game and all they have to do is figure out if the objects you share come from a tree. You will lead the game. Explain the three rules of the game:

1. Have fun!
2. You have to learn at least one new thing.
3. You must participate by saying either YES or NO for every item shown.

### Does it Come from a Tree? Game Script/Directions

- Grab a toilet paper/paper towel tube and use it as your pointer.
  - Ask students if they know what the roll is. (PAPER TOWEL TUBE)
  - Ask them if they know if it comes from a tree. (YES)
  - Explain. (YES, IT IS A PAPER PRODUCT AND MOST PAPER COMES FROM TREES.)
- Here's another easy one – newspaper.
  - Did it come from a tree? (YES)
  - Explain. (YES, IT IS ALSO A PAPER PRODUCT.) Did you know that Wisconsin is the #1 paper producer in the United States and has been for a LONG time (over 50 years) and it is because we have foresters to help us sustainably manage forests.
- Consider highlighting a few other specialty papers (e.g., Reese's peanut butter cup brown liner, bandaids, wrappers, gift wrap, tissue paper).
- Tell students that things may get trickier now – paper clip.
  - Does this come from a tree? (NO)
  - Are you sure? It has the word paper in it's name? (NO! PAPER CLIPS ARE MADE OF METAL WHICH DOESN'T COME FROM TREES.) While metals are often recyclable, they are non-renewable resources, unlike trees which are both recyclable and renewable.
- Apple? (YES)
- Cotton balls? (NO! COTTON BALLS COME FROM A NON-WOOD HERBACEOUS PLANT, COTTON.) Remember, while TREES are PLANTS, not all PLANTS are TREES.

## FOREST PRODUCTS AND BENEFITS



- What about macaroni and cheese, hmmm? (THE BOX IS CARDBOARD WHICH IS MADE FROM TREES.) What about the macaroni? (NO) It comes from a grass/grain plant. What about the cheese? It rhymes with trees, and we are in Wisconsin so surely we have cow trees in Wisconsin? Right!?! (THE ANSWER IS YES!) The cheese doesn't actually come from trees, but there is more than cheese in the packet. The cheese gets thick because it has a product from trees that helps thicken it. (TREE CELLULOSE) Tree cellulose is used in lots of foods as a thickening agent or to help prevent foods (like shredded cheese) from sticking together. If you think that's gross, think about other things you eat – wheat, carrots, other plant products. Trees are plants and this is just another plant product we consume.
- Cake mixes have cellulose. (ANTI-CAKING AGENT)
- Parmesan and most shredded cheeses are coated in cellulose to keep it from clumping.
- Ice cream? (YUP) Cellulose is used to make ice cream creamier and stop crystals from forming in it.
- What about sponges? (YES and NO) Many sponges are made from wood fibers, also known as cellulose. In the past, sponges came from the ocean (they are living organisms but we don't use them like this much anymore). Some sponges are made from petroleum products, too.
- Chewing gum? (YES and NO) Yes, traditional gum recipes started with chicle sap from the sapodilla tree. No, most modern gums are made from manufactured plasticizers and rubberizers that mimic the natural product.
- Toothpaste? (YES) Toothpaste can contain several different wood components including carboxymethyl, cellulose, cellulose gum (agents that help hold it together) and xylitol (a sugar alcohol naturally sourced from trees/plants that can add a sweet flavor to something without contributing to cavities/decay).
- Other bathroom/cosmetic products use thickeners, too. (SHAMPOOS, LOTIONS, SUNTAN LOTIONS)
- Nail Polish? (YES, SOMETIMES) Some nail polishes contain the wood component nitrocellulose, which is added for its strength and quick-dry properties.
- Ping pong ball? (YES) A wood component, celluloid, is used to make the balls because it is easily molded and shaped while allowing for the high bounce property of the ball.

## FOREST PRODUCTS AND BENEFITS



- Comb? (YES) While combs are made from plastic, many are reinforced with wood fibers. The same is true for glasses frames and guitar picks.
- Maple syrup? (YES and NO) Pure maple syrup comes from boiling down the sap collected from maple trees; however, not all syrup comes from a tree. Often, regular pancake syrup you purchase from the store does NOT come from a tree. It comes from CORN!
- Chocolate? (YES) Chocolate comes from the cacao tree, a native tree of the Amazon. These trees can also be found in South and Central America, the Caribbean, and other humid/tropical climates.
- White sugar? (NO) Sugar comes from sugar cane, which is a plant, but not a tree!
- Aspirin? (YES and NO) Yes, willow bark was used before aspirin in historic remedies, but is not used as an ingredient in aspirin today. Yes, cellulose is often used in pills and capsules today to help bind and distribute the medicine evenly.
- Disinfecting wipes? (YES) Disinfecting wipes are often made of rayon, which is produced from the wood component, cellulose, which allows the sheet to hold the liquid and maintain its shape and texture. Rayon can also be found in clothing, bedding, and furnishings.
- Pencil? (YES) Pencils are a solid wood product that comes from trees and we use them almost every day. Other products that we often use daily include: homes, furniture, and picture frames.
- Bottle cork? (YES) The cork used to create bottle cork ONLY comes from the cork oak. These trees are stripped for their cork to help create the stoppers.
- Oatmeal? (NO) Oatmeal is made from oats which is a plant, not a tree.

### DISCUSSION

Ask students the following questions and discuss their answers.

- Which wood products were most surprising to you?
- How would your life be different if wood products were not a part of it?
- How does understanding how many products come from wood increase the importance of sustainable forest management?

# FOREST PRODUCTS AND BENEFITS

## FOREST BENEFITS – FOREST BENEFITS TEAM CHALLENGE

Explain to students that forests are important for reasons other than just the products they produce. Forests provide other economic, ecological, social, and cultural benefits as well.

Tell students they are going to participate in a team challenge to see if they can identify many of these benefits. There are two goals:

- Students identify as many forest benefits in each quadrant (economic, ecological, social, cultural) as possible.
- Students identify benefits that other teams DON'T think of.

### Instructions

1. Divide students into teams of three to four people.
2. Provide each team with paper and a pencil.
3. Each team should divide/fold their paper into four quadrants and label them Economic, Ecological, Social, and Cultural.
4. Share the goals (above) with teams.
5. Give teams five to 10 minutes to write as many benefits of forests (both RURAL and URBAN) that they can think of in each quadrant. Remind them, that in addition to thinking of as many benefits as possible, they should think of benefits other groups might not think of.
6. When "time" is up, each team takes turns sharing forest benefits, one at a time, from each category. If any other team(s) has/have that benefit on their list, no team gets a point for it. If NO other team has the benefit on their list, the team sharing the benefit gets a point. Do this for each quadrant separately. Economic benefits CANNOT include forest products. Discuss benefits and tally points along the way. Feel free to share your own thoughts on benefits that are not mentioned.
7. Have each team tally points. Consider bringing a prize for the winning team.

### DISCUSSION

Ask students the following questions and discuss their answers.

- What forest benefits are most important to you?
- What forest benefits had you never thought about before?
- How do foresters work to preserve all these benefits?



## POSSIBLE BENEFITS TO SHARE

### Economic

Jobs, revenue from recreation, cost savings from shade provided by trees, increased property value, etc.

### Ecological

Habitats, species diversity, contributions to natural cycles (water, carbon, etc.), improve air and water quality, flood control, reduce erosion and stormwater runoff, shade, etc.

### Social

Recreational opportunities, benefits of green spaces on physical health and mental health, gathering spaces, etc.

### Cultural

Identity, sense of home, spiritual enrichment, history, traditions, etc.

## FOREST PRODUCTS AND BENEFITS



### URBAN FOREST BENEFITS – PROBLEM-SOLVING ACTIVITY

Explain to students that urban trees can be a solution to many problems and that in this activity they will think about a problem that can be common in urban areas and how urban trees/forests can help solve the problem.

#### Instructions

1. Divide students into teams of three to four people.
2. Give each team a different scenario to discuss from the Theme 3 Urban Forest Benefit Scenario Cards (see Student Resource 4a and Student Resource 4b or the printable Google resources).
3. Allow teams five minutes to discuss their scenario and a solution to the scenario that relates to urban trees/forests.
4. Have teams share their scenarios and solutions with the rest of the class.
5. If time permits, give each team a blank scenario card. Have them think of an urban problem that urban forests/trees could solve and write it on the front side of the card. Have them record their solution on the back side of the card. Have teams share their problems/solutions (or collect the cards and share them yourself).

#### DISCUSSION

Ask students the following questions and discuss their answers.

- What urban forest benefits do you think are most important? Explain.
- What urban forest benefits had you never thought about before?
- It sometimes can take a long time for trees to grow so we can reap their benefits. What are some things residents in urban areas can do in the meantime to help with some of the problems described in the scenarios?

# FOREST PRODUCTS AND BENEFITS

## REVIEW KEY MESSAGES

- Forests provide us with many products that contribute to our quality of life.
- Forests, both rural and urban, provide us with many benefits (economic, ecological, social, and cultural).
- Everyone benefits from sustainable management of rural and urban forests.
- Forest management increases the sustainability of a forest.

## OPTIONAL ACTIVITIES RELATED TO THIS THEME

- iTree Design ([design.itreetools.org](http://design.itreetools.org))
- MyTree and other tools ([itreetools.org](http://itreetools.org))
- Green Cities: Good Health website ([depts.washington.edu/hhwb](http://depts.washington.edu/hhwb) or search University of Washington Green Cities: Good Health)
- LEAF Urban Forest Guide K-4 Unit; Lesson 2: Urban Forest Benefits (Google resource)
- LEAF Urban Forest Guide 5-8 Unit; Lesson 2: Urban Forest Benefits (Google resource)
- LEAF Urban Forest Guide 9-12 Unit; Lesson 1: What's It Worth? (Google resource)



Photo Credit: Wisconsin DNR



## ADDRESS QUESTIONS

- Are there any questions from the presentation?
- Collect notecards/sticky notes and answer questions.

# FOREST PRODUCTS AND BENEFITS



## RECOMMENDED TEACHER RESOURCES

All recommended teacher resources are included in the Theme 3 Slideshow Presentation (Google resource). Resources can also be downloaded from the LEAF website ([uwsp.edu/wcee/wcee/leaf/leaf-curriculum](http://uwsp.edu/wcee/wcee/leaf/leaf-curriculum)). Please share the slideshow or link to the website with the educators you work with.

- LEAF Urban Forest Lesson Guide K-4 Unit
- LEAF Urban Forest Lesson Guide 5-8 Unit
- LEAF Urban Forest Lesson Guide 9-12 Unit
- LEAF K-1 Guide, Lesson 3: My Favorite Forest Use
- LEAF 2-3 Guide, Lesson 4: Forests Are Important to Me!
- LEAF 4 Guide, Lesson 6: Forests Are Important to You and Me
- LEAF 5-6 Guide, Lesson 5: We All Need Trees
- LEAF 5-6 Guide, Field Enhancement 1: Wood's Worth
- LEAF 7-8 Guide; Lesson 5: Many Forests, Many Values, Many Reasons
- LEAF 9-12 Guide, Marketplace Matters: Understanding the Economic Value of Wisconsin's Forests
- LEAF 9-12 Guide, Lesson 4: The Forest Marketplace
- LEAF 9-12 Guide, Field Enhancement 4: Timber Cruise



Photo Credit: Wisconsin DNR

# FOREST PRODUCTS AND BENEFITS



## LETTER TEMPLATE – CONFIRMATION LETTER

**Theme 1: What Does a Forester Do?**  
**Theme 3: Forest Products and Benefits**

Dear (Insert Your Name),

This letter confirms that I am scheduled to present “What Does a Forester Do?” and “Forest Products and Benefits” to your (insert grade level) class on (insert program date and time).

During my program students will:

- Examine the job of a forester.
- Understand how to become a forester and the skills needed to be a forester.
- Explore forestry-related careers.
- Investigate the products that come from the forest.
- Explore the many uses of the forest.

Please review the information I have provided above and contact me if anything is incorrect.

If you would like to do any advanced preparation, feel free to have each student write a question for me on a notecard or sticky note. If time permits, I will answer these questions following the presentation.

I will check in at the office when I arrive. Please let someone in the office know that I am coming. I plan to arrive 10 to 15 minutes before the program is scheduled to begin to set up for the activities. I look forward to working with you soon!

Sincerely,

(Insert Your Name)

# FOREST PRODUCTS AND BENEFITS



## LETTER TEMPLATE – FOLLOW-UP LETTER

**Theme 1: What Does a Forester Do?**  
**Theme 3: Forest Products and Benefits**

Dear (Insert Your Name),

Thank you for inviting me into your classroom to help students understand the role of a forester and forest products and benefits. I hope you and your students enjoyed the program.

If you would like to extend student learning and engagement related to forestry and forest products and benefits following my visit, please consider these LEAF activities which can be found in the LEAF Wisconsin K-12 Forestry Lesson Guides on the LEAF website.

Link: [www.uwsp.edu/wcee/wcee/leaf/leaf-curriculum/](http://www.uwsp.edu/wcee/wcee/leaf/leaf-curriculum/)

### **Theme 1: What Does a Forester Do?**

- LEAF 2-3 Field Enhancement 1: I Can Be a Forester
- LEAF 5-6 Lesson 6: What Is Management?
- LEAF 7-8 Lesson 3: How Forests Are Managed

### **Theme 3: Forest Products and Benefits**

- LEAF Urban Forest Guide K-4 Unit; Lesson 2: Urban Forest Benefits
- LEAF Urban Forest Guide 5-8 Unit; Lesson 2: Urban Forest Benefits
- LEAF Urban Forest Guide 9-12 Unit; Lesson 1: What's it Worth?
- LEAF K-1 Guide, Lesson 3: My Favorite Forest Use
- LEAF 2-3 Guide, Lesson 4: Forests Are Important to Me!
- LEAF 4 Guide, Lesson 6: Forests Are Important to You and Me
- LEAF 5-6 Guide, Lesson 5: We All Need Trees
- LEAF 7-8 Guide, Lesson 5 Many Forests, Many Values, Many Reasons
- LEAF 9-12 Guide, Marketplace Matters: Understanding the Economic Value of Wisconsin Forests
- LEAF 9-12 Guide, Lesson 4: The Forest Marketplace
- LEAF 9-12 Guide, Field Enhancement 4: Timber Cruise

I also recommend the lessons from the LEAF Urban Forest Lesson Guide which can be accessed at the link shared above. Please let me know if I can be of further assistance.

Sincerely,

(Insert Your Name)

## URBAN FOREST BENEFIT SCENARIO CARDS

**PROBLEM:**

Residents are having trouble sleeping due to all of the noise coming from the street.

**PROBLEM:**

Residents are suffering from depression or feeling isolated.

**PROBLEM:**

When there is rain, especially heavy rain, the streets flood very quickly.

**PROBLEM:**

Residents don't observe birds or animals much anymore.

**PROBLEM:**

Residents are struggling with breathing problems like asthma.

**PROBLEM:**

Residents complain how it is too hot outside.

**PROBLEM:**

It costs a lot of money to run an air conditioner during the daytime when temperatures are at their highest.

**PROBLEM:**

Residents don't like that anyone walking on the street can see into their home/apartment.

# URBAN FOREST BENEFIT SCENARIO CARDS

**PROBLEM:**

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**PROBLEM:**

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**PROBLEM:**

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**PROBLEM:**

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**PROBLEM:**

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4

**TREE  
PLANTING  
AND  
FOREST  
HEALTH**

# TREE PLANTING AND FOREST HEALTH

## IN THIS LESSON YOU WILL FIND:

### LESSON WHICH INCLUDES

- Tree Planting (Planting and Caring for Trees)
- Move! Attack of the Invasive Species (USDA Game; see Student Resource 6 or the printable Google resource)
- The Great EAB Escapade (USDA Game; see Student Resource 7a, Student Resource 7b, and Student Resource 7c, or the printable Google resources)
- Wisconsin Worm Watch Survey (Student Resource 8a and Student Resource 8b or the printable Google resources)

### LINK TO GOOGLE RESOURCES

### OPTIONAL ACTIVITIES RELATED TO THIS THEME

- LEAF Urban Guide Lessons/Activities

### LEAF LESSONS THAT SUPPORT THIS THEME

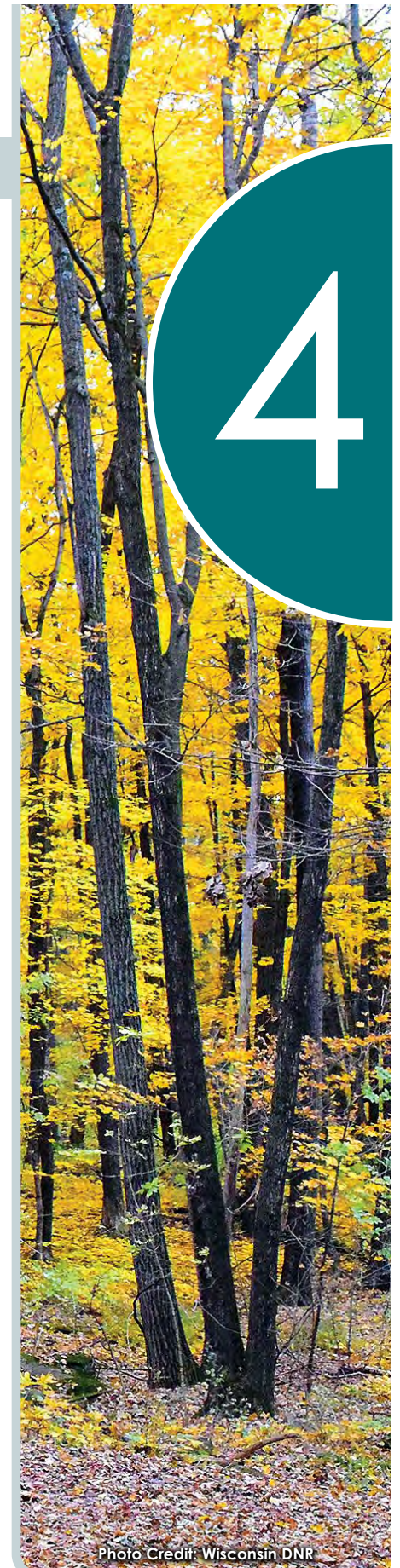


Photo Credit: Wisconsin DNR

# TREE PLANTING AND FOREST HEALTH



## PRIMARY OBJECTIVES

- Students will explore WHAT trees need to grow.
- Students will learn WHERE trees should be planted.
- Students will learn HOW to care for planted trees.

## SECONDARY OBJECTIVES

- Students will understand what their tree might grow up to be used for.
- Students will examine the impact of invasive species on trees.

## WISCONSIN DNR KEY TARGET MESSAGES

- Wisconsin has a plan to sustain the healthy, working forests vital to Wisconsin's well-being. (1)
- Forests are a renewable resource providing products, aesthetics and recreational opportunities important to our everyday lives. (6)
- Everyone can help sustain Wisconsin forests (by being careful with fire, not spreading invasive species, using wood products rather than alternatives, planting and caring for a native tree, enjoying the outdoors responsibly and more). (8)

## WISCONSIN STANDARDS FOR ENVIRONMENTAL LITERACY AND SUSTAINABILITY

- Students engage in experiences to develop stewardship for the sustainability of natural and cultural systems. (Strand 3: Engage; Standard 7)

## PREPARATION

- Lesson is ideal for GRADES 5-8.
- Read the lesson to familiarize yourself with what you need to explain and where you may need to elaborate.
- If you are presenting indoors and want to use the slideshow:
  - Reach out to the teacher to make sure there is a projector and computer with internet available.
  - Email the slideshow to the teacher and ask them to have it ready for your visit.
  - Select the slides that go with your desired activity.
- You know a lot about trees and forest health. Feel free to make this lesson your own!



Photo Credit: Wisconsin DNR

# TREE PLANTING AND FOREST HEALTH



## MATERIALS

Google resources to support this theme can be accessed at [uwsp.edu/wcee/wcee/leaf/leaf-curriculum/lessons-for-forestry-professionals/](http://uwsp.edu/wcee/wcee/leaf/leaf-curriculum/lessons-for-forestry-professionals/).

Please share the appropriate grade level slideshow with the educator so they have access to materials used in the activity and other recommended teacher resources.

- Team Level Forester Kit
- Slideshow\_Theme 4\_Tree Planting and Forest Health

### Planting Trees and Tree Care

Gather equipment for tree planting/care if needed.

### Move! Attack of the Invasive Species! (USDA)

- Move! Attack of the Invasive Species! (see Student Resource 6 or the printable Google resource)
- Pinnies, colored flags, or ID tags to separate invasive species and native plants
- Pest pathway Items: boots, shoes, backpacks, clothing items, gloves, firewood, tires, tents, toy bike, stuffed animals (pets/wild), shovels

### Invasive Species EAB Game

- The Great EAB Escapade (USDA Game; see Student Resource 7a and Student Resource 7b or the printable Google resources)
- Five copies of EAB Investigators (USDA Game; see Student Resource 7c or the printable Google resource)
- Five bundles of five sticks that include a mix of long and short sticks

### Worm Watch

- Mustard Mix (see activity for amounts)
- Wisconsin Worm Watch Survey (see Student Resource 8a and Student Resource 8b or the printable Google resources)

## MODIFICATIONS

### K-4 Audience

- No adjustments from Planting Trees and Caring for Trees.
- For K-2, instead of the "Move" game, consider a simple game of tag where the person who is "it" represents an invasive species and see how fast they can spread (how many people they can tag).
- For K-4 audiences, break down the game instructions into several small steps.

### 9-12 Audience

- Consider using entire Worm Watch Lesson (Google resource).

### Urban Setting

- Make sure students understand that invasive species impact trees in urban and rural forests.

### Indoor/Outdoor Setting

- Tree Planting and Worm Watch MUST take place outdoors.
- Games can be modified to take place in a large indoor space.

Google resources to support this theme can be found at [leafprogram.org/fg](http://leafprogram.org/fg)



# TREE PLANTING AND FOREST HEALTH



## INTRODUCTION: PLANTING AND CARING FOR TREES

Tell students that there are a lot of things to consider when planting and caring for trees.

## PLANTING TREES

### Why Plant a Tree?

Discuss the various economic, ecological, social, and cultural benefits trees provide.

### Things to Consider BEFORE Planting a Tree

(From Wisconsin DNR New Tree Planting Brochure, PUB-FR-261 2003)

Discuss the following considerations with students:

- Where to plant your tree? Look up, look down, look around.
- **HARDINESS ZONE:** Know your zone AND choose trees adapted to that zone. Consider planting species **NATIVE** to the area. Explore species and hardiness zones. Use 2023 USDA Plant Hardiness Zone Map (Google resource).
- Determine what type of nursery stock tree is best for your situation: bare-root, containerized, or balled and burlapped.
- Think about what your tree will grow up to be used for.
- Call **DIGGERS HOTLINE** at 1-800-242-8511 before you dig!

### Planting a Tree

Teach students how to plant a tree. Be sure to discuss each step with students and highlight the most important things to remember.

1. Determine where the root collar is located within the root ball.
2. Dig a planting space 2-3 times wider than the root ball, but **NOT** deeper than the root ball.
3. Determine the depth to plant by measuring the distance from the bottom of the root ball to the root collar.
4. Remove all tags, ribbons, and trunk guard and gently **ROLL** the tree into its space. **DO NOT** drag or lift the tree by its trunk.
5. Carefully remove soil from the top of the root ball to expose the root collar. Be sure the root collar is either **LEVEL** or 1-2 inches **ABOVE** the surface. Remove burlap, twine, and/or wire.
6. Back fill the planting space with soil.
7. Water to thoroughly eliminate all air pockets – do not pack/tamp.

## TREE PLANTING RESOURCES

### Wisconsin DNR Resources

- Urban Tree Planting Resources website  
[dnr.wisconsin.gov/topic/urbanforests/treeplantingresources](https://dnr.wisconsin.gov/topic/urbanforests/treeplantingresources)
- New Tree Planting Brochure PUB-FR-184 2016
- New Tree Planting Poster PUB-FR-261 2003

### Videos (search titles on YouTube)

- WIDNRTV: Planting a Balled and Burlapped Tree
- WIDNRTV: Planting a Tree from a Container
- Arbor Day Foundation: Planting Bare-root Trees
- Utah State University Extension: How to Plant Bare-root Trees

# TREE PLANTING AND FOREST HEALTH



## CARING FOR TREES

### Caring for a Tree

Teach students how to care for trees after they are planted by sharing these tips.

### Watering (Always Check Soil Moisture Before Watering)

- Water daily for 1-2 weeks after planting
  - 1 inch diameter trunk = 10 gallons of water
  - 2 inch diameter trunk = 20 gallons of water
- Water every 2-3 days for 3-12 weeks after planting

### Mulching

- Apply 2-4 inches of mulch over the root zone
- Keep mulch 3-6 inches away from the trunk of the tree

### Staking

- Most trees do NOT need to be staked
- If staking is necessary, use wide webbing straps and secure webbing to stakes with heavy gauge wire
- Make sure the tree can move

### Pruning

- Less is better; new trees need all the leaves they can get
- Prune only dead, broken, diseased, or rubbing branches

### Additional Forestry Education Resources

- Find additional resources on the Wisconsin DNR website at [dnr.wisconsin.gov/education/forests](http://dnr.wisconsin.gov/education/forests)

## DISCUSSION

- What things are important to consider BEFORE planting a tree?
- What things are important to consider WHILE planting a tree?
- What things are important to consider WHEN CARING for a tree?
- Where in your neighborhood/home is a good place to plant a tree?

## PRUNING RESOURCES

### Activity

- Indoor Pruning Activity:  
Use markers to draw lines on samples of tree limbs to indicate where and how to make appropriate pruning cuts (get samples from municipality)

### Other Resources

- USDA Forest Service Northeastern Area: How to Prune Trees (Google resource)
- Iowa State University Extension and Outreach Videos (look up titles on YouTube)
  - Principles of Pruning: Why and When to Prune
  - Principles of Pruning: Making a Good Cut
  - Principles of Pruning: Included Bark

# TREE PLANTING AND FOREST HEALTH



## INVASIVE TREE AND PLANT SPECIES

- Norway maple
- Amur maple
- Common buckthorn
- Tartarian honeysuckle
- Japanese barberry
- Burning bush
- Siberian elm
- Black locust
- Callery pear
- White mulberry
- Black alder
- Tree of Heaven
- Autumn Olive
- Garlic Mustard

## INVASIVE ANIMAL SPECIES

- Emerald ash borer
- Asian longhorn beetle
- Spongy moth
- Jumping worms
- Picnic beetle
- Hemlock woolly adelgid
- Spotted lanternfly

## INTRODUCTION: INVASIVE SPECIES

Share with students that INVASIVE SPECIES impact Wisconsin forests, lakes, rivers, and landscapes. Members of the community can help slow the spread of invasive species.

Tell students that to prevent the spread of invasive tree and plant species they should:

- Inspect clothing and equipment for seeds, insects, etc. before moving from one area to another.
- Leave native trees and plants alone.
- Be on the lookout for invasive species and follow specific instructions to remove invasive species from an area.

Explain that Wisconsin forests are also impacted by invasive animal species. Tell students that to prevent the spread of invasive animal species they should always follow Wisconsin's firewood rules.

- Get firewood where you use it.
- Don't move firewood from one location to another (unless it has been processed to eliminate pests and diseases).

## INVASIVE SPECIES PLANT GAME – MOVE! ATTACK OF THE INVASIVE SPECIES

Hungry Pest game developed by the USDA Animal and Plant Health Inspection Service ([www.aphis.usda.gov/plant-pests-diseases/hungry-pests/resources/educators](http://www.aphis.usda.gov/plant-pests-diseases/hungry-pests/resources/educators))

### Goals

- To help students understand how invasive species spread
- To help students understand how invasive species can impact native species

### Preparation

In advance of the activity, review Student Resource 6 or the printable Google resource. Read the Activity Overview, gather the supplies needed, and prepare the playing field by placing pest pathways in different locations across the playing field.

# TREE PLANTING AND FOREST HEALTH



## ATTACK OF THE INVASIVE SPECIES – OUTDOOR/GYM ACTIVITY

### Activity Instructions

1. Tell students that they are going to play a tag-like game to learn how pests (invasive species) travel and what people can do to prevent the spread of pests.
2. Divide the students into two teams: Invasive Species and Nature Protectors. Select two-thirds of the students to be on team Invasive Species and one-third of the students to be on team Nature Protectors. Give each team different colored flags or pinnies to wear.
3. Direct students' attention to the playing field. Tell them that each item in the playing field represents a path that can lead to the spread of invasive species.
4. Ask students if they can determine what each item in the playing field represents. Allow students to share their thoughts. Confirm correct answers and help guide students who share incorrect answers to correct answers. If students are struggling, provide examples:
  - a. BOOT = Dirt stuck to a boot can carry invasive plant seeds from one area to another.
  - b. WOOD = Infested firewood can carry invasive insects from one campground to another.
5. Tell students that during the game, Nature Protectors must tag Invasive Species before they reach a pathway.
6. Explain to students that when Invasive Species reach a pathway they are safe; however, only one Invasive Species can be at a given pathway at a time. Invasive Species are encouraged to try to move from pathway to pathway – their goal is to spread.
7. Also explain that when a Nature Protector tags an Invasive Species, the Invasive Species becomes a Nature Protector. For every three Invasive Species the Nature Protectors catch, they can eliminate one pathway from the playing field.
8. Tell students that the game ends when:
  - a. all invasive species have been caught.
  - b. all pathways are eliminated.
  - c. they have reached the time limit (5-10 minutes).

## TREE PLANTING AND FOREST HEALTH



9. Tell students that you are going to play the game again but with different rules that represent different scenarios. After sharing a new rule, ask students what they think the rule change represents. After playing a round with a new rule, discuss the different outcomes.
  - a. Have one-third of the students be Invasive Species and two-thirds of the students be Nature Protectors. (This can represent a scenario where invasive species have recently been introduced so their populations aren't as high yet. It should be easier to catch all Invasive Species and remove all pathways in this scenario.)
  - b. Play the game with obstacles in an area with trees or have students be the obstacles. (This demonstrates that ecosystems have other species/factors in them that may increase/decrease the ability of invasive species to spread. It should be more difficult to catch all Invasive Species and remove all pathways in this scenario.)
  - c. Increase/decrease the boundaries of the playing field. (This can show that if invasive species are confined to a smaller area, they are easier to control. It should be easier to catch all Invasive Species and remove all pathways in this scenario.)
  - d. Allow Invasive Species to run while making Nature Protectors walk. (This can show how quickly Invasive Species can spread. You could share how oftentimes we don't have other species that can eat invasive species to keep their populations down. It should be more difficult to catch all Invasive Species and remove all pathways in this scenario.)

### DISCUSSION

Ask students the following questions and discuss their answers.

- What factors help invasive species spread?
- What things can people do to prevent the spread of invasive species?
- Why is it important to prevent the spread of invasive species?

Ask students if they know what invasive species can be found in forests in your area and the impacts of them on the forests (urban and rural). Share some of the most common with students. Consider bringing along tools/resources that will help students be able to identify these species. Share with students what they should do if they encounter invasive species. Are there some they should try to remove? Are there some they should report?

# TREE PLANTING AND FOREST HEALTH



## INVASIVE SPECIES PLANT ACTIVITY – THE GREAT EAB ESCAPE

Hungry Pest activity developed by the USDA Animal and Plant Health Inspection Service ([www.aphis.usda.gov/plant-pests-diseases/hungry-pests/resources/educators](http://www.aphis.usda.gov/plant-pests-diseases/hungry-pests/resources/educators))

### Goal

To help students understand that the movement of firewood may contribute to the spread of the emerald ash borer (EAB) beetle.

### Preparation

In advance of the activity, review Student Resource 7a, Student Resource 7b and Student Resource 7c or the printable Google resources. Read the overview, gather the supplies needed, and set up locations around the schoolyard or learning space.

- Gather 25 sticks (12 short and 13 long) and prepare five bundles of five sticks.
  - Each bundle should have five total sticks in any combination of short and long.
  - Actual sticks are ideal; however, if none are available you can use different sized popsicle sticks.
- Print and fold five EAB Investigators (see Student Resource 7c or the printable Google resources). CIRCLE a different question on each of the five EAB investigators. Questions include:
  - What species of tree does the EAB love to eat? (ASH TREES)
  - Where does the EAB lay its eggs? (ON THE BARK OF ASH TREES)
  - What spreads EAB? (PEOPLE MOVING FIREWOOD)
  - How does the EAB larvae kill a tree? (EAB LARVAE KILL A TREE BY DISRUPTING THE SYSTEMS THAT TRANSPORT FOOD AND WATER IN THE TREE.)
  - What is metallic, green and flies? (EMERALD ASH BORER BEETLE)
  - Guitars, most baseball bats and some furniture are made of what kind of wood? (ASH WOOD)
  - How can you stop EAB from spreading? (DON'T MOVE FIREWOOD)
  - The EAB is only 1/2 inch long. What is the smallest coin an EAB can fit on? (PENNY)
- Choose five locations in the schoolyard (learning space) to represent forest, campground, trail, backyard, and neighborhood park. In advance of the activity, consider making signs with location names for leaders to post.

# TREE PLANTING AND FOREST HEALTH



## Procedure

1. Read the back story found in The Great EAB Escapade activity (see Student Resource 7a and Student Resource 7b or the printable Google resources) document or lead a discussion with students about what the emerald ash borer (EAB) beetle is and how it came to Wisconsin. If you opt to have a discussion instead of reading the story, make sure you share the information students need to correctly answer the five questions you circled on the EAB Investigators (see Student Resource 7c or the printable Google resources).
2. Tell students that you are going to need five people to be location leaders. Explain that the responsibility of a location leader is to read a quiz question to each team. Ask for volunteers.
  - a. Pick a diverse mix of students to be location leaders.
  - b. Give each location leader an EAB Investigator (see Student Resource 7c or the printable Google resources). Ask them to find the circled question.
  - c. Tell leaders that when teams arrive at their location, they must ask them the circled question. If the team gets it correct, the team leaves a stick from their bundle at the location and then moves on to another location. If the team gets the question incorrect, they move on but do not leave a stick.
  - d. Send location leaders to one of the five locations you have pre-determined. Tell them what their location represents (forest, campground, trail, backyard, neighborhood park).
3. Divide the remaining students into five teams; give each team a bundle of sticks.
4. Tell students that they are going to participate in a race. Point out the five locations to students and explain what each represents (forest, campground, trail, backyard, neighborhood park). Explain that they need to go to each location as quickly as possible. When they arrive at a location:
  - a. Location leaders will ask them a question.
  - b. If they answer the question correctly, they will leave a stick from their bundle at the location.
  - c. If they answer the question incorrectly, they cannot leave a stick at the location.
  - d. As soon as they are done they run to the next location.
  - e. Encourage teams to avoid going to locations when other teams are there since only one team may answer a question at a time.
5. Share that the winning team is the first team to visit every location AND have no sticks (or the fewest number of sticks) left in their bundle.
6. Have a countdown to start the race.

# TREE PLANTING AND FOREST HEALTH



## DISCUSSION

Once all teams have completed their journey and the winning team has been determined, lead a class discussion. Explain to students that the sticks they were carrying represented firewood and that the long sticks represented firewood that was infested with EAB!

Walk with the class back to each location and see how much EAB firewood was left behind. Discuss the following questions:

- Which locations had firewood at them? (PROBABLY ALL OF THEM.)
- Could you tell when you left the firewood that it had the EAB hidden inside? (NO)
- What do you think will happen to ash trees in any of the locations if the firewood is infested with EAB? (THE TREES IN THE AREA COULD BECOME INFESTED WITH EAB.)
- Who put the infested firewood in the location? (WE DID, BUT WE DIDN'T KNOW WHICH FIREWOOD WAS INFESTED WHEN WE LEFT IT THERE.)
- What does this tell you about the spread of EAB and how it moves from location to location/state to state? (PEOPLE HELPED THE BEETLE MOVE BY MOVING FIREWOOD FROM ONE PLACE TO ANOTHER. PEOPLE CANNOT TELL WHICH FIREWOOD MAY HAVE EAB LARVAE IN IT.)
- What can we do to prevent the spread of EAB? (DON'T MOVE FIREWOOD!)

## INVASIVE SPECIES: WISCONSIN WORM WATCH

In this lesson, students participate in a citizen science project and determine if invasive earthworms are present in a forest.

### Background

All earthworms in Wisconsin are invasive species! There have been no native worm species in Wisconsin since the last glacial period. Humans have introduced about 20 species of earthworms to Wisconsin from Europe and Asia by accident, or for farming/fishing. Although worms can be good for gardens, they are harmful to hardwood forests.

### Materials

- Mustard powder
- Disposable plastic water jugs (one gallon or larger filled with water)
- Earthworm identification book or tools
- Forest site
- Wisconsin Worm Watch Survey (see Student Resource 8a and Student Resource 8b or the printable Google resources)

# TREE PLANTING AND FOREST HEALTH



## Preparation

Mix 1/3 cup of mustard powder into one gallon of water and shake well. Do this about 20 minutes prior to conducting this activity. Shake well again when conducting activity.

## Instructions

1. Be sure all students have data sheets to record information/ observations (see Student Resource 8a and Student Resource 8b or the printable Google resources).
2. Select survey sites (approximately 2 feet x 3 feet).
3. Clear any ground covering.
4. Shake mustard mixture and pour half of it over survey area and count and sort worms that emerge for five minutes.
5. Pour the other half of the mixture over the site and count and sort worms for an additional five minutes.
6. Gather all supplies, keep the worms and move to a new location 10 to 20 feet away and repeat.
7. Record all findings and submit to the locations designated on the student sheet.

## Extension Activity

Create a graph. Plot the total number of juvenile and adult epigeic, endogeic, and anecic earthworms found in each sample plot.

## DISCUSSION

Use the following questions to lead a discussion:

- What type of earthworm was found in the highest quantity? Why do you think that was?
- Would you consider the total amount of earthworms found in your sample plots to be quantified at a low, medium, or high level?
- Based on this data, what conclusions can you draw about the soil conditions or amount of organic layer present in the forest?

Access a complete Worm Watch lesson in the Google resources.

# TREE PLANTING AND FOREST HEALTH



## REVIEW KEY MESSAGES

- There are many factors to consider when planting trees.
- It is as important to care for trees as it is to plant them.
- Invasive species impact Wisconsin forests.
- Humans contribute to the spread of invasive species.
- There are several things people can do to minimize the impact of invasive species on Wisconsin forests.

## OPTIONAL ACTIVITIES RELATED TO THIS THEME

- LEAF Urban Forest Lesson Guide 5-8; Lesson 3: Management Decisions and Biodiversity (Google resource)

## RECOMMENDED TEACHER RESOURCES

All recommended teacher resources are included in the Theme 4 Slideshow Presentation (Google resource). Resources can also be downloaded from the LEAF website ([uwsp.edu/wcee/wcee/leaf/leaf-curriculum](http://uwsp.edu/wcee/wcee/leaf/leaf-curriculum)). Please share the slideshow or link to the website with the educators you work with.

- LEAF Urban Forest Lesson Guide K-4 Unit
- LEAF Urban Forest Lesson Guide 5-8 Unit
- LEAF Urban Forest Lesson Guide 9-12 Unit
- LEAF K-12 Forestry Lesson Guides



Photo Credit: Wisconsin DNR

## ADDRESS QUESTIONS

- Are there any questions from the presentation?
- Collect notecards/sticky notes and answer questions.

# TREE PLANTING AND FOREST HEALTH



## LETTER TEMPLATE – CONFIRMATION LETTER

**Theme 1: What Does a Forester Do?**  
**Theme 4: Tree Planting and Forest Health**

Dear (Insert Your Name),

This letter confirms that I am scheduled to present “What Does a Forester Do?” and “Tree Planting and Forest Health” to your (insert grade level) class on (insert program date and time).

During my program students will:

- Examine the job of a forester.
- Understand how to become a forester and the skills needed to be a forester.
- Explore forestry-related careers.
- Explore what trees need to grow.
- Learn where trees should be planted.
- Learn how to care for planted trees.
- Understand what their tree might grow up to be used for.
- (OPTIONAL) Examine threats to the health of the planted trees.

Please review the information I have provided above and contact me if anything is incorrect.

If you would like to do any advanced preparation, feel free to have each student write a question for me on a notecard or sticky note. If time permits, I will answer these questions following the presentation.

I will check in at the office when I arrive. Please let someone in the office know that I am coming. I plan to arrive 10 to 15 minutes before the program is scheduled to begin to set up for the activities. I look forward to working with you soon!

Sincerely,

(Insert Your Name)

# TREE PLANTING AND FOREST HEALTH



## LETTER TEMPLATE – FOLLOW-UP LETTER

### Theme 1: What Does a Forester Do? Theme 4: Tree Planting and Forest Health

Dear (Insert Your Name),

Thank you for inviting me into your classroom to help students understand the role of a forester and how we can plant trees and keep Wisconsin forests healthy. I hope you and your students enjoyed the program.

If you would like to extend student learning and engagement related to forestry, planting trees and forest health following my visit, please consider these LEAF activities which can be found in the LEAF Wisconsin K-12 Forestry Lesson Guides on the LEAF website.

Link: [www.uwsp.edu/wcee/wcee/leaf/leaf-curriculum/](http://www.uwsp.edu/wcee/wcee/leaf/leaf-curriculum/)

### Theme 1: What Does a Forester Do?

- LEAF 2-3 Field Enhancement 1: I Can Be a Forester
- LEAF 5-6 Lesson 6: What Is Management?
- LEAF 7-8 Lesson 3: How Forests Are Managed

### Theme 4: Tree Planting and Natural Restoration

- LEAF Urban Forest Lesson Guide 5-8; Lesson 3: Management Decisions and Biodiversity

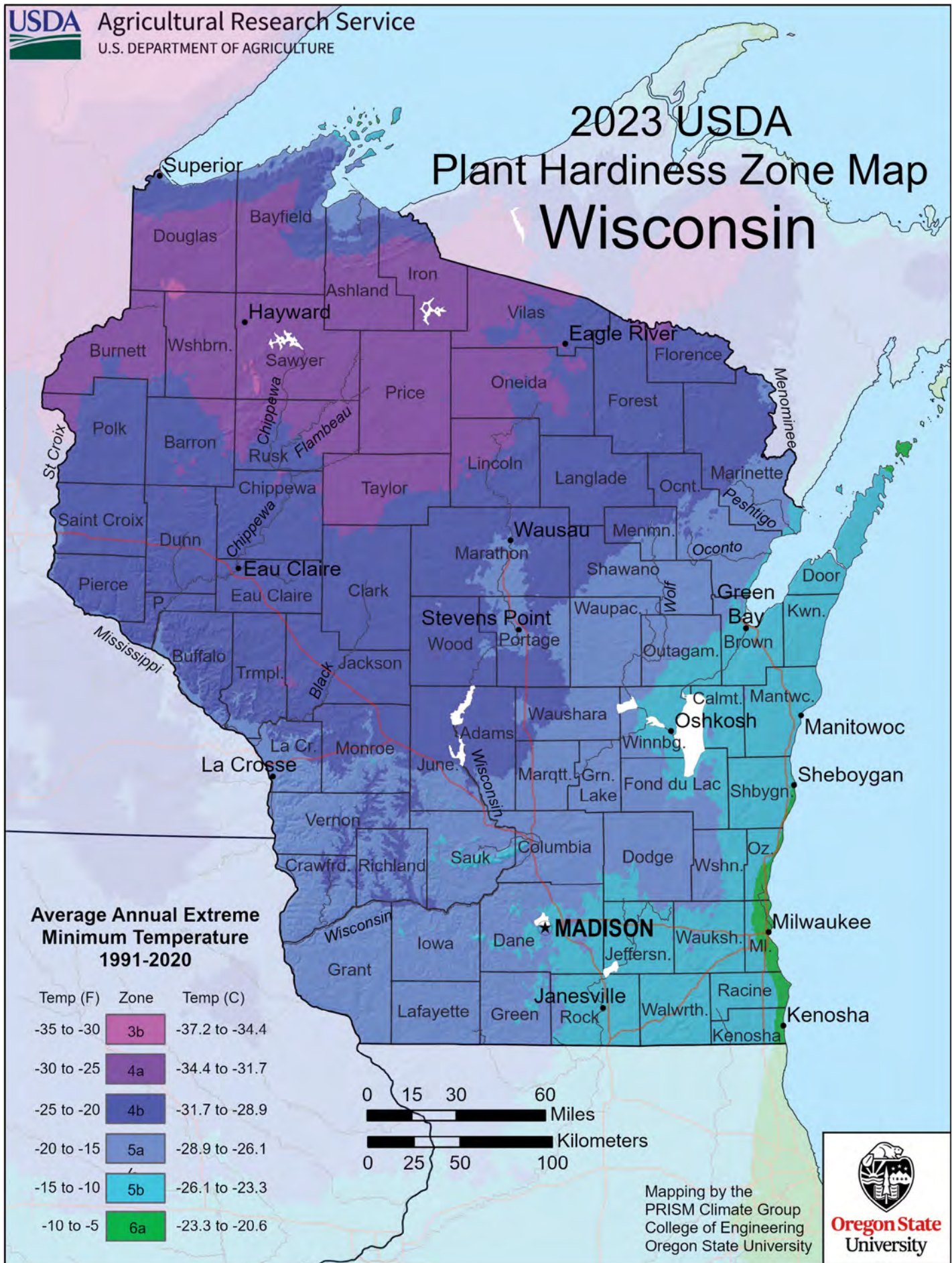
I also recommend the lessons from the LEAF Urban Forest Lesson Guide which can be accessed at the link shared above.

Please let me know if I can be of further assistance.

Sincerely,

(Insert Your Name)

# 2023 USDA Plant Hardiness Zone Map Wisconsin



# MOVE! “ATTACK OF THE INVASIVE SPECIES!”

**Activity Overview:** This active “tag-like” game can be played in an indoor gym or outdoors in a playground, park, or large campground. It gets kids to move while thinking and learning about how pests like to travel and what they can do to prevent their spread. (GROUP—Indoor/Outdoor)

**Time Needed:** 20+ minutes

**Supplies:** Color flags, pinnies/scrimmage vests, or T-shirts, a variety of pest pathways (boots, garden plants, firewood, backpacks, fresh produce, tires, hay, lawn furniture, bicycles, foreign souvenirs, barbecue grill, trailers, tents)

**Preparation:** Place pest pathways in different locations over the playing field.

## Activity Steps:

1. Divide kids into two teams: Invasive Species and Nature Protectors. Give them colored flags, pinnies/ scrimmage vests, or T-shirts to wear in their teams. For the first round, delegate two-thirds of the group to be on the Invasive Species team. Before starting the game, ask kids to identify all of the pest pathways they can see.
2. To play the game, Nature Protectors must tag Invasive Species before they reach a pathway. Once Invasive Species reach a pathway, they are safe. They can keep moving from pathway to pathway as the game progresses. If tagged, the Invasive Species turn into Nature Protectors. Nature Protectors can eliminate one pathway for every three Invasive Species that they catch.
3. The game ends at time, after all Invasive Species have been caught, or once all pathways are eliminated. Play again and again!

## Step Up the Challenge!

- Play the game with obstacles (among trees, shrubs, or in a playground) or over a wider area. If space is limited, or if playing indoors with a large group, assign a few students to act as natural obstacles.
- Add a rule that Nature Protectors have to walk while Invasive Species can run.

“SO MUCH TO CHEW ON!  
I MEAN...  
THINK ABOUT.”



GORGING THEMSELVES ON LEAVES, GYPSY MOTH CATERpillARS DEFOLIATE, WEAKEN, AND CAN KILL MORE THAN 300 DIFFERENT SPECIES OF TREES AND SHRUBS.

For more information, visit



# The Great EAB Escapade

## Outdoor Activity

### Primary Objective:

Kids will test their knowledge about the Emerald Ash Borer (EAB) beetle. At the conclusion of the activity, kids will also discover how the movement of firewood may or may not spread the pest and therefore, you should never move it.

### Overview:

Use this activity to introduce your campers/scouts/students to the EAB. You can alert them to the EAB's destructive habits, and how they can take action and **Stop The Beetle!** The activity is fun to play outside ... but it can work inside on a rainy day, too! "Location Leaders" will challenge teams with EAB trivia questions during the activity.



### Supplies Needed:

- Bundles of sticks, one for each team or individual (5 sticks of *long* and *short* lengths per bundle. Be sure the sticks are easily distinguishable as long or short; quantities of long versus short should vary per bundle.)
- 5 Copies of the *EAB Investigator* (one per "location"), assembled. Circle a different question on each *Investigator*. (This will be the question asked at a specific location.)



### Getting Ready:

1. Familiarize yourself with the EAB information in the Leader's Folio, to be able to answer questions.
2. Choose 5 separate spots to serve as imaginary "locations" (they can be outside or inside, but should be within sight distance of each other):  
*Note: you may choose to invite Team Leaders to designate their own locations in Activity Step 1; see back page.*

- Forest
- Campground
- Fishing area
- Backyard
- Neighborhood Park

### "Back Story"

#### Introducing the Activity

**Gather your group together and tell them:** *There's something happening to the ash trees in our state. They're dying! Ash trees are important to both our environment and our economy.*

*A beetle called the Emerald Ash Borer beetle (EAB for short) is killing these trees. It's called "Emerald" because it's a beautiful metallic green color. But it's so small that it can fit on a penny – so in fact, you probably won't ever see one. The EAB lays its eggs on the bark of the tree, and when the eggs hatch, the larvae eat into the tree. They hide inside the tree where they develop and grow, disrupting the systems that transport food and water to the tree and eventually killing it.*



*We think the EAB got to the U.S. from Asia by "hitchhiking" in shipping materials. It was first detected in Michigan in 2002. Now, it has been detected in other States. So we have to wonder: How did it get to so many States?*



*Today, we'll visit fictional "locations" like the ones we have around our state. These are the types of places that may have ash trees that could be destroyed by the beetle. We're going to learn more about ash trees and the EABs that can harm them!*

**STOP THE BEETLE: NOW!**

[www.HungryPests.com](http://www.HungryPests.com)

## Activity Steps

1. Choose five kids to serve as Location Leaders, one for each fictional location. Give each Leader an assembled *EAB Investigator* (be sure a question is circled), and have him/her go to their "location."
2. Divide the remaining kids into teams of two or three (or, kids can work individually).
3. Give each team (or individual) a bundle of five (long and short) sticks.
4. As fast as they can, each team must go to each "location." (Encourage them to start in different directions, to avoid "crowding" in the closest location.) Once there, the Location Leader will pose his/her circled question from the *EAB Investigator*.  
**If answered correctly:** The team (or individual) will leave any stick from their bundle at the location, and move on to another location.  
**If answered incorrectly:** The team/individual can move on, but they can't leave a stick.
5. The winning team (or individual) is the first to visit every location and have no sticks (or the fewest number) left.



Extra copies of the *EAB Investigator* may be downloaded FREE at [www.HungryPests.com](http://www.HungryPests.com)

## Wrap-Up

Once all teams have returned to the starting point, explain to them that sticks they were carrying were "firewood." The long sticks represented EAB-infested firewood, while the short sticks were healthy logs. Where did the EAB firewood end up?

Walk with the group back to each location, and see how much EAB firewood was left behind. Ask the group:

- Which locations had firewood moved to them? (probably, all of them)
- Could you tell whether the firewood had the EAB hidden inside? (NO!!)
- What do you think will happen to the ash trees in the locations if the firewood is infested with the EAB? (The trees in the area will become infested with the EAB)
- Who put the infested firewood in the location? (The kids did ... but they didn't know which firewood was infested!)
- What does this tell you about how the EAB has moved from state to state? (People helped the beetle move, by moving firewood from one place to another. Just as the kids didn't know which sticks may be infested with EAB larvae, people can't tell if actual firewood may have EAB larvae in it.)

## Closure Message:

Even though they may not realize it, *people* are moving the beetle by moving firewood. If you move infested firewood to a new location, you can cause that location to become infested and ash trees will die. Since you can't tell if firewood is infested, the simple rule is to never move it.



Bottom Line: **Stop the Beetle . . . Now!**  
Everyone shouts: **Don't Move Firewood!**

**STOP THE BEETLE: NOW!**

[www.HungryPests.com](http://www.HungryPests.com)

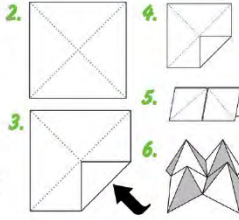
# EAB Investigator

www.HungryPests.com

You now know about the Emerald Ash Borer (EAB) beetle: how it hides under bark and destroys ash trees. You've discovered how important it is to stop it, so now you can share this news with others, too! Use this *EAB Investigator* to alert your family, friends, and neighbors. First, try to stump them with the EAB "investigation questions." Then, share what you've learned through your own *Stop the Beetle: Now!* exploration: EAB larvae can be hidden under the bark, so you should **never move firewood**. You never know what could be lurking inside!

## Folding Instructions

- Cut along the dotted line.
- Place the *EAB Investigator* image-side down. Fold 2 opposite corners together to form a triangle. Crease and unfold. Now fold the other 2 corners together; crease and unfold. You'll see the "center point."
- Fold each corner to the center point.
- Turn the folded paper over and fold each corner into the center.
- Fold the square in half. Unfold it and fold it in half the other way.
- Using both hands, place your thumbs and index fingers under the bark flaps.



## How to Play

- Have a player pick a number between 1 and 5. Open/close the *EAB Investigator* that many times.
- Now have the player choose a number on a bark flap (noted by EAB eggs), from 1 to 4.
- Ask the question under the chosen flap.
- Invite the player to answer, then lift the flap to see if correct.
- Be sure to show the player the *EAB* larvae hidden under the bark!

What's metallic green and flies?

What species of tree does EAB love to eat?

Guitars, most baseball bats, and some furniture are made of what kind of wood?

The EAB is only 1/2 inch long. What is the smallest coin an EAB can fit on?

A penny

Ash trees

Ash wood

On the bark of ash trees

Where does EAB lay its eggs?

How does the EAB larvae kill a tree?

EAB larvae kill a tree by disrupting the systems that transport food and water.

Don't move firewood!

How can you stop EAB from spreading?

People moving firewood

What spreads EAB?

What's metallic green and flies?

# WISCONSIN WORM WATCH SURVEY

Date of Survey: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

School: \_\_\_\_\_

Land Type:    Public    Private    Commercial    Tribal

Location: \_\_\_\_\_

Are there any distinctive landmarks? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Weather Conditions:    Sunny    Cloudy    Rainy    Slightly    Overcast

Air Temperature: \_\_\_\_\_°      Soil Temperature: \_\_\_\_\_°

Is there a duff layer (leaf litter)?    Yes    No    Measure depth? \_\_\_\_\_

## Mustard Extraction Instructions:

1. Select site.
2. Clear any ground covering and lay down frame.
3. Mix a 1/3 cup of mustard powder in one gallon of water and shake well.
4. Pour over area and count and sort worms that emerge for five minutes.
5. Make sure all the worms are gathered then pour the other half over and wait an additional five minutes.
6. After gathering all supplies keep the worms and move on to a new location 10 to 20 feet away and repeat.

## SUBMIT FINDINGS TO:

Wisconsin Department of Natural Resources Forest Health Specialists (email) at:  
**[invasive.species@wisconsin.gov](mailto:invasive.species@wisconsin.gov)**

EDDMapS (Early Detection and Distribution Mapping System) for Invasive Species:  
[www.eddmaps.org/](http://www.eddmaps.org/)

**Remember to take pictures and record survey information on the back of this form.**

# WISCONSIN WORM WATCH SURVEY

Plot #: _____		
Type	Juvenile	Adult
Epigeic		
Endogeic		
Anecic		

Plot #: _____		
Type	Juvenile	Adult
Epigeic		
Endogeic		
Anecic		

Plot #: _____		
Type	Juvenile	Adult
Epigeic		
Endogeic		
Anecic		

Plot #: _____		
Type	Juvenile	Adult
Epigeic		
Endogeic		
Anecic		

Plot #: _____		
Type	Juvenile	Adult
Epigeic		
Endogeic		
Anecic		

Plot #: _____		
Type	Juvenile	Adult
Epigeic		
Endogeic		
Anecic		

Plot #: _____		
Type	Juvenile	Adult
Epigeic		
Endogeic		
Anecic		

Plot #: _____		
Type	Juvenile	Adult
Epigeic		
Endogeic		
Anecic		



5

**THE ROLE  
OF FIRE IN  
FORESTS**

Photo Credit: Wisconsin DNR

# THE ROLE OF FIRE IN FORESTS

## IN THIS LESSON YOU WILL FIND:

### LESSON WHICH INCLUDES

- Introduction to Wildland Fire and Background Information
- Outdoor Activities
  - Flame Game
  - Safe Campfire Practices
- Indoor/Outdoor Activities
  - Fire Safety with Smokey Bear (see Student Resource 11a, Student Resource 11b, and Student Resource 11c or the printable Google resources)
  - The Fire Triangle (see Student Resource 9 or the printable Google resource)
  - Wildland Fire Survey (see Student Resource 12 and Teacher Resource 1 or the printable Google resources)
  - Wildland Fire Facts and Myths Activity Sheet (see Student Resource 13 and Teacher Resource 2 or the printable Google resources)

### LINK TO GOOGLE RESOURCES

### OPTIONAL ACTIVITIES RELATED TO THIS THEME

- Wisconsin DNR Videos
- Wisconsin DNR Resources

### LEAF LESSONS THAT SUPPORT THIS THEME



Photo Credit: Wisconsin DNR



## THE ROLE OF FIRE IN FORESTS

### WISCONSIN DNR KEY TARGET MESSAGES

- Wisconsin has a plan to sustain the healthy, working forests vital to Wisconsin's well-being. (1)
- Everyone can help sustain Wisconsin forests (by being careful with fire, not spreading invasive species, using wood products rather than alternatives, planting and caring for a native tree, enjoying the outdoors responsibly and more. (8)

### WISCONSIN STANDARDS FOR ENVIRONMENTAL LITERACY AND SUSTAINABILITY

- Students examine the interactions and outcomes of cycles and flows in natural and cultural systems. (Strand 2: Explore; Standard 4)

### PRIMARY OBJECTIVES

- Students will examine the role of fire in forests.
- Students will differentiate between "good" fire and "bad" fire.
- Students will understand how to prevent unplanned forest fires.
- Students will explore careers related to fire in the forests.

### PREPARATION

- Read the lesson to familiarize yourself with what you need to explain and where you may need to elaborate.
- If you are presenting indoors and want to use the slideshow:
  - Reach out to the teacher to make sure there is a projector and computer with internet available.
  - Email the slideshow to the teacher and ask them to have it ready for your visit.
  - Select the slides that go with your desired activity.
- You know a lot about wildland fire. Feel free to make this lesson your own!



Photo Credit: Wisconsin DNR

# THE ROLE OF FIRE IN FORESTS

## MATERIALS

Google resources to support this theme can be accessed at [uwsp.edu/wcee/wcee/leaf/leaf-curriculum/lessons-for-forestry-professionals/](http://uwsp.edu/wcee/wcee/leaf/leaf-curriculum/lessons-for-forestry-professionals/).

Please share the appropriate grade level slideshow with the educator so they have access to materials used in the activity and other recommended teacher resources.

- Team Level Forester Kit
- Slideshow\_Theme 5\_The Role of Fire in Forests

### Outdoor Settings: Flame Game/Safe Campfires

- Wildland fire clothing, helmet, eye protection, gloves, and/or boots
- Wildland firefighter tools including a back can, bladder bag, axes, hoe, McLeod, Pulaski
- Items to represent flames that can be extinguished

### Indoor and Outdoor Settings

- Smokey Bear coloring pages (see Student Resource 11a, Student Resource 11b, and Student Resource 11c or the printable Google resources), drawing paper, crayons, colored pencils, markers
- The Fire Triangle (see Student Resource 9 or the printable Google resource)
- Wildland Fire Survey (see Student Resource 12 and Teacher Resource 1 or the printable Google resources)
- Wildland Fire Facts and Myths Activity Sheet (see Student Resource 13 and Teacher Resource 2 or the printable Google resources)



Photo Credit: Wisconsin DNR

Google resources to support this theme can be found at [leafprogram.org/fg](http://leafprogram.org/fg)



## MODIFICATIONS

### K-2 Audience

- Do not go over background information with students.
- Use outdoor lesson or Fire Safety with Smokey Bear.
- Use Wisconsin DNR 75th Birthday video.

### Elementary Audience

- Provide only brief background information.
- All activities are appropriate for this grade level.

### Middle and High School Audiences

- Use more of background information.
- Most activities can be appropriate for these grade levels.
- Consider using the additional resource, "Learning from the Ojibwe."

### Urban Setting

- Make sure you help kids connect with forests and campfires.

### Indoor/Outdoor Setting

- Lessons have notations about indoor and outdoor activities.



## THE ROLE OF FIRE IN FORESTS

### INTRODUCTION: WILDLAND FIRE AND BACKGROUND INFORMATION

Share the following information as you see fit for your audience.

There are two types of wildland fires:

- **WILDFIRES:** Unplanned fires started through human or natural (lightning) causes. Most Wisconsin wildfires are caused by human activities. Wildfires can take lives, destroy homes and property, and leave charred landscapes. Wildfire can have positive effects on fire-dependent ecosystems.
- **PRESCRIBE FIRES:** Planned fires ignited and controlled by land managers. Used to restore plant and animal habitat, reduce fuels to prevent dangerous wildfires, and control pests and diseases.

### Combustion (Grades 7-12 Only)

- Combustion is the act of burning.
- Combustion releases energy in the form of heat.
- Combustion is the opposite of photosynthesis.
  - **PHOTOSYNTHESIS:** Plants create energy from sunlight by combining water and carbon dioxide to make sugar and oxygen.
  - **COMBUSTION (Requires O<sub>2</sub>):** Sugars are broken down and energy is released as heat; carbon dioxide and water are components of smoke.

### The Fire Triangle

For fire to ignite and spread, three elements must be present. The elements can be thought of as the sides of a triangle (see Student Resource [9](#) or the printable Google resource).

- **HEAT:** Heat is needed to start and continue the combustion process. For fire to spread, heat must move from one piece of burning fuel to another.
- **FUEL:** There must be fuel to burn. Fuel characteristics (type, chemistry, size, shape) determine how intense a wildland fire burns and how far it spreads. The quantity of fuel and how it is arranged also influences fire. Fuels include trees, tree litter, grass, shrubs, and logging slash. Light fuels like grass burn very fast and hot. Heavy fuels like logging slash burn for longer periods of time.
- **OXYGEN:** Oxygen is needed for combustion.

If any one of these three elements is missing, the fire will extinguish!

# THE ROLE OF FIRE IN FORESTS



## Fire Season

In Wisconsin, most wildfires occur during the months of March, April, and May although fires can occur any time certain conditions are present:

- Low relative humidity
- Strong/constant winds
- High temperatures
- Fuels readily available to burn

## Fire Ecology (Cover the Basics Only With K-5)

Fire causes short- and long-term changes in ecosystem function, forest structure, and ecosystem composition.

- **ECOSYSTEM FUNCTION:** Ecosystem functions support life through the flow of energy and cycling of matter. Wildland fire can decompose organic material (e.g., leaves, sticks, logs) and make nutrients available for plants to grow. Wildland fire can clear forest trees, shrubs, and other organic material so sunlight can reach the ground and stimulate new plant growth. New plant growth after fire provides food to many types of animals.
- **FOREST STRUCTURE:** Forest structure is the vertical and horizontal spacing of trees in a forest. Both can be changed by wildland fire.
  - Vertical Layers: Overstory and understory
  - Horizontal Spacing: Density of tree cover across the landscape
- **ECOSYSTEM COMPOSITION:** The type and distribution of plants and animals in an area is changed by wildland fire. Some plants cannot survive wildland fire (e.g., maple). Other plants are resistant/resilient (e.g., oak and Jack pine). Fire increases: 1) species diversity; 2) flower, seed, fruit, or nut production; 3) animal numbers and species (eventually). Fire also makes soil more fertile.

## Fire-dependent Ecosystems

Wisconsin fire-dependent ecosystems include prairies, sedge meadows, oak savannas, and pine barrens.



Photo Credit: Wisconsin DNR



## THE ROLE OF FIRE IN FORESTS

### WISCONSIN BURNING PERMITS

- Burning permits are required by the Wisconsin DNR to encourage the public to burn safely.
- Burning permits are free and easy to obtain.
- Burning permits prove to be effective.

### STEPS TO SAFE BURNING

1. Get a permit.
2. Check before burning – after 11 a.m. on the day you wish to burn.
3. Check the daily burning restrictions for your county.
4. Follow the rules. For more information, visit the Wisconsin DNR website ([dnr.wisconsin.gov/topic/forestfire/permits](http://dnr.wisconsin.gov/topic/forestfire/permits)).

### FIRE AND HUMANS

Wildfires need a source of ignition – human activities cause the majority of fire ignitions in Wisconsin (over 90% each year).

- Outdoor burning
- Sparks from railroads
- Machinery
- Individual and group activities in rural, forested, or grassland areas

### Early American Indian Tribes

Fire was used to create animal habitat and clear areas for agriculture.

- NORTH: Created tree stands of different ages, structures, and composition.
- SOUTH: Expanded grasslands, prairies, and savannas.

### 1800s

European settlers began to log, farm, and build towns.

- NORTH: Many small fires were allowed to burn to clear more farmland. Often small fires turned large due to fuels left behind from logging.
- SOUTH: Fire was reduced due to agriculture, and resulted in the loss of bison, elk, and cougar that depended on grasslands, prairies, and savannas to survive.
- The largest fire in Wisconsin's history was the Peshtigo Fire of 1871. It burned in Wisconsin and Michigan killing over 1,500 people and burning 1.5 million acres.

### 1904

Fire control efforts begin in Wisconsin.

### 1920s-1940s

Fire prevention is adopted. Smokey Bear is introduced in 1944.

### Present Day

Use of forest management and prescribed fires.



Photo Credit: Wisconsin DNR

# THE ROLE OF FIRE IN FORESTS



## FLAME GAME

GOAL: To understand how fires are extinguished and the tools used to extinguish them.

### Materials

- Safety gear that wildland firefighters wear (e.g., fire-resistant clothing, helmet, eye protection, gloves, boots).
- Items to represent flames that students can extinguish or knock down (e.g., traffic cones or wooden fire cut-outs).
- Tools to put out the fire (e.g., back can, bladder bags, axe, hoe)

### Procedure

- Set up the fire ahead of time (items for students to knock down).
- Show students the safety gear. Allow them to try it on, if possible.
- Allow students to take turns extinguishing the fire with available tools.

### Extension

- Discuss and show tools that can be used to prevent the spread of fire (e.g., axes, hoes, Pulaski, McLeod, etc.)
- Allow students to try to use some of these tools.

## SAFE CAMPFIRE PRACTICE

GOAL: To learn how to safely build, light, and extinguish a campfire.

### Materials

- Safe space to build a fire, fuel, ignition source, bucket, and water.

### PROCEDURE

- Go through the steps to build a fire (only light if allowed on-site).
- Go through the proper steps to extinguish a fire; complete these steps using water even if the fire was not lit.

### Extension

- Discuss other times care is needed with recreational fires including while using grills, camp stoves, and lanterns.



## THE ROLE OF FIRE IN FORESTS

### FIRE SAFETY WITH SMOKEY BEAR (K-2)

GOAL: To understand Smokey Bear's messages.

#### Materials

- Smokey Bear coloring pages (see Student Resource 11a, Student Resource 11b, and Student Resource 11c or the printable Google resources)
- Drawing paper
- Crayons, colored pencils, or markers

#### Procedure

1. If indoors, share the Wisconsin DNR video, "F.I.R.E. – Happy 75th Birthday Smokey Bear" (WIDNRTV YouTube).
2. Discuss Smokey Bear's messages.
  - Only you can prevent wildfires!
  - Help Smokey prevent wildfires!
  - 9-out-of-10 wildfires are caused by people!
  - Careless campers cause fires!
  - Drown your campfires!
  - Smokey's friends don't play with matches!
3. Have students color Smokey Bear coloring pages (see Student Resource 11a, Student Resource 11b, and Student Resource 11c or the printable Google resources) OR create a picture of their own to share one of Smokey Bear's messages.

#### DISCUSSION

Ask students the following questions and discuss their answers.

- Why is it important to prevent wildfires?
- Why is it everyone's job to prevent wildfires?



# THE ROLE OF FIRE IN FORESTS



## THE FIRE TRIANGLE (GRADES 2-3 AND UP)

GOALS: 1) Students will identify and describe the three sides of the fire triangle; and 2) Students will explain how the fire triangle can be used to have a safe campfire.

### Materials

- Image of The Fire Triangle (see Student Resource 9 or the printable Google resource)

### Procedure

1. Explain to students that to understand fire, they need to understand the fire triangle. Show them the image and tell students that for fire to ignite and burn, it needs three things: heat, oxygen, and fuel. Explain where these things come from.
2. Tell students that if you take away one of the sides of the fire triangle, the fire will go out AND that if any one of the sides is missing, a fire will not start. By understanding the fire triangle, people can prevent the start of wildfires.
3. Help students understand the fire triangle by using the following examples:
  - Suppose we want to have a campfire, what will we need to light it? (MATCHES, THEY ARE A SOURCE OF HEAT.)
  - How do we keep the campfire burning? (ADD WOOD, THAT IS FUEL.)
  - How can we make sure that the campfire doesn't get out of control? (MAKE SURE THERE IS NO SOURCE OF HEAT OR FUEL NEAR/AROUND THE CAMPFIRE.)
  - How can we make sure there is no heat/fuel around our campfire? (WE CAN CLEAR AWAY ALL OF THE STICKS AND LEAVES AROUND THE FIRE. WE CAN BUILD A FIRE RING OUT OF NONFLAMMABLE MATERIALS LIKE ROCKS. WE CAN MAKE SURE WE HAVE WATER NEARBY TO SMOTHER ANY FIRE THAT STARTS OUTSIDE OF THE RING WHICH IS TAKING AWAY OXYGEN.)
  - What if it is very windy? How will that affect the fire? (IT WILL ADD MORE OXYGEN AND MAKE THE FIRE BURN HOTTER AND FASTER. IT CAN ALSO CARRY SPARKS – SOURCES OF HEAT – OUTSIDE THE FIRE RING. WE NEED TO MAKE SURE IT ISN'T TOO WINDY.)

### DISCUSSION

Ask students the following questions and discuss their answers.

- Explain how all sides of the fire triangle work to produce fire.
- Explain how understanding the fire triangle can help prevent fire.



## THE ROLE OF FIRE IN FORESTS

### WILDLAND FIRE SURVEY

GOAL: To understand how fires start, the role of fire in nature, and how we can prevent and be safe with fire.

#### Materials

- Wildland Fire Survey (see Student Resource 📄12 and Teacher Resource 📄1 or the printable Google resources)

#### Procedure

1. Explain to students that the prevention of wildfire depends on the public understanding how fires start, the role of fire in nature, who is responsible for destruction caused by wildland fire, and how we can be safe with fire. Tell students that during this activity, they will see what they know about these aspects of fire.
2. Give each student a copy of the Wildland Fire Survey (see Student Resource 📄12 or the printable Google resource). Allow them about five minutes to complete the survey independently.
3. Once all students are finished, go through the survey question by question and have students share their answers. Discuss the correct answer for each question (see Teacher Resource 📄1 or the printable Google resource).

### DISCUSSION

Ask students the following questions and discuss their answers.

- What questions had the most incorrect answers?
- How could misconceptions about these questions lead to misguided decision-making or action about fire?
- What two things do you think are MOST important for everyone who lives in Wisconsin to know about wildland fire?



Photo Credit: Wisconsin DNR

# THE ROLE OF FIRE IN FORESTS



## FIRE MYTH OR FACT

GOAL: To understand that to effectively manage wildland fire, people must make decisions based on facts not myths.

### Materials

- Wildland Fire Facts and Myths Activity Sheet (see Student Resource 13 and Teacher Resource 2 or the printable Google resources)

### Procedure

1. Ask students to define the word myth. (AN IDEA THAT IS NOT SUPPORTED BY EVIDENCE.)
2. Explain to students that for people to effectively manage wildland fire, they must make decisions based on facts and not myths.
3. Divide students into teams of two and have each pair identify each statement on Wildland Fire Facts and Myths Activity Sheet (see Student Resource 13 or the printable Google resource) as a myth or fact. Allow students about five minutes.
4. On the board or large poster paper, make two columns and label one "Fact" and the other "Myth." Write the numbers 1 through 6 next to the columns.
5. Go through the questions and have students raise their hand to show whether they think each statement is a fact or myth. Allow students to explain their reasoning.
6. Once you have totals for all statements, share the correct answers and discuss answers that students had incorrect.
7. Discuss what would happen if people based decisions on some of the myths.
8. Tell students preventing destructive wildfires and maintaining the ecological benefits of wildland fire requires that people make informed decisions based on facts.

### Extension

Suggest teachers and students read "Up in Smoke: Spring Means Peak Time for Wildfires in Wisconsin" by Joshua Morris, *Wisconsin Natural Resources* magazine (Spring 2022).



## THE ROLE OF FIRE IN FORESTS

### ADDRESS QUESTIONS

- Are there any questions from the presentation?
- Collect notecards/sticky notes and answer questions.

### REVIEW KEY MESSAGES

- Over 90% of all wildland fires in Wisconsin are started by humans.
- Education about wildland fire and fire prevention is important.
- Fire needs three elements to start or spread: heat, fuel, and oxygen.
- Prescribed burning is an important tool for fire and forest management.

### OPTIONAL WISCONSIN DNR VIDEOS RELATED TO THIS THEME

- Wisconsin Smokey Singers "F.I.R.E. – Happy 75th Birthday Smokey Bear" (WIDNRTV YouTube)
- Gear Up for Fire Season
- Be Ember Aware. Cottages and Cabins
- Think Your Fire is Out?
- State Natural Areas – Prescribed Fire 2017
- Fire Season is Here!

### OTHER WISCONSIN DNR OR U.S. FOREST SERVICE RESOURCES

- How Does the DNR Fight Wildfires? (article by Catherine Koele, Wisconsin DNR Forestry News, May 9, 2022)
- Wildland Firefighter Employment ([dnr.wi.gov](http://dnr.wi.gov))
- Wildland Fire Careers ([www.fs.usda.gov](http://www.fs.usda.gov))
- Up in Smoke: Spring Means Peak Times for Wildfires in Wisconsin (article by Joshua Morris, *Wisconsin Natural Resources* magazine, Spring 2022)
- Forest Fire ([dnr.wi.gov](http://dnr.wi.gov))
- Fire Management Dashboards ([dnr.wi.gov](http://dnr.wi.gov))
- Safe Burning Brochure, Wisconsin DNR (Google resource)

### RECOMMENDED TEACHER RESOURCES

All recommended teacher resources are included in the Theme 5 Slideshow Presentation (Google resource). Resources can also be downloaded from the LEAF website ([uwsp.edu/wcee/wcee/leaf/leaf-curriculum](http://uwsp.edu/wcee/wcee/leaf/leaf-curriculum)). Please share the slideshow or link to the website with the educators you work with.

- LEAF K-12 Wildland Fire Guide
- Wisconsin Forest Tales – Chapter 1: Saenomehsaeh Finds a Way ([dnr.wisconsin.gov/education/WisconsinForestTales](http://dnr.wisconsin.gov/education/WisconsinForestTales))
- Hot Topics: Wildfires & You (The California Forest Foundation) (Grades 4-8)

# THE ROLE OF FIRE IN FORESTS



## LETTER TEMPLATE – CONFIRMATION LETTER

### Theme 1: What Does a Forester Do? Theme 5: The Role of Fire in Forests

Dear (Insert Your Name),

This letter confirms that I am scheduled to present “What Does a Forester Do?” and “The Role of Fire in Forests” to your (insert grade level) class on (insert program date and time).

During my program students will:

- Examine the job of a forester.
- Understand how to become a forester and the skills needed to be a forester.
- Explore forestry-related careers.
- Examine the role of fire in forests.
- Differentiate between “good” fire and “bad” fire.
- Understand how to prevent unplanned forest fires.
- Explore careers related to fire in the forests.

Please review the information I have provided above and contact me if anything is incorrect.

If you would like to do any advanced preparation, feel free to have each student write a question for me on a notecard or sticky note. If time permits, I will answer these questions following the presentation.

I will check in at the office when I arrive. Please let someone in the office know that I am coming. I plan to arrive 10 to 15 minutes before the program is scheduled to begin to set up for the activities. I look forward to working with you soon!

Sincerely,

(Insert Your Name)



## THE ROLE OF FIRE IN FORESTS

### LETTER TEMPLATE – FOLLOW-UP LETTER

#### Theme 1: What Does a Forester Do? Theme 5: The Role of Fire in Forests

Dear (Insert Your Name),

Thank you for inviting me into your classroom to help students understand the role of a forester and the role of fire in our forests. I hope you and your students enjoyed the program.

If you would like to extend student learning and engagement related to forestry and the role of fire in forests following my visit, please consider these LEAF activities which can be found in the LEAF Wisconsin K-12 Forestry Lesson Guides on the LEAF website.

Link: [www.uwsp.edu/wcee/wcee/leaf/leaf-curriculum/](http://www.uwsp.edu/wcee/wcee/leaf/leaf-curriculum/)

#### Theme 1: What Does a Forester Do?

- LEAF 2-3 Field Enhancement 1: I Can Be a Forester
- LEAF 5-6 Lesson 6: What is Management?
- LEAF 7-8 Lesson 3: How Forests are Managed

#### Theme 5: The Role of Fire in Forests

- LEAF K-12 Wildland Fire Guide ([www.uwsp.edu/wcee/wcee/leaf/leaf-curriculum/wildland-fire-guide/](http://www.uwsp.edu/wcee/wcee/leaf/leaf-curriculum/wildland-fire-guide/))
- Hot Topics: Wildfires & You (link in lesson slideshow)
- Learning from the Ojibwe (link in lesson slideshow)

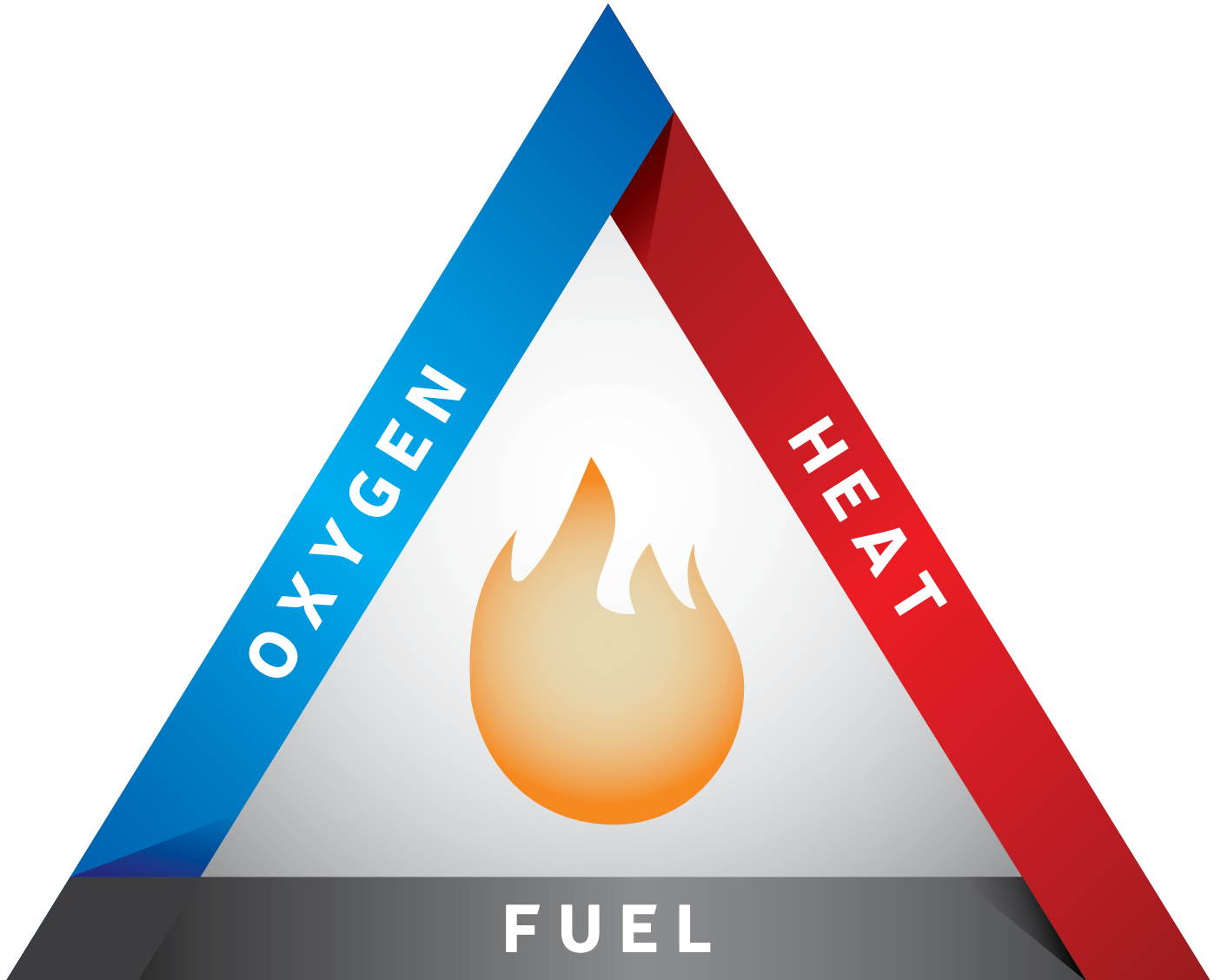
I also recommend several Wisconsin DNR videos, articles, and website resources that are linked in the lesson slideshow.

Please let me know if I can be of further assistance.

Sincerely,

(Insert Your Name)

## THE FIRE TRIANGLE



# Safe

# BURNING



Burn responsibly...or don't burn at all!

Debris burning is the number one cause of wildfires in Wisconsin. Using fire as a method to dispose of vegetative yard waste isn't the only option. While debris burning is legal in most places, let's face it...**it's unsafe, unhealthy and a nuisance.** If you choose to burn, follow these simple guidelines to ensure you are burning SAFELY:



## BEFORE BURNING

- Find alternatives to burning debris *before* deciding to burn
- Obtain proper burn permits and follow any restrictions
- Comply with local ordinances that may be more restrictive than state law
- Make certain you are only burning legal materials (*turn over for a complete list*)
- Keep an eye on the weather and avoid burning under windy conditions
- Make certain the area adjacent to the fire is free of all flammables



## DURING BURNING

- Have a water source and firefighting tools handy
- Keep the size of the fire small and manageable
- Maintain a mineral soil firebreak around the burn area
- Never leave your fire unattended
- If weather conditions change for the worst, put the fire out
- If your fire escapes, dial 911 immediately!



## AFTER BURNING

- Make sure the burn is completely out before leaving
- Use lots of water, drown, stir and repeat until cold
- Go back and check again later for any remaining smoke or embers
- Fun fact: use cold ashes from your burn as a bed for your garden. It makes a great fertilizer!

For a DNR burn permit or to check today's burning restrictions

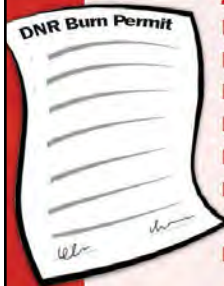
**dnr.wi.gov** (keyword "fire")

**1-888-wis-burn** (947-2876)

# Responsible BURNING



## WHAT CAN I BURN WITH MY DNR BURN PERMIT?



### Allowed

- Brush
- Leaves
- Pine needles
- Grass
- Clean wood
- Unrecyclable paper\*
- Unrecyclable cardboard\*



\*Recycling of clean paper and cardboard is required by law!

### NOT Allowed

- Garbage
- Plastics
- Shingles
- Foam
- Structures
- Furniture
- Wire
- Metal
- Electronics
- Vinyl products
- Rubber products
- Oil-based products
- Painted, stained or treated wood

## ALTERNATIVES TO BURNING

**REUSE** - Find someone else who can use it, have a yard sale or donate. Bring reusable shopping bags to the grocery store. Leave grass clippings on the lawn; they contain nutrients.

**RECYCLE** - Separate newspaper, magazines, cardboard, paper, glass, plastic and aluminum, steel or tin cans.

**DISPOSE** - Discard non-recyclable waste materials at a licensed landfill.

**COMPOST** - Mulch or collect leaves and plant clippings for composting or move brush piles in the woods for wildlife habitat.

**CHIP** - Collect brush and clean wood to make mulch or decorative chips, or use as heating fuel in fireplaces.

**WAIT** - Avoid burning in the spring. The safest time to burn is when the ground is completely snow-covered. Throw a tarp over legal materials and wait until it snows.

For a DNR burn permit or to check today's burning restrictions:

**[dnr.wi.gov](http://dnr.wi.gov)** (keyword "fire")

**1-888-wis-burn** (947-2876)

The Wisconsin Department of Natural Resources is an equal opportunity employer. Alternative format is available upon request. Please call (608) 267-7494 for more information.



PUB FR-551-2015



**Smokey's friends don't play with matches!**





AYUDE  
A PREVENIR  
LUMBRES  
FORESTALES

# WILDLAND FIRE SURVEY

Circle the correct answer/answers.

- Which of the following is the leading cause of wildfire in Wisconsin?
  - Debris burning
  - Fireworks
  - Lightning
  - Machine sparks
  - Smoking
  - Campfires
- Who is responsible for damages caused by an accidental, human-caused wildfire?
  - The government
  - The firefighters
  - The person who started it
  - The owners of the damaged property
- Everyone pays for the people and resources used to prevent and fight wildfires.
  - True
  - False
- Wildland fire is a natural process that maintains the health of forests and grasslands.
  - True
  - False
- The danger of catastrophic wildfire changes through the season. The most dangerous time of year is the fire season, which occurs in:
  - Winter (December, January, February)
  - Spring (March, April, May)
  - Summer (June, July, August)
  - Fall (September, October, November)
- Firefighters can stop every wildfire.
  - True
  - False
- What percentage of the 1,500 accidental fires in Wisconsin each year is caused by humans?
  - 20%
  - 50%
  - 70%
  - 90%
- Which of the following are legal to burn? (Circle all that apply.)
  - Plastic
  - Clean wood
  - Kitchen wastes
  - Wet paper
  - Treated or painted wood
  - Furniture
  - Yard waste (leaves, sticks, grass, etc.)

## 🍁 WILDLAND FIRE SURVEY KEY 🍁

Circle the correct answer/answers.

- Which of the following is the leading cause of wildfire in Wisconsin?  
**a. Debris burning (35%) <<<**  
b. Fireworks (3%)  
c. Lightning (5%)  
d. Machine sparks (24%)  
e. Smoking (4%)  
f. Campfires (7%)
- Who is responsible for damages caused by an accidental, human-caused wildfire?  
a. The government  
b. The firefighters  
**c. The person who started it <<<**  
d. The owners of the damaged property
- Everyone pays for the people and resources used to prevent and fight wildfires.  
**a. True (We pay for it through our taxes.) <<<**  
b. False
- Wildland fire is a natural process that maintains the health of forests and grasslands.  
**a. True (Eliminating fire from ecosystems can have negative impacts on forest health, and without proper management, lead to dangerous fire conditions.) <<<**  
b. False
- The danger of catastrophic wildfire changes through the season. The most dangerous time of year is the fire season, which occurs in:  
a. Winter (December, January, February)  
**b. Spring (March, April, May) <<<**  
c. Summer (June, July, August)  
d. Fall (September, October, November)
- Firefighters can stop every wildfire.  
a. True  
**b. False <<<**
- What percentage of the 1,500 accidental fires in Wisconsin each year is caused by humans?  
a. 20%  
b. 50%  
c. 70%  
**d. 90% <<<**
- Which of the following are legal to burn? (Circle all that apply.)  
a. Plastic  
**b. Clean wood <<<**  
c. Kitchen wastes  
d. Wet paper  
e. Treated or painted wood  
f. Furniture  
**g. Yard waste (leaves, sticks, grass, etc.) <<<**

# WILDLAND FIRE FACTS AND MYTHS ACTIVITY SHEET

Decide whether each statement is **FACT** or **MYTH** and circle the correct answer.

1. Wildland fire is bad for Wisconsin's forests and grasslands. It destroys ecosystems by killing plants and animals.
  - a. Fact
  - b. Myth
2. American Indian tribes living in what is now called Wisconsin intentionally started more wildland fires before settlers arrived than we do today.
  - a. Fact
  - b. Myth
3. All wildland fires are dangerous and pose a threat to human life, property, and natural resources.
  - a. Fact
  - b. Myth
4. Wildland fires can be planned and controlled in ways that benefit forests and grasslands and reduce the risk of catastrophic wildfires in the future.
  - a. Fact
  - b. Myth
5. Wildland firefighters have the resources to stop every wildfire.
  - a. Fact
  - b. Myth
6. Most destructive wildfires could be prevented if people knew how to be safe with fire.
  - a. Fact
  - b. Myth



Photo Credit: Wisconsin DNR

# WILDLAND FIRE FACTS AND MYTHS ACTIVITY SHEET KEY

Decide whether each statement is **FACT** or **MYTH** and circle the correct answer.

1. Wildland fire is bad for Wisconsin's forests and grasslands. It destroys ecosystems by killing plants and animals.
  - b. **Myth <<< Wildland fire has been a part of the Wisconsin landscape for hundreds of thousands of years. Many forest and grassland ecosystems depend on fire to remain healthy.**
  
2. American Indian tribes living in what is now called Wisconsin intentionally started more wildland fires before settlers arrived than we do today.
  - a. **Fact <<< American Indian tribes used fire to manage for wildlife and clear areas for farming. Many of our forests and grasslands were a result of the fires started before European settlement. Because of lower population densities, their close dependence on and understanding of local natural resources, and their often nomadic lifestyle, fire was much more widely used than it is today.**
  
3. All wildland fires are dangerous and pose a threat to human life, property, and natural resources.
  - a. **Fact <<< Every fire is dangerous and must be treated so. Without proper planning and control, a fire can easily get out of control. Prescribed fire should be undertaken only by a responsible and trained professional.**
  
4. Wildland fires can be planned and controlled in ways that benefit forests and grasslands and reduce the risk of catastrophic wildfires in the future.
  - a. **Fact <<< Prescribed fire can help maintain healthy prairie, grassland, and forest ecosystems. Prescribed fire can also reduce the fuel in a forest by burning built up branches and leaves on the forest floor and eliminating smaller trees. This can reduce the risk of severe fire in the future.**
  
5. Wildland firefighters have the resources to stop every wildfire.
  - b. **Myth <<< Wildfires that exhibit extreme fire behavior, such as crowning and torching, can cross roads, rivers, and the best made firebreaks. They can burn so hot that fire crews are not able to get enough water on them or move out of the way fast enough. Winds can alter the course of the fire, making any suppression strategy dangerous. Some fires are just too intense to stop.**
  
6. Most destructive wildfires could be prevented if people knew how to be safe with fire.
  - a. **Fact <<< Nine out of 10 wildfires in Wisconsin are accidentally caused by people. Of those, more than one-third are caused by people burning garbage and other debris outside. Improper disposal of ash, careless equipment use, smoking, matches, and fireworks are causes for most of the rest. All of these activities can be done safely to greatly reduce the number of destructive wildfires.**



LEAF-Wisconsin's K-12 Forestry Education Program  
College of Natural Resources  
**University of Wisconsin - Stevens Point**

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