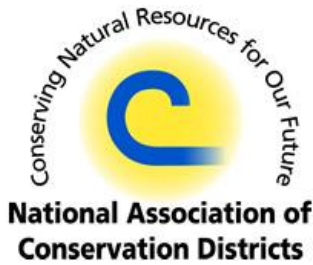




# Educators Guide



National Association of  
 Conservation Districts (NACD)  
 509 Capitol Court NE  
 Washington, DC 20002-4937  
 P: (202) 547-NACD (6223)

E-mail: [stewardship@nacdnet.org](mailto:stewardship@nacdnet.org)  
 Web: [www.nacdnet.org/education](http://www.nacdnet.org/education)

Susan M. Schultz—NACD Project Manager  
 Teresa D. Southerland— NACD Content writer

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Please submit information to share with others on your successful stewardship programs or conservation education activities.

- Erin Snyder**, Riverside-Corona Resource Conservation District, CA
- Debbie Ruff**, Livingston County Soil & Water Conservation District, IL
- Rick Mickowski**, New Castle Conservation District, Newark, DE
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- Cindy Pierce**, Skagit Conservation District, WA
- Sue Cummings**, US Forest Service, Washington, DC
- Vicki Arthur**, US Forest Service, Washington, DC
- Mendy Stewart**, Shavano Conservation District, CO
- Kay Antunez de Mayolo**, CA
- Thomas Shimalla**, Project Learning Tree (PLT), NY
- Joe Smith**, Forestry RPG, MA
- Doug Ruston**, Forestry RPG, WA
- Kathy McGlaulin**, Project Learning Tree, Washington, DC

**Educator’s guide information**

You can download this PDF educators guide from the NACD website. You can access information by clicking on the links and it will take you directly to the web page. You may also print out a page that you need.

<http://www.nacdnet.org/education/we-all-need-trees>



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Vermont	Michelle Green
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West Virginia	Jim Moore

**NACD Stewardship and Education Committee 2014-15**

**Advisors**

Oklahoma	Coletta Bratten NCDEA, Rep
Washington	Carolyn Kelly, NCDA Rep
Oklahoma	Lisa Knauf Owens National Association of State Conservation Agencies

Washington, DC James Tillman

**NACD Staff**

Susan Schultz,  
 NACD Stewardship & Education  
 Indiana





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The National Association of Conservation Districts is the non-profit organization that represents the nation's nearly 3,000 conservation districts, their state associations and the 17,000 men and women who serve on their governing boards. For almost 70 years, local conservation districts have worked with cooperating landowners and managers of private working lands to help them plan and apply effective conservation practices.

Conservation districts are local units of government established under state law to carry out natural resource management programs at the local level.

NACD's mission is to serve conservation districts by providing national leadership and a unified voice for natural resource conservation. The association was founded on the philosophy that conservation decisions should be made at the local level with technical and funding assistance from federal, state and local governments and the private sector. As the national voice for all conservation districts, NACD supports voluntary, incentive-driven natural resource conservation programs that benefit all citizens.

NACD maintains relationships with organizations and government agencies; publishes information about districts; works with leaders in agriculture, conservation, environment, education, industry, religion and other fields; and provides services to its districts. NACD is financed primarily through the voluntary contributions of its member districts and state associations.

The association's philosophy is that conservation decisions should be made by local people with technical and funding assistance from federal, state and local governments and the private sector. The association's programs and activities aim to advance the resource conservation cause of local districts and the millions of cooperating landowners and land managers they serve.

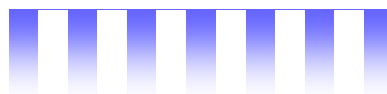
Visit [www.nacdnet.org](http://www.nacdnet.org) for additional information.  
To find your local district contact information, go to  
[www.nacdnet.org/about/districts/directory](http://www.nacdnet.org/about/districts/directory)

### STEWARDSHIP WEEK INFORMATION

NACD has sponsored Stewardship Week since 1955. **2016 marks the 61st year** to celebrate NACD Stewardship Week.

Education is a critical element of the conservation effort at the local, state and national levels. Educating youth ensures that the next generation will be wise stewards of America's natural resources. Helping today's adults understand the need for effective conservation practices builds on the conservation legacy. Through NACD's Stewardship and Education efforts, we help districts, educators and communities extend the reach of their education programs.

Stewardship Week, celebrated annually between the last Sunday in April and the first Sunday in May, reminds us of our individual responsibilities to care for the natural resources upon which we all depend.



# NACD Education Materials for 2016

Visit: <http://www.nacdnet.org/education/we-all-need-trees>

For additional information on the materials.



## Level 1-Grades K-1

### Booklet Objectives

Students will:

- Realize what trees must have to survive.
- Recognize the dependence of humans and other animals on trees and forests.
- Name items used daily that are a product of trees.
- Explain the steps in animal pollination.
- Recognize steps that can be taken to improve forest habitats.



### Next Generation Science Standards

*K. Interdependent Relationships in Ecosystems: Animals, Plants, and Their Environment*

K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive.

K-ESS3-1. Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live.

K-ESS3-3. Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.\* [Clarification Statement: Examples of human impact on the land could include cutting trees to produce paper and using resources to produce bottles. Examples of solutions could include reusing paper and recycling cans and bottles.]

#### *1. Structure, Function, and Information Processing*

Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.

#### *1.Space Systems: Patterns and Cycles*

Make observations at different times of year to relate the amount of daylight to the time of year.

### Vocabulary Words

Bark—Bark is the outermost layers of stems and roots of woody plants. Plants with bark include trees, woody vines, and shrubs.

Leaf—Main organ of photosynthesis and transpiration for plants and trees.

Pollinator—A pollinator is the biotic agent (vector) that moves pollen from the male anthers of a flower to the female stigma of a flower to accomplish fertilization

Pollen—Pollen is a fine to coarse powder containing the microgametophytes of seed plants, which produce the male gametes (sperm cells).

Root—the organ of plant that lies below ground and is responsible for water and nutrient absorption from the soil.

Sap— Sap is a fluid transported in xylem cells (vessel elements) or phloem sieve tube elements of a plant. These xylem cells transport water and nutrients throughout the plant.

<http://www.nacdnet.org/education/we-all-need-trees>



# WHY DO I NEED TREES?

## Level 1 Activity

### Activity Objectives

Students will:

- Realize the necessity of trees to their survival.
- Connect things they need, use and want to trees.
- Differentiate between what grows on trees and what is made from trees



### Materials

- clock with second hand or stopwatch
- single leaf from a tree if available, if not a picture of a leaf (see pg. 8).
- examples of items grown on trees and products made from trees (see pg. 9).
- "WHY DO I NEED TREES?" student worksheet (see pg. 10).

### Discussion & Activity Instructions

Before beginning the activity and discussion place several items from the list on page 9 in different areas of the classroom.

1. Instruct students to count how many times they take a breath during a 60 second interval that you time.
2. Discuss with students how important oxygen is and how their body uses it to function. Example: carried by bloodstream to brain and other organs.
3. If a leaf from a tree is available, invite students to examine it and talk with them how the oxygen they breathe into their bodies is generated by the green leaves of trees and plants.
4. Ask students if they can name other examples of ways in which we need/use trees.
5. Discuss with the students the difference between items that grow on trees and products made from trees.
6. Distribute copies of the "WHY DO I NEED TREES?" worksheet to students.
7. Instruct students to look around the room and name and/or draw a picture of 4 things in the room that grow on or are made of trees.
8. End the activity with a class discussion on all of the items in the room, as well as those they use at home, that grow on or are made of trees.



*Level 1 Activity*



leaf from Maple Tree

<http://www.nacdnet.org/education/we-all-need-trees>





## Level 1 Activity

Things we use that grow on/in trees:

- almonds
- apples
- bananas
- coconuts
- grapefruit
- lemons
- maple syrup
- olives
- oranges
- peaches
- pecans
- pears
- tangerines
- walnuts

Things we use that are made from wood:

- bar stools
- bird houses
- broom handles
- brushes
- canes
- chairs
- charcoal
- chop sticks
- coasters
- crutches
- cutting boards
- dog houses
- doors
- drum sticks
- fence posts
- firewood
- home insulation
- handrails
- matches
- modular homes
- paint brush handles
- pencils
- picture frames
- popsicle sticks
- porch swings
- shingles

- skewers
- tables
- tongue depressors
- toothpicks

Things we use that contain wood

pulp:

- animal feed additives
- art paper
- bakery bags
- bed sheets
- binders
- blankets
- blouses
- books
- calendars
- cardboard boxes
- catalogs
- cellophane
- ceramics
- cereal boxes
- clock facings
- coffee filters
- copy paper
- cosmetic puffs
- detergent boxes
- disposable diapers
- egg cartons
- electrical insulation
- envelopes
- facial tissue
- fast food wrapping
- filter paper
- folders
- furnace insulation
- game boards
- greeting cards
- grocery bags
- insecticide sprays
- jigsaw puzzles
- juice cartons
- labels
- magazines
- manuals
- milk cartons
- napkins

- newspapers
- oil filters
- paper cups
- paper plates
- playing cards
- price tags
- rayon
- sandpaper
- sausage casings
- seed starters
- spiral notebooks
- stationery
- surgical gowns
- tea bags
- tissue paper
- toilet paper
- toys
- wallpaper
- wrapping paper
- writing paper

Things we use that are that contain bark and/or cork from trees:

- arena footing for horses
- baseballs
- bath mats
- beauty bark for gardens
- ceiling tiles
- coasters for glasses
- corkboards
- dart boards
- desk pads
- fishing net floats
- floor tiles
- golf balls
- life jackets
- linoleum
- memo boards
- pipe insulation
- safety helmets
- shoes

<http://www.nacdnet.org/education/we-all-need-trees>



# WHY DO I NEED TREES?

How many breaths I take in one minute

\_\_\_\_\_

What helps me breathe? Trace the letters.

leaf



Draw a picture of four things that you need or want that grow on trees or are made from trees. Write the name of what you draw on the line.

1. \_\_\_\_\_ 2. \_\_\_\_\_

3. \_\_\_\_\_ 4. \_\_\_\_\_



## Level 2 Grades 2-3

### Booklet Objectives

Students will:

- Comprehend the relationship between respiration, climate, and other factors necessary for the support of life on Earth and trees.
- Utilize a global map to cite areas where a variety of animals depend upon trees for shelter.
- Identify the major components of a tree and their function.
- Relate trees to items used in their daily lives.
- Become aware of steps that can be taken to improve and protect the environment that trees depend upon.



### Next Generation Science Standards

#### *2. Structure and Properties of Matter*

2-PS1-4. Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot. [Clarification Statement: Examples of reversible changes could include materials such as water and butter at different temperatures. Examples of irreversible changes could include cooking an egg, freezing a plant leaf, and heating paper.]

#### *2. Interdependent Relationships in Ecosystems*

2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats.

#### *3. Inheritance and Variation of Traits: Life Cycles and Traits*

3-LS3-2. Use evidence to support the explanation that traits can be influenced by the environment.

#### *3. Interdependent Relationships in Ecosystems: Environmental Impacts on Organisms*

3-LS4-4. Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.

### Vocabulary Words

bark—the tough exterior covering of a woody root or stem.

carbon dioxide—a colorless, odorless gas produced by burning carbon and organic compounds and by respiration. It is naturally present in air (about 0.03 percent) and is absorbed by plants in photosynthesis.

crown—of a tree consists of the mass of foliage and branches growing outward from the trunk of the tree.

deforestation—the action or process of clearing of forests.

nutrient—a substance that provides nourishment essential for growth and the maintenance of life.

organic—of, relating to, or derived from living matter.

oxygen—a colorless, odorless reactive gas, the chemical element of atomic number 8 and the life-supporting component of the air.

rodent—a gnawing mammal of an order that includes rats, mice, squirrels, hamsters, porcupines, and their relatives, distinguished by strong constantly growing incisors and no canine teeth.

<http://www.nacdnet.org/education/we-all-need-trees>



# Make it Rain!

## Level 2 Activity

### Activity Objectives

Students will:

- Relate the water cycle process to precipitation.
- Comprehend the role of trees in the water cycle.
- Realize the dependence of food and water sources upon trees.

### Materials

- paper plate for each student
- glue, scissors and crayons/markers for each student
- "Make it Rain!" student worksheet (see pg. 13).

### Discussion

Discuss the water cycle with a focus on transpiration, evaporation and precipitation:

1. Transpiration occurs when water moves from the roots of trees and other plants to the tiny pores on the underside of their leaves. The water changes from a liquid into vapor and floats into the atmosphere.

°Relate transpiration to how the students lose moisture through the pores in their skin when they sweat.

2. Evaporation occurs when heat from the sun causes water from the earth to change from a liquid into a vapor. The gas vapor floats up into the atmosphere.

°Relate evaporation to how the sweat on their skin dries.

3. Precipitation occurs when the vapor forms clouds of water droplets. When the droplets get heavy enough they fall back to earth in the form of rain, sleet, snow or hail.

°Visit <http://water.usgs.gov/edu/watercycle-kids-beg.html> for more information.

Finish with a discussion on what life would be like without rain and how it would affect our food supply.

### Activity

1. Distribute copies of the "Make it Rain" worksheet as well as a paper plate to each student.

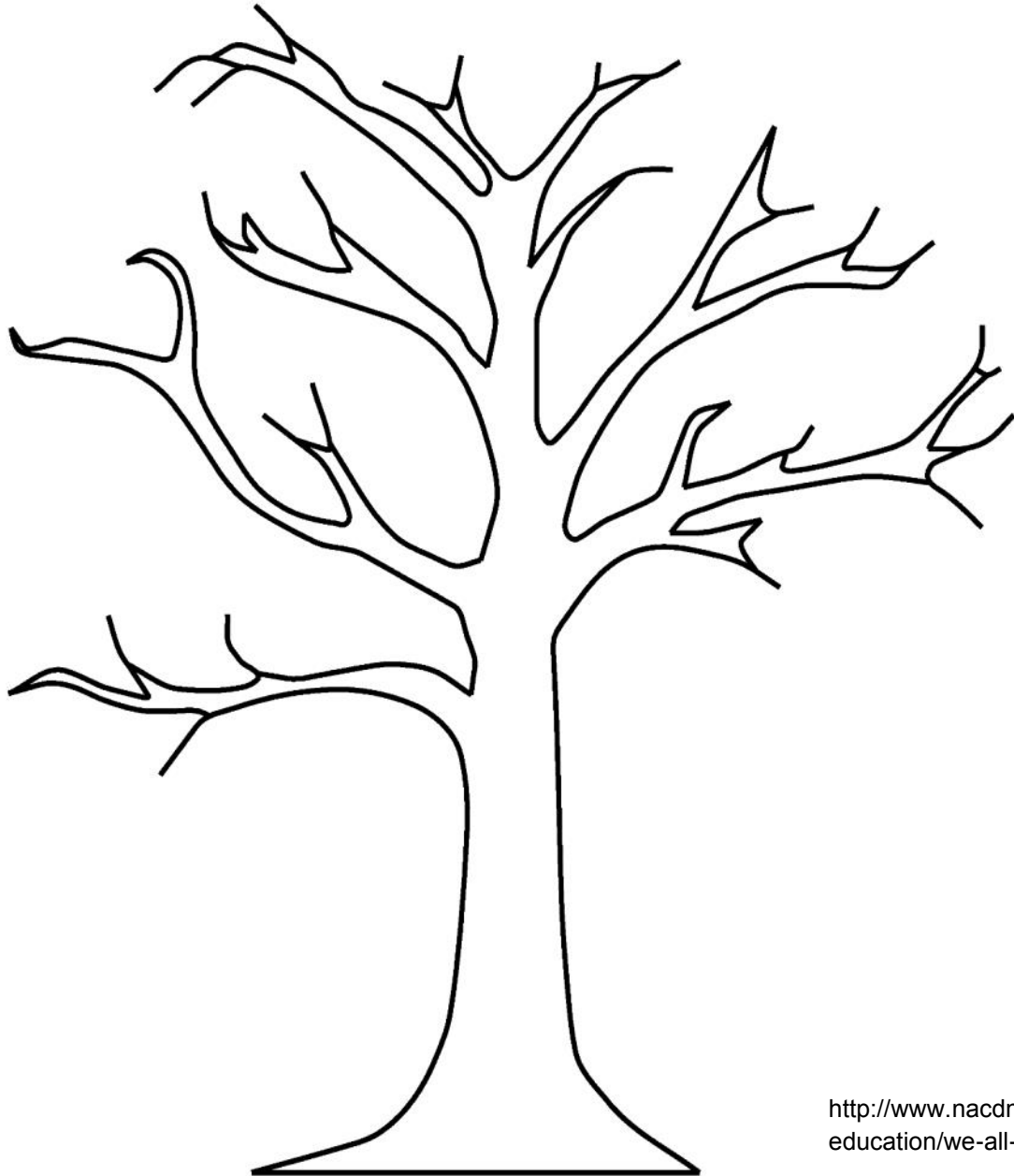
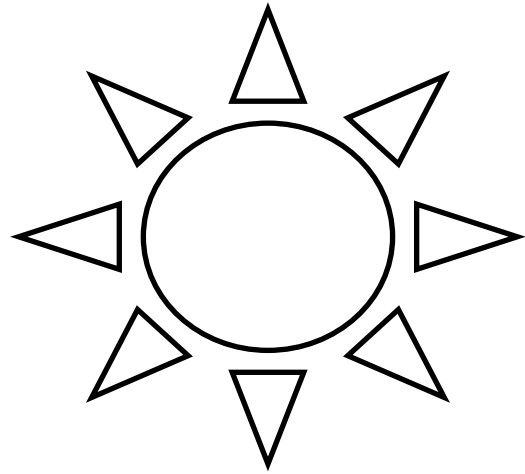
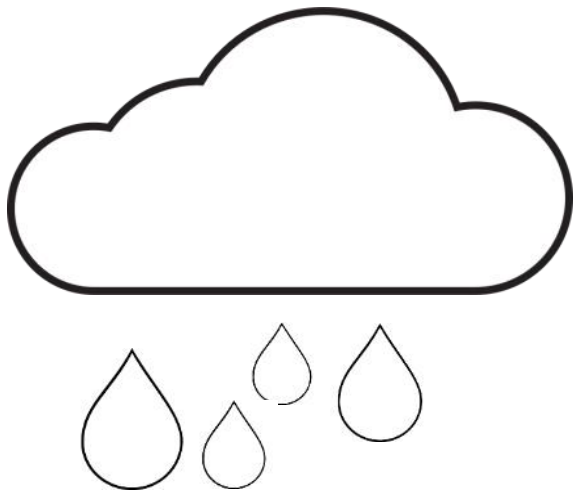
Instruct students to color half of the paper plate blue to represent the sky and half of it brown to represent the earth's soil.

2. Instruct the students to color the illustrations, cut them out and glue them onto the paper plate to form a picture of the water cycle.

3. After the illustrations are glued onto the plate instruct the students to add leaves and roots to their trees.

4. As the last step, discuss the flow of the water cycle and instruct students to draw arrows on their pictures to illustrate the movement of water through the cycle.





<http://www.nacdnet.org/education/we-all-need-trees>



## Level 3 Grades 4-5

### Booklet Objectives

Students will:

- Realize that humans and animals have dependence upon trees in common.
- Recognize the advantages of agroforestry.
- Appreciate the history and longevity of trees.
- Identify classifications of forest types.
- Become aware of the benefit of trees to their daily lives.
- Relate the carbon and water cycles to tree functions.



### Next Generation Science Standards

#### 4. Structure, Function, and Information Processing

4-LS1-1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

#### 5. Matter and Energy in Organisms and Ecosystems

5-LS1-1. Support an argument that plants get the materials they need for growth chiefly from air and water.

5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.

### Vocabulary Words

agroforestry—agriculture incorporating the cultivation and conservation of trees.

arboreal—living in trees.

carbon dioxide—a colorless, odorless gas produced by burning carbon and organic compounds and by respiration. It is naturally present in air (about 0.03 percent) and is absorbed by plants in photosynthesis.

cellulose—an insoluble substance that is the main constituent of plant cell walls and of vegetable fibers such as cotton.

coniferous—a tree that bears cones and evergreen needlelike or scale like leaves.

deciduous—(of a tree or shrub) shedding its leaves annually.

deforestation—the action or process of clearing of forests.

germination—the process by which a plant grows from a seed.

groundwater—water held underground in the soil or in pores and crevices in rock.

lignin—a complex organic polymer deposited in the cell walls of many plants, making them rigid and woody.

nutrient—a substance that provides nourishment essential for growth and the maintenance of life.

organic—of, relating to, or derived from living matter.

oxygen—a colorless, odorless reactive gas, the chemical element of atomic number 8 and the life-supporting component of the air.

<http://www.nacdnet.org/education/we-all-need-trees>



## Taking Trees to Class

### Activity Objectives

Students will:

- Investigate the value of classification.
- Evaluate their use of trees.
- Develop a tree classification system based on their use of trees.

### Materials

- "Taking Trees to Class" worksheet (pages 16 & 17)



### Discussion

Discuss how classification is used in many areas of life to organize information we use daily.

1. Classification groups both living and nonliving things based on characteristics they have in common. Give an example using items found in the classroom such as;
  - edible items are classified as foods, and then further broken down and classified into smaller groups like vegetables, dairy, etc.
  - books can be classified as fiction or nonfiction.
  - clothing can be classified by what it is fabricated from; cotton, nylon, etc. Then grouped into shirts, pants, jackets, etc.

2. Introduce students to the Linnaeus system commonly used by scientists in the classification of plants and animals, based upon physical characteristics. Use an apple tree as an example.

Kingdom: Plantae—plants

Division: Magnoliophyta—flowering plants

Class: Magnoliopsida—dicots (seeds typically have two embryonic leaves)

Family: Annonaceae—custard apple family

Genus: Annona L—annona (one fruit per flower)

Species: Annona squamosa (sugar apple)

### Activity

1. Divide students into groups and direct them to choose a tree common to your geographical location and research the scientific classification and explain what physical characteristics were used in the classification. Each group should complete the "Taking Trees to Class" worksheet.
2. Give each group of students the assignment of developing their own classification system for trees based on how they use trees. For example:

Wood: Hardwood

Location: Eastern United States

Part used: Trunk

Function: Strength & support

Availability: Renewable resource (harvesting/replanting)

Daily use: headboard

Other classification category possibilities: indoor/outdoor, wearable/non-wearable, method of harvest, production/processing requirements, used daily/weekly/monthly, etc.



# Taking Trees to Class

Members of your group: \_\_\_\_\_

## **Tree classification**

Tree chosen by your group: \_\_\_\_\_

Kingdom: \_\_\_\_\_

What physical characteristics place your tree in this group? \_\_\_\_\_

Division: \_\_\_\_\_

What physical characteristics place your tree in this group? \_\_\_\_\_

Class: \_\_\_\_\_

What physical characteristics place your tree in this group? \_\_\_\_\_

Family: \_\_\_\_\_

What physical characteristics place your tree in this group? \_\_\_\_\_

Genus: \_\_\_\_\_

What physical characteristics place your tree in this group? \_\_\_\_\_

Species: \_\_\_\_\_

What physical characteristics place your tree in this group? \_\_\_\_\_

## **List 10 ways in which the members of your group uses trees:**

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____





Develop your own four level classification system based on how you use trees.

Remember that each level of your classification system represents a group of things (living or non-living) that have certain characteristics in common. For example; one of the levels in your classification system could be “wearable”, meaning that all of the items placed in that level are things that you can wear. One item in this “wearable” level might be tennis shoes. Some of the rubber used to manufacture tennis shoes could come from latex that comes from trees.

Name each of the four levels in your classification system and what characteristics the items in each level have in common. Give an example of an item that belongs in each group.



*Level 3 Activity*

1. name of this level: \_\_\_\_\_

characteristics of this group: \_\_\_\_\_

items that belong in this group: \_\_\_\_\_

2. name of this level: \_\_\_\_\_

characteristics of this group: \_\_\_\_\_

items that belong in this group: \_\_\_\_\_

3. name of this level: \_\_\_\_\_

characteristics of this group: \_\_\_\_\_

items that belong in this group: \_\_\_\_\_

4. name of this level: \_\_\_\_\_

characteristics of this group: \_\_\_\_\_

items that belong in this group: \_\_\_\_\_



## Level 4 Grades 6 and up

### Booklet Objectives

Students will:

- Recognize the relationship between the forest ecosystem and human life.
- Connect forest management to healthy habitats, improved water quality and biodiversity.
- Discover the role of urban forests in cities.
- Acknowledge steps that can be taken to improve forests.
- Identify the parts of a leaf that make up its structure.
- Classify trees based on bark, leaves, and wood type.



### Next Generation Science Standards

#### *MS.Interdependent Relationships in Ecosystems*

MS-LS2-2. Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.

LS2.C: Ecosystem Dynamics, Functioning, and Resilience, LS4.D: Biodiversity and Humans

#### *MS.Human Impacts*

MS-ESS3-3. Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.

MS-ESS3-4. Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.

### Vocabulary Words

biodiversity: the variety of life in the world or in a particular habitat or ecosystem.

broadleaf: A tree or plant with wide flat leaves.

compound leaf: a leaf of a plant consisting of several distinct parts joined to a single stem.

conifer: a tree that bears cones and evergreen needlelike or scale like leaves.

cuticle : the outer layer of living tissue.

ecosystem: a biological community of interacting organisms and their physical environment.

food web: a system of interlocking and interdependent food chains.

invasive species: Non-native species disrupting and replacing native species.

lobe: any of the parts, not entirely separate from each other, into which a flattened plant part, such as a leaf, is divided.

mesophyll: the inner tissue (parenchyma) of a leaf, containing many chloroplasts.

palisade : cells found within the mesophyll in leaves, right below the upper epidermis and cuticle.

stoma: any of the minute pores in the epidermis of the leaf or stem of a plant, forming a slit of variable width that allows movement of gases in and out of the intercellular spaces.

stormwater: surface water in abnormal quantity resulting from heavy falls of rain or snow.

watershed: an area or ridge of land that separates waters flowing to different rivers, basins, etc.

<http://www.nacdnet.org/education/we-all-need-trees>



# We All Need Trees-Trees Need Us: Careers in Forestry

## Level 4 Activity

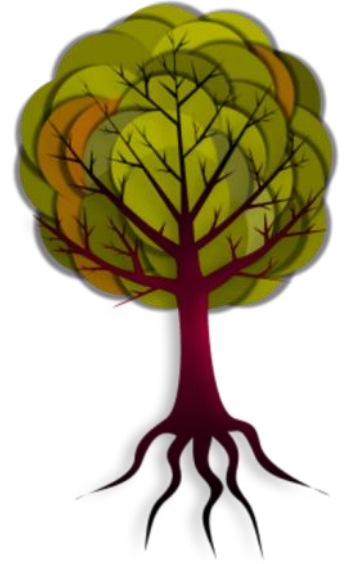
### **Objectives:**

Students will evaluate the role of technological systems, political systems and population needs on forest management.

Students will explore the many career in forestry and resource utilization.

Students will prepare resumes highlighting skills and interests.

Students will research and role play government and industry representatives as well as potential employees.



### **Materials:**

Working in the Woods: Careers in Forestry student worksheet

Paper for printing resumes

Area in which to hold a career fair

Internet access for research

### **Instructions:**

1. As a class discuss the role of America's forests in our daily lives.
2. As a class compose a list of possible careers in forestry.
3. Divide the class into groups of 3-5 and assign each group one or more careers to investigate.
4. Hold a "Career Fair".
  - a. Divide the class in half. 50% of the class will represent employers, 50% will represent job seekers.
    - b. Employers (groups of 2-4 students) should create a display promoting their company. Encourage "employers" to contact actual companies/organizations for brochures, handouts and freebies. Many are more than willing to donate materials for educational projects. Employers should be prepared to interview job seekers on the spot.
    - c. Job Seekers (groups of 2-3 students) should prepare a resume and be prepared to be interviewed on the spot for employment.

**Optional Extension:** Assign each group the task of interviewing one individual with a career in forestry- either in person or on-line. Share interview results with the class or invite individuals into the classroom as a guest speaker.

### **Discussion:**

Discuss a wide variety of forestry related careers in terms of their environmental impact, societal impact, private/public/government organization, skills, interests and required education.



## Level 4 Activity

### **Examples;**

**Botanist:** If you love spending time in the woods and the laboratory you should consider a career in botany. We can be grateful to botanists for many of the medicines we depend on, foods we eat, fibers in the clothes we wear and building materials we sleep under.

**Forester:** If you have strong organizational skills and you enjoy spending time in the woods you would probably enjoy a career as a forester. Foresters supervise the forests of the United States by directing forest activities related to economic, recreational, conservational, and environmental functions. Foresters provide expert guidance to individual landowners, the general public, and industry in an effort to keep the forests healthy and sustainable. We depend on foresters to come up with ways to make forests profitable but still protect them for future generations.

**Urban foresters** manage urban trees. They are vital to our quality of life by dealing with issues such as air quality, storm water runoff, and property values.

**Rangeland Management Specialist:** If you have good leadership skills, love the outdoors, like to work with people, have an interest in ecology and how both wild and domestic grazing animals affect ecosystems a career as a rangeland management specialist with the Forest Service may be for you. These specialists play an important role in all our lives as they manage public resources.



**Resource Conservationist:** If you love all things outdoors then a career in natural resource management and conservation could provide you with a paycheck just for enjoying yourself! Resource managers help balance the needs of their community with the health and sustainability of local ecosystems in relationship to soil, water, forests, wildlife, fish, and recreational resources. We depend upon conservationists to develop programs that make the most productive use of our natural resources without damaging them.

**Wildland Fire Investigator:** If you notice details that others miss and have a talent for solving puzzles a career in fire investigation may be for you. Determining the cause of a fire is essential for many reasons; identifying who/what is responsible for the fire, who may be responsible for suppression costs and property damage, documenting evidence if criminal acts are involved, and finally for the success of future fire prevention programs.



# We All Need Trees-Trees Need Us: Careers in Forestry

1. Career being researched: \_\_\_\_\_

2. Write a job description for this position: \_\_\_\_\_

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3. What skills are necessary to succeed in this career?

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4. What environmental concerns would this career address?

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5. What political/social issues would this career address?

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6. If you are interested in or enjoy \_\_\_\_\_  
\_\_\_\_\_ this would be a good career choice for you.

7. What type of education is required to pursue this career?

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8. What areas of the country would you most likely find employment?

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9. What are some positive aspects of this career?

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10. Are there any negative aspects to this career?

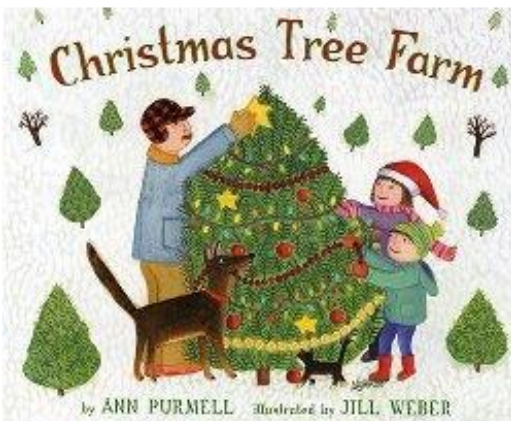
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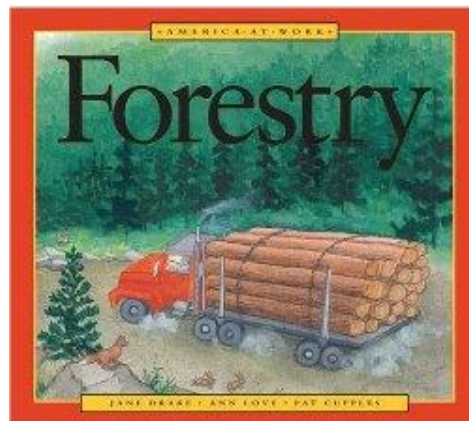
# Literature Connections



**Christmas Tree Farm** by Ann Purmell

ISBN: 978-0-8234-1886-2    Grades: K-2

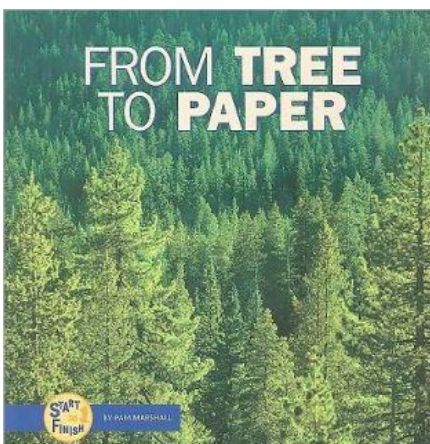
This book examines the production and marketing of Christmas trees. Starting with harvest on a family-owned Christmas tree farm that progresses to planting tree seedlings in the spring. It includes tree trimming and the benefits of a tree farm to wildlife, giving a very comprehensive look at Christmas tree farming.



**Forestry** by Jane Drake, Ann Love, Pat Cupples

ISBN: 978-1-5533-7423-7    Grades: 3-5

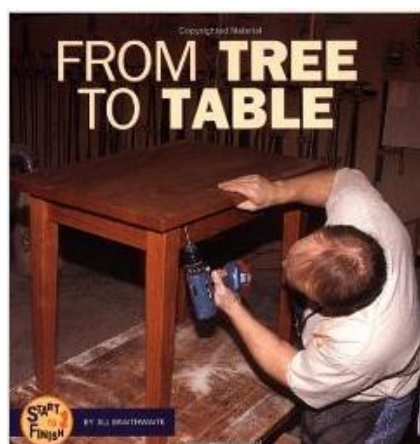
This book examines commercial forestry and the processes and benefits. It includes research and development, raising seedlings, planting trees, forest fires, tree farming, clear cutting, marking trees, logging, removing trees in challenging locations, lumber mills, papermaking and ends with wildlife habitat.



**From Tree To Paper** by Pam Marshall

ISBN: 0-8225-0947-4    Grades: K-2

One book in an excellent series that depicts the various plant and animal source of food and fibers that come from plants and animals. This book begins with the replanting a forest, fostering the concept of trees as a renewable resource. The excellent photographs depict modern production and processing from tree to paper.



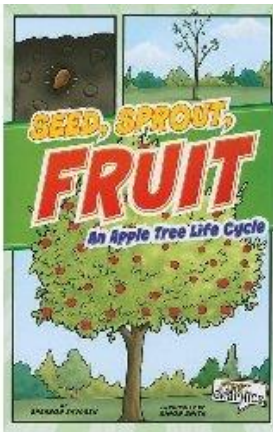
**From Tree To Table** by Jill Braithwaite

ISBN: 0-8225-0947-4    Grades: K-2

Another book in the same series as "From Tree To Paper", that highlights food and fiber products that come from plants and animals. The book begins with replanting a forest, fostering the concept of trees as a renewable resource. The text depicts more old fashioned processes and equipment than it's other text.



# Literature Connections



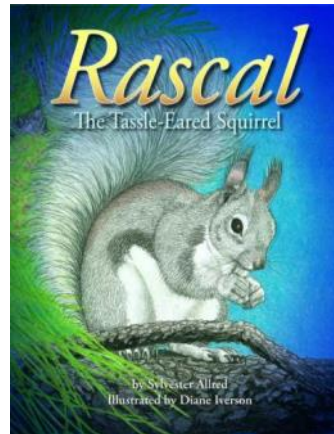
## Seed, Sprout, Fruit: An Apple Tree Cycle

by Shannon Knudsen

ISBN: 978-1429662307

Grades: K-2

Using graphic novel formatting, text and illustrations, this book describes the life cycle of an apple tree. This is a great introduction to the life of a fruit bearing tree.



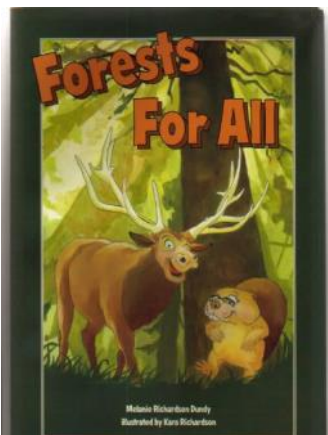
## Rascal: The Tassel-Eared Squirrel

by Sylvester Allred

ISBN: 978-0938216445

Grades: K and up

In the ponderosa pine forest on the rim of the Grand Canyon lives Rascal, a tassel-eared squirrel. Rascal's tale reveals the life of a squirrel, and the life of a ponderosa pine forest. Sidebars discuss the many natural things that make up Rascal's world.

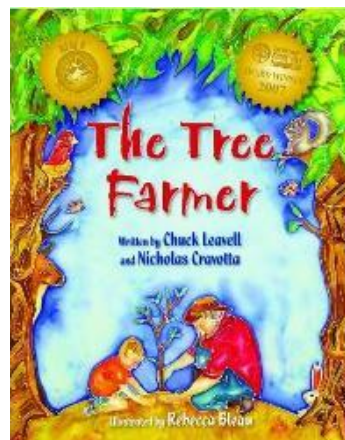


## Forests For All by Melanie Richardson Dundy

ISBN: 978-0967449128

Grades: 4-6

Follow Bo the Bull Elk and J.D. Beaver as they explain the importance of forests and what must be done to protect forests for future generations. Many people are dependent on the timber industry every day. Loggers strongly believe in their obligation to do an excellent job of maintaining the forests. Bo and J.D. do a great job explaining what must be done to protect forests for future generations.



## The Tree Farmer by Chuck Leavell, Nicholas Cravotta

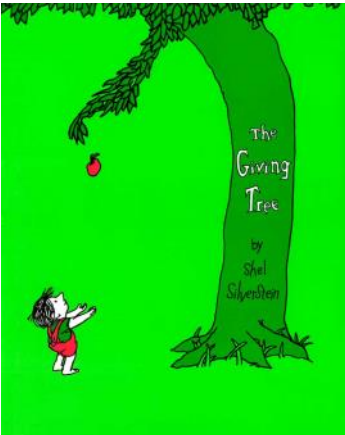
ISBN: 1-893622-16-9

Grades: K and up

A children's book co-authored by the Rolling Stones' keyboardist, Chuck Leavell, shares the story of the tree farmer who's love and respect for the forests are questioned by his grandson since he grows beautiful trees only to cut them down. The tree farmer shares his knowledge of trees as a renewable resource and the products they provide to prove his true appreciation for the trees.



# Literature Connections



**The Giving Tree** by Shel Silverstein

ISBN: 978-0060256654      Grades: 2-3

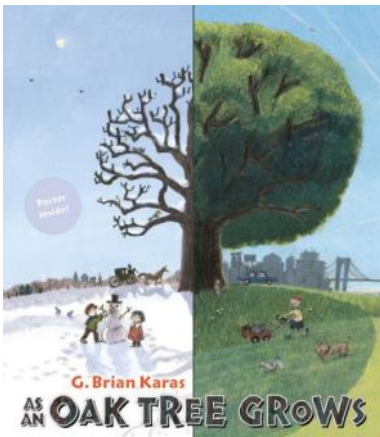
A tender story, touched with sadness, tells the tale of a boy who would visit a tree and use her resources. As the boy grew older he started to demand more and more, while the tree continually gave. A moving parable that offers an affecting interpretation of the gift of giving and our use of natural resources.



**The Lorax** by Dr. Seuss

ISBN: 978-0394823379      Grades: 1-4

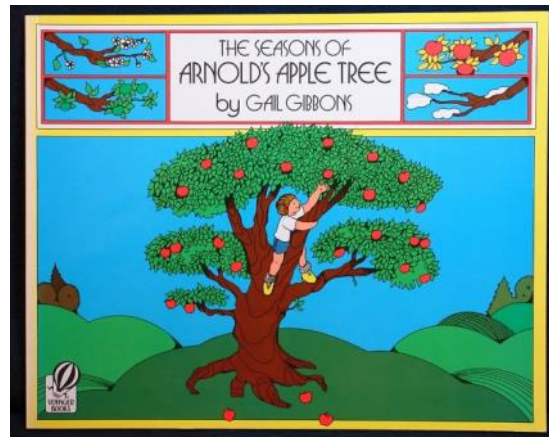
Long before saving the earth became a global concern, Dr. Seuss, speaking through his character the Lorax, warned against mindless progress and the danger it posed to the earth's natural beauty.



**As an Oak Tree Grows** by G. Brian Karas

ISBN: 978-0399252334      Grades: K-3

This engaging picture book relays the events of 200 years from the unique perspective of a magnificent oak tree, showing how the world can transform from a single vantage point. From 1775 to present day, this eye-opening window into history lets readers watch as human and animal populations shift and landscapes transition from countryside to cities. Perfect for budding historians and nature enthusiasts.



**The Seasons of Arnold's Apple Tree**

by Gail Gibbons

ISBN: 978-0152712457      Grades: K-3

This book about nature and the changing seasons focuses on a young boy named Arnold and a very special apple tree. Arnold collects apple blossoms in spring, builds a tree house in summer, makes apple pie and cider in the fall, and hangs strings of popcorn and berries for the birds in winter, among other seasonal activities.





# We all Need Trees

## Resources and Information



<http://www.na.fs.fed.us/whycutatree/>

Some children and adults are unaware that in order to reduce tree hazards, protect other trees, or to get wood, it is necessary to cut trees. This book is intended to raise awareness of the issue. It also features tips for planting a tree.

Why Would Anyone Cut a Tree Down? is a 41-page book published by the U.S. Forest Service Northeastern Area State and Private Forestry. It features 28 full-color, hand-painted illustrations. The book is intended primarily for 1st to 3rd graders, as well as parents and educators.



### Benefits of Trees U.S. Forestry Service

[www.fs.fed.us/learn/trees](http://www.fs.fed.us/learn/trees)

### Great Kids page

[www.fs.fed.us/learn/kids](http://www.fs.fed.us/learn/kids)



## i - Tree

I-Tree Design allows anyone to make a simple estimation of the benefits provided by individual trees. With inputs of location, species, tree size, and condition, users will receive an understanding of tree benefits related to greenhouse gas mitigation, air quality improvements, and stormwater interception. With the additional step of drawing a building footprint – and virtually "planting" or placing a tree – tree effects on building energy use can be evaluated.

[www.iTreelearn.org](http://www.iTreelearn.org)



## FS –Nature Live!

<http://www.fsnaturelive.org/>

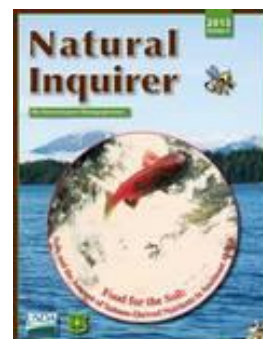
FSNatureLIVE distance learning adventures! The USDA Forest Service, Prince William Network and partners bring nature learning to you through our series of webcasts, webinars, and online education resources. No matter where you are in the world, visit our LIVE programs for exciting, on-site learning about bats, butterflies, climate change, wetlands, and more!

## Natural Inquirer

Lots of resources! Be sure to visit!

- Journals for Middle to High School, Upper Elementary and PreK-2.
- Scientist Card Series
- Education Resources—Photo Resources
- Videos and more!!!

<http://www.naturalinquirer.org/>



# We all Need Trees

## Resources and Information



**Project Learning Tree** is an award-winning environmental education program designed for teachers and other educators, parents, and community leaders working with youth from preschool through grade 12.

To find your state Project Learning Tree Coordinator for workshop information visit. <https://www.plt.org/your-state-project-learning-tree-program>



Enjoy presenting the all time favorite **Lorax book from Dr Seuss?** Visit <https://www.plt.org/lorax>. You will find activities to go with the story! Use these activities to teach about the inherent value of forests and the importance of sustainable forest management.

In the Project Learning Tree's **Nature Activities for Families** section you will find some great hands on materials to share with your community or at a school or field day event. Visit <https://www.plt.org/connecting-kids-to-nature-family-activities> and you can download over 25 activities.



Sections are:

- ◆ Walking in the Forest with 8 activities

Examples: The Fallen Log, Tree Cookies, Have Seeds, will travel

- ◆ Exploring a Local Park with 9 activities

Examples: We All Need Trees, Adopt a Tree, Getting in Touch with Trees

- ◆ In Your Own Backyard with 8 activities

Examples: The Shape of things, Birds and Worms, Tree Factory

- ◆ When All Else Fails, Inside with 5 activities

Examples: Then and Now, Web of Life, To Be A Tree



# We all Need Trees

## Resources and Information

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### ***National Association of Conservation Districts (NACD)***



### ***NACD Forestry Notes***

<http://www.nacdnet.org/policy/forestry/forestrynotes>

Great resource for forestry information at the local, state, regional and national level.

### **NACD Forestry Resources**

<http://www.nacdnet.org/policy/forestry>

Examples of what you will find on this web link.

#### **Woody Biomass Desk Guide and Tool Kit**

Communities today are challenged to develop effective strategies that support forest ecosystem health, mitigate the effects of climate change, satisfy growing energy needs, and provide local economic opportunities. For some communities, woody biomass may be a viable option for meeting these needs and deserves serious consideration. Forests in the United States represent an important potential energy and biobased product resource. NACD, in collaboration with federal, state, and local partners is working to raise awareness about the potential for woody biomass as a primary feedstock for such products.

This Woody Biomass Desk Guide and Toolkit provides an overview of woody biomass production and utilization in the U.S., tips of how to provide effective outreach for your clientele, and educational handouts to share with your audiences.

#### **Community Wildfire Desk Guide and Toolkit**

The desk guide provides information about activities prior to, during and after wildfire. Toolkit materials interact with and support this information and provide more thorough explanations and examples of activities

### ***NACD Forestry Network***

<http://www.nacdnet.org/resources/forestry/forestrynetwork>

Additional information on resources and stories from around the nation.



# We all Need Trees

## Resources and Information

The National Association of Conservation Districts has great forestry educational resources available online. If you are an educator, we encourage you to implement some of the lessons in your classroom.

<http://www.nacdn.org/education/we-all-need-trees>



### Additional Resources

#### Tree Benefits

##### Grow Trees

[www.grow-trees.com/why\\_trees/about\\_trees.aspx](http://www.grow-trees.com/why_trees/about_trees.aspx)

##### TreePeople

[www.treepeople.org/resources/tree-benefits](http://www.treepeople.org/resources/tree-benefits)

##### North Carolina State University

[www.ncsu.edu/project/treesofstrength/benefits.htm](http://www.ncsu.edu/project/treesofstrength/benefits.htm)



##### Earth Share

[www.earthshare.org/2013/07/treebenefits.html](http://www.earthshare.org/2013/07/treebenefits.html)

#### The Role of Trees in Carbon Sequestration:

##### Alabama Forestry Commission

[www.forestry.alabama.gov/carbon\\_sequestration\\_faqs.aspx](http://www.forestry.alabama.gov/carbon_sequestration_faqs.aspx)

##### NY State Dept. of Environmental Conservation

[www.dec.ny.gov/lands/47481.html](http://www.dec.ny.gov/lands/47481.html)

#### Additional Student Resources

##### Scholastic

[www.scholastic.com/teachers/post/connecting-children-nature-%E2%80%94-learning-about-trees](http://www.scholastic.com/teachers/post/connecting-children-nature-%E2%80%94-learning-about-trees)

##### Connections Academy Blog

[www.connectionsacademy.com/blog/posts/2012-05-22/Branching-Out-Learn-All-About-Trees.aspx](http://www.connectionsacademy.com/blog/posts/2012-05-22/Branching-Out-Learn-All-About-Trees.aspx)



##### Discover the Forest

Discover a forest or a park near you!

Learn about forests and more!

<http://discovertheforest.org/>

##### National Agroforestry Center

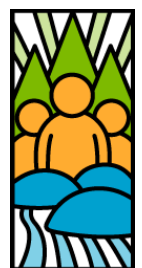
Publications, research, practices and more!

<http://nac.unl.edu/>

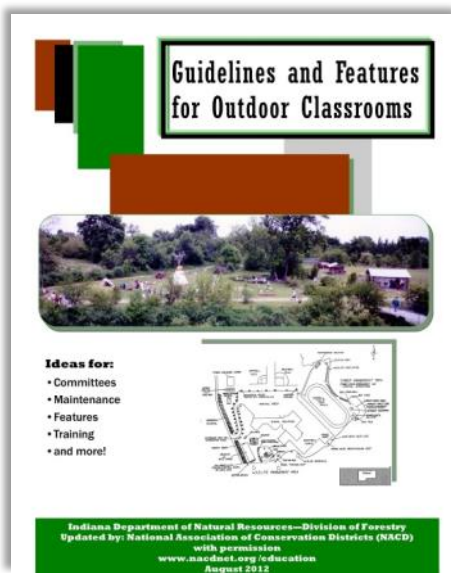
##### Forestry Careers

<http://forestrycareers.org/>

The numbers and types of jobs held by graduates in forestry and natural resources are reviewed on this web link. This site covers the majority of forestry careers, and gives you great resource information and education areas of study.



# Community and Schoolyard Habitat Ideas



## Guidelines and Features for Outdoor Classrooms

Interested in developing an outdoor classroom at a local school or area in your community? This guide was developed by the Indiana Department of Natural Resources - Division of Forestry and updated with permission by the National Association of Conservation Districts (NACD). It is only available in a PDF format that you can print as needed. This guide will give ideas for features in an outdoor classroom as well as setting up a community, funding ideas, curriculum resources and more.

<http://www.nacdnet.org/education/resources/outdoorclassrooms>

## Project Learning Tree—Green Schools

<https://www.plt.org/greenschools>

Project Learning Tree® (PLT) GreenSchools inspires students to take responsibility for improving the environment at their school, home, and in their community.



The nationwide environmental service-learning program helps improve students' academic performance in STEM subjects. It provides teachers and students with training and resources to create healthier schools – and save money.

*PLT GreenSchools is a program of the American Forest Foundation, in partnership with our 50-state PLT network, the U.S. Forest Service, the Corporation for National and Community Service, and many other national, state, and local partners.*

## National Association of Conservation Districts (NACD)

509 Capitol Court, NE  
Washington, DC 20002-4937  
P: (202) 547-NACD (6223)

E-mail: [stewardship@nacdnet.org](mailto:stewardship@nacdnet.org)  
Web: [www.nacdnet.org/education](http://www.nacdnet.org/education)  
NACD Marketplace: [www.nacdstore.org](http://www.nacdstore.org)

