

Celebrate Trees!

Forest products are everywhere! They are in our food, our clothes, our homes, and even in our personal care items. Over 5,000 products that we use every day come from trees!

Some products, such as fruits, nuts, and sap, are harvested from living trees. But most of the forest products we use are made from trees that have been cut down. When a tree is logged these days, little goes to waste. Even wood chips and shavings are made into useable lumber.

Wood and tree products are important to our economy. We use more wood by weight than all other raw materials combined (i.e., plastics, steel, aluminum, concrete). Maybe it's time we celebrated this dependence on such a great renewable resource!

Getting Ready

1. Be sure the CD-ROM is installed and working properly.
2. Set up a learning station near the computer. Include copies of the assignment **Celebrate Trees!** (page 55) for each student, a copy of **You Won't Believe What Grows on Trees** (pages 53 - 54), and a box labeled "Cool Stuff From Trees."
3. Gather samples of wood products that are produced in your community. Contact paper mills, furniture factories, and other businesses for examples of local products.

Doing the Activity

1. Be sure that each student or small group of students has a chance to use the CD-ROM. They should go to the main menu and select the *Products* section. After a short introduction, they will play the game *I Wood if I Could*. Ask students to follow the directions on the assignment sheet.

activity. Ask students to share their items and the reasons they chose them. Show the local products that you collected. Using the information that the students learned about their items, sort them by one or more of the following criteria:

 - ✦ What part of the tree did the product come from (i.e., leaves, fruits, flower, wood, bark, sap, or roots)?
 - ✦ How much of the product is made from trees
2. After everyone has had a chance to play the game and bring in their forest products, continue with this



Method

Students use the CD-ROM to discover extraordinary forest products and celebrate how those products are a part of their daily lives.

Key Concepts

People benefit from the wide variety of forest products that they use every day.

Objectives

- gain appreciation for the abundance and variety of forest products
- identify and categorize forest products

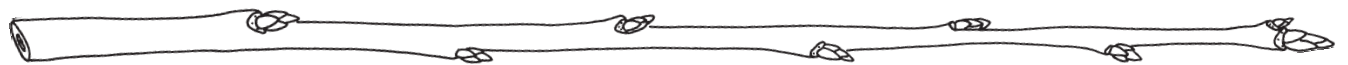
Subjects & WI Academic Standards

Science:
B.4, C.4, D.4, H.4
C.8

Social Studies:
D.4, D.8

English/Language Arts:
A.4, B.4, C.4, E.4, F.4
A.8, B.8, C.8, E.8, F.8

Environmental Education:
A.4, B.4
A.8, B.8



Materials

- CD-ROM
- copy of student worksheet for each student
- Copy of *You Won't Believe What Grows on Trees*
- box labeled *Cool Stuff from Trees*
- samples of local forest products
- other materials as needed to carry out chosen activities

Preparation Time

20 minutes for basic lesson plus time to prepare for chosen activities

Activity Time

varies with chosen activities

Setting

varies

(e.g., totally from trees, half, or only a small part)?

✳ How is the item used (e.g., recreation, personal care, job)?

✳ Is the item renewable, recyclable, reusable, or disposable? (Remember that trees are renewable, but the item may contain additional raw materials that are nonrenewable).

3. Now it's time to celebrate. Choose one, two, or many of the ideas listed under **Extending the Learning**. Each will help your students appreciate the many things we get from trees. You will find activities for most of the major subject areas. You could plan to celebrate trees all day!

Assessing Student Learning

Observe student participation in classroom activities.

Ask students to write down a list of all the forest products that they used from the time they got out of bed until they arrived at school. Ask them to indicate what part of the tree each product came from.

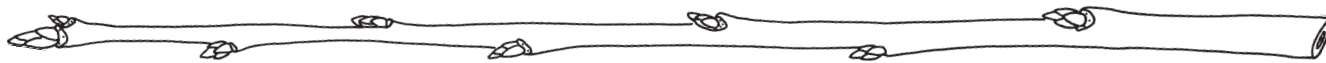
Extending the Learning

Science

Invent a new tree product. Scientists are developing new medicines, adhesives, and other products every day. What new products would your students like to see? Ask them to design new products that use some part of a tree. They should draw pictures and label the resources that would be needed to produce their products. Ask them to tell whether the resources are renewable or nonrenewable.

Scientists are also learning new ways to use trees more efficiently. These advances help us make the most of the trees we have. Visit the homepage of the USDA Forest Service - Forest Products Laboratory (www.fpl.fs.fed.us) to find out about brand new discoveries and products!

Play with tree products. Write the names of several unusual tree products on index cards. Use the cards to play charades or 20 questions. See the activity "Tree Treasures" in **Project Learning Tree** for a variation of 20 questions. In this game, each child has a tree product taped to his/her back and must figure out what it is by asking "yes/no" questions. Grades 2 - 6.



Social Studies

Learn about tree products from other countries and climates. Discover trees of the tropical rainforest and search for their products in your school and home. As a class, figure out which candy bar contains the most tree products (e.g., nuts, cocoa, coconut, paper wrapper). Map the possible origin for each product.

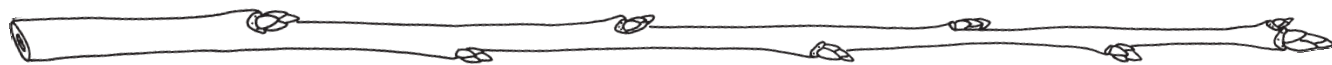
Eat Tree Treats. Celebrate the foods we get from trees with a “tree treats” snack. First, brainstorm a list of all the foods we get from trees. Ask each person to pick a food on the list. They should find out where the product comes from and how it is grown and harvested. Ask for volunteers to bring in samples of tree foods. Try fresh coconut, mangoes, figs, real maple syrup, pistachios, or other unusual tree foods. See the **NatureScope: Trees Are Terrific** activity “Tree Treats” for more ideas.

Collect tree stamps. Stamps (made from paper, of course!) have commemorated Smokey’s birthday, the World Forestry Congress, common trees, and flowering trees. You might also ask your students to design and issue their own commemorative stamps encouraging care of our forest resources.

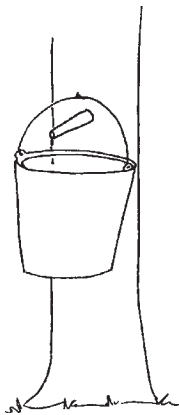
Math

Inventory your classroom “forest.” How many trees are in your classroom? (Note: You will need several scales for this activity.) The goal is to estimate the weight in pounds of all the paper and wood products that are in the classroom and then convert the pounds to trees. This activity will involve weighing, averaging, estimating, and multiplying. You will probably want to start by asking the students to list what needs to be weighed. Your list might include paper products in students’ desks, books, shelves, wooden desks and chairs, paper in storage cabinets, and so on.

Divide the students into teams and assign each team a task. Before they start weighing, each team must prepare a plan that they will share with the class. For example, the students in charge of desk contents (i.e., books, notebooks, writing paper, pencils) might suggest weighing the contents of 3 desks, taking an average, and multiplying by the number of desks in the room to come up with their estimate. The students should discuss each plan and decide whether it will give a good estimate. Be sure to weigh and record paper products and wood products separately. Once each group has an approved plan, start weighing and estimating. When everyone is done, you will have an estimate of the pounds of paper and wood products in the classroom.



- ✦ Use this information to convert pounds of *paper products* to trees: On the average, a 70' tall tree that is 10" in diameter produces about 200 pounds of paper.
- ✦ Use this information to convert pounds of *wood products* to trees: A board foot weighs about 2.9 pounds. (This is based on a composite of timber types with an average moisture content.) How many board feet of wood do you have in your classroom? A 70' tall tree that is 10" in diameter would yield at least 55 board feet using a Scribner table. (This is the amount of useable lumber available after the tree is manufactured.) How many 70' trees does it take for you to have class?



Boil down maple syrup. In late winter or early spring, when warm days are followed by cool nights, the maple sap begins to flow, and it's sugaring time! You can make small amounts of maple syrup in the classroom. You will need a large sugar maple tree, a hand drill with a 1/2" bit, a hollow tube called a spile, a hammer, a nail, a bucket for collecting sap, a kettle, and a burner. You can make your own spile by using a coat hanger wire to punch the pith out of a 5" piece of sumac.

Drill a hole into the south-facing side of the tree. It should be about 2" deep and slanting up slightly. Insert the spile, tapping it in firmly. From the nail, hang the bucket so that it catches the drips. When you have collected a little more than a gallon of sap, take it indoors. Be sure everyone has a chance to taste the plain sap. Now begin to boil it. Watch it carefully so it doesn't burn. A candy thermometer helps. Boil until the sap reaches 219° F. Have a taste test comparing your syrup, commercially made maple syrup, and regular "maple-flavored" syrup.

The UW-Extension booklet *Maple Syrup Making for Beginners* or *The Maple Sugar Book* by Helen and Scott Nearing will tell you everything you ever wanted to know about making maple syrup and its history. Contact the Wisconsin Maple Syrup Producers Association, c/o Henry and Gretchen Grape, Route 2, Box 54, Holcombe, WI 54745 for a free packet designed for fourth grade students. It contains activities and a color poster on making maple syrup.

Reading

Sponsor a classroom "Read-In!" You'll find a list of good books on pages 109 - 112 of the **Appendix**. Gather as many as you can and read, read, read. Read to your students. Have your students read to younger students. Ask students to share their favorite parts of books they've read. Read just for the fun of it!

Where Would You Be Without Trees?

soap
wax - lumber - jam
syrup - pet food supplements
lacquer - oil spill control agents - toys
essential oils - printing inks - gummed tape
rocket propellants - polishes - textiles - balls
pallets - chewing gum - toothpaste - detergents
bats - sausage casings - baby foods - turpentine
draperies - bedspreads - carpet - rubber - shampoos
varnish - oxygen - bowling pins - insecticide - recreation
football helmets - cereal - photographic films - vitamins
candy wrappers - baskets - cooking utensils - ceramics
appliance housings - toilet paper - plywood adhesives
pharmaceuticals - milk containers - soil conditioners
plastic fillers - dinnerware - firewood - cosmetics
jelly - hockey sticks - cleaning compounds
particle board - tires - roofs - oils
paper - skis - asphalt

from the Sept/Oct
1999 issue of *School
Forest Newsletter* -
request a copy at
www.wfrea.org

mulch
cider
yarn
wax
glue
inks
fruit
shade
resins
veneer
furniture

"Many a tree is found in the wood,
And every tree for its use is good.
Some for the strength of the gnarled root,
Some for the sweetness of flower or fruit;
Some for the shelter against the storm,
And some to keep the hearthstone warm.
Some for the roof and some for the beam,
And some for a boat to breast the stream.

In the wealth of the wood since the world began,
The trees have offered their gifts to man."

-Van Dyke

Language

Write a tree poem. Encourage your students to write about trees and the amazing things we get from them. Try to do this writing in a park or school playground where the children

can lean against or stare up at a tree. See the activity "Poet-Tree" from *Project Learning Tree* for more ideas. Grades 3 - 8.

Market your favorite forest product. Ask students to share their favorite forest products. Working alone or in groups, have students come up with advertising campaigns to sell their products. To add interest, have each person pretend to be the tree that his or her product comes from. For example, an aspen might advertise CD lyric inserts or a maple tree might advertise bowling alleys.

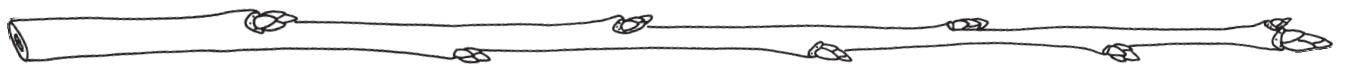
Physical Education

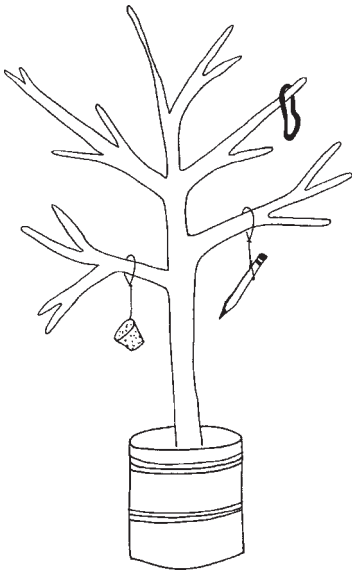
Organize some "Tree Olympics." Brainstorm all of the sports which need trees. Some examples include: baseball - balls and bats, snowshoeing - shoes, bowling - pins and alleys, canoeing - canoes and paddles, tennis - rackets, tobogganing - toboggan runners, flying - airplane propellers.

As a class, invent your own tree-related Olympics. Include some regular competitions such as distance-hitting a baseball or throwing a "javelin" (dowel rod). Also include some invented "sports" such as building the highest tower with popsicle sticks and rubber bands or making a pencil last the longest. You might create banners with the Olympic "rings" and slogans for advertisers.



**Sponsored by a
Forest Near You!**





Art

Create a forest products alphabet book to share with younger students. The forest “products” could include the benefits of living forests and the things we make from trees. For example, “A is for animals,” “B is for baseball bats,” “C is for clean air” . . .

Display your collection. Think of a creative way to display the *Cool Stuff from Trees* that students brought in. They might make a museum-type exhibit or a bulletin board display. They could also place a small tree in cement or plaster of Paris and decorate it with small tree products.

Music

Learn about musical instruments made from trees. Violins, guitars, dulcimers, and pianos are just a few. Many people from other countries make simple instruments from trees and play them. Discover what a diggeradoo is! Try to make simple percussion instruments.

Enjoy a story. Read *The Voice of the Wood* by Claude Clement. Then listen for the deep voice of the cello in Suite No. 3 in C Major for Unaccompanied Cello by J. S. Bach.

Finding Out More!

Resources Today - WOOD by Kathryn Whyman (Gloucester Press, 1987). This book shows how wood is harvested and turned into useful products.

TIMBER! From Trees to Wood Products by William Jaspersohn (Little, Brown & Company, 1996). This book explains how people and machines turn trees into a variety of wood products.

Great websites that list products:

Forest Products Laboratory

www.fpl.fs.fed.us

Temperate Forest Foundation

www.forestinfo.org

Follow the links: Discover→Cool Facts→From a Tree

Wisconsin Department of Natural Resources

www.dnr.state.wi.us

Follow these links: Natural Resources→Forestry→Uses of Wisconsin’s Forests→Forest Products→Primary Wood Vendors and Secondary Wood Vendors

Wisconsin Paper Council

www.wipapercouncil.org/funfacts.htm

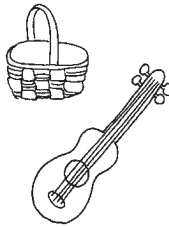
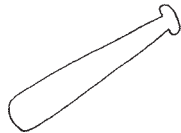
You Won't Believe What Grows on Trees

Here are just some of the 5,000 products that we need and use every day. Which ones are too weird for you to believe?

Wood Products

When wood is used directly to make products, we can usually see the grain of the wood.

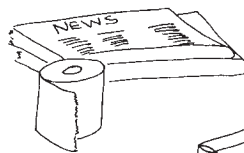
- baseball bats
- baskets
- bedding for animals
- bookshelves
- bulletin board frames
- cabinets
- canes
- canoes
- caskets
- cedar chests
- chairs
- counters
- doors
- fences
- firewood
- flooring
- masonite
- matches
- musical instruments
- particle board
- pencils
- picture frames
- plywood
- tables
- telephone poles
- tennis rackets
- tool handles
- toy blocks
- toys
- veneer
- window frames
- wooden barrels



Paper Products

Paper is manufactured from the cell walls found in wood. The cell walls contain cellulose. The cellulose from chopped-up trees is cooked with chemicals to form pulp. This pulp is washed, drained, pressed, and dried to form all kinds of paper.

- books
- candy wrappers
- cardboard boxes
- disposable diapers
- drawing paper
- filter paper
- gift wrap
- grocery bags
- magazines
- milk cartons
- newspapers
- paper plates
- paper towels
- tissue paper
- toilet paper
- wallpaper



Bark Products

In addition to supplying cork and cork products, bark also contains many special chemicals that have amazing uses.

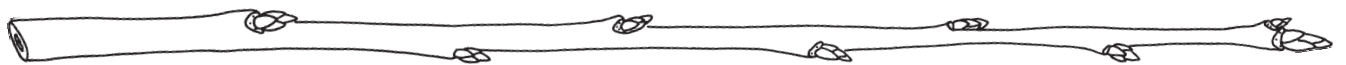
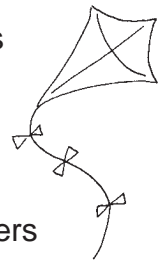
- baseballs
- corks
- corkboard
- dyes
- floats
- heat shields for space vehicles
- medicines
- mulch
- oils
- tannin



Miscellaneous Products

Various tree parts and combinations of parts can also be used in the manufacturing of these products.

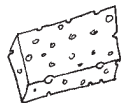
- animal feed
- asphalt
- baby food
- briquets
- charcoal
- cleaners
- decorations
- dyes
- inks
- kites
- medicines
- pencil erasers
- pesticides
- pitch
- stuffing for life jackets
- tar



Cellulose Products

When mixed with certain chemicals, cellulose can be used to make many plastic-like products or to make liquids thicker.

artificial hair (wigs)
buttons
carpets
cellophane
combs
conveyor belts
curtains
explosives
eyeglass frames
ice cream
imitation leather
luggage
photographic film
ping-pong balls
plastic pens
telephones
rayon
sausage cases
shampoo thickeners
shatterproof glass
sponges
steering wheels
toothbrushes
upholstery
wallpaper paste



Sap Products

The sap of some trees is special! Gums, resins, and latex are used to make many things.

adhesives
chewing gum
coatings for vitamins
make-up
disinfectants
crayons
electrical insulation
explosives
flavorings for food
flooring
garden hose
glass cement
insecticides
latex
mouthwash
ointments
paints
paint thinner
perfumes
printing ink
rosin
rubber gloves
rubber tires
shoe polish
soap
turpentine
varnishes
waxes



Food Products

Did you ever eat a tree? Probably so! We eat many tree parts directly. We also eat many tree foods which have been processed in some way.

allspice
almonds
apples
apricots
avocado
cashews
cherries
chestnut
chocolate
cinnamon
cloves
coconuts
dates
figs
grapefruits
lemons
limes
mangoes
maple syrup
molasses
nectarines
nutmeg
olives
olive oil
oranges
peaches
pears
pecans
persimmons
pistachios
prunes
salad dressing
sassafras tea
vanilla flavor
vinegar
walnuts



Student Page

Celebrate Trees!

After you play the game on the CD-ROM . . .

Look at the "You Won't Believe What Grows on Trees" list.

Write down 3 things from the list that are a total surprise to you.

I can hardly believe that these things come from trees . . .

1.

2.

3.

Write down 2 things that you have never even heard of.

Find out something interesting about them. Try a dictionary or online encyclopedia, or ask your parents for more information.

I've never heard of a _____.

Now I know

I've never heard of a _____.

Now I know

Bring at least one of the items you have listed on this page to class.

Put it in the *Cool Stuff From Trees* box. **Don't bring anything valuable!** Find out as much as you can about the item. For example, what part of the tree does it come from? What other raw materials are needed to make it? Is it recyclable? Can you reuse it or is it disposable?

My *Cool Stuff From Trees* item is _____

Here's what I found out about it!

