2011 PROGRAM GUIDE

TREES INTO CARTONS, CARTONS INTO TREES

TICCIT

Educational Goals

From the presentation, students should walk away with an understanding of the:

- Benefits of trees to the earth's lifecycle
- Benefits of paper-based packaging over plastic and other less sustainable forms of packaging
- How paper is made
- How a milk carton is made from paper
- How a milk carton will biodegrade over time

Jennie Markens of PPC helps a fifth-grade student at Brightwood Elementary School to plant a sapling in a used milk carton.

TICCIT Overview

TICCIT (pronounced "ticket," which stands for "Trees into Cartons, Cartons into Trees") is an outreach and educational program for fourth through sixth graders that is held at the end of each April in honor of Earth Day.

The 45-minute program is designed to highlight the natural renewability and sustainability of paperboard packaging. As part of TICCIT, PPC members partner with local elementary schools to make a presentation to students about the benefits of recycling, how paper is made, and why trees are important to the earth's lifecycle.

Each company also donates either tree seeds or native saplings to each child to plant in a milk carton they have saved from lunch (or brought from home). The new "carton-and-tree units" are then planted in the ground. The cartons provide protection and a natural water funnel for the new trees. As the trees grow, the cartons biodegrade, completing the "trees into cartons, cartons into trees" cycle.

2010 TICCIT Participants

In 2010, eleven PPC members participated in TICCIT. The final tally of 5,200 saplings distributed by PPC members to elementary schoolchildren shows a 57% increase in participation over 2009's 3,000 saplings.

Participating members include:

- Bell Incorporated
- CardPak, Inc.
- Clearwater Paper
- Graphic Packaging International
- MeadWestvaco
- PPC
- Sonderen Packaging
- Southern Champion Tray
- The Standard Group
- Thoro Packaging
- Unipak Inc.

TICCIT 2010: 5,200 Trees Distributed!

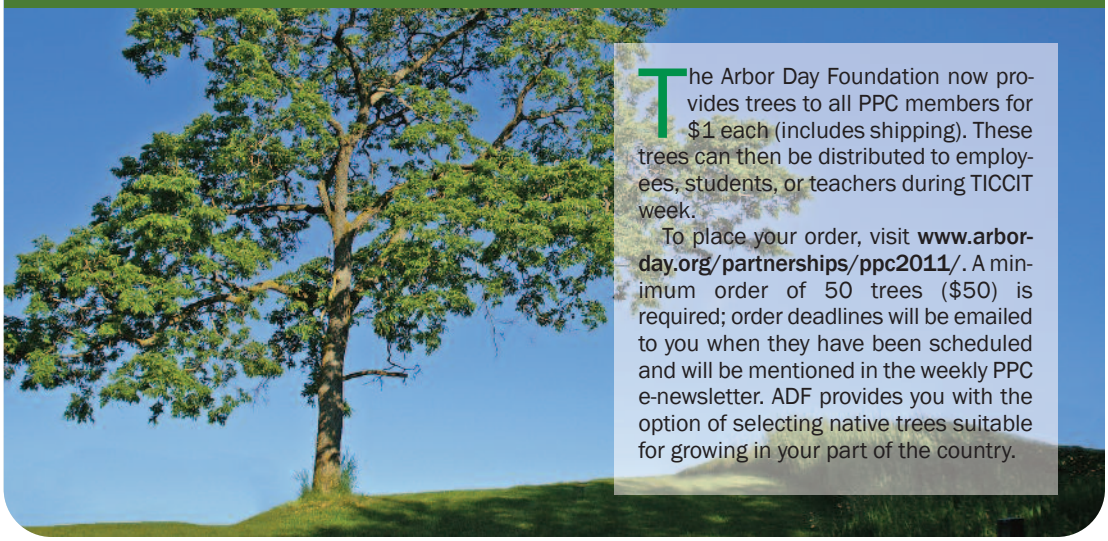
Bell, Inc. instructed the students on how to create their own carton, then asked them to decorate each with illustrations on what Earth Day means to them.

CardPak, Inc. made t-shirts for each student, with the TICCIT logo on the front and their company logo on the back. They printed the image on eco-friendly cotton.

Sonderen Packaging held their event outside so that the students could be as messy as they wanted when filling their used milk cartons with soil.

PPC created an interactive display for students that graphically demonstrates how paper is made, which types of trees are used in making paper, and how trees work into the earth's lifecycle.

How to Order Saplings



The Arbor Day Foundation now provides trees to all PPC members for $1 each (includes shipping). These trees can then be distributed to employees, students, or teachers during TICCIT week.

To place your order, visit **www.arborday.org/partnerships/ppc2011/**. A minimum order of 50 trees ($50) is required; order deadlines will be emailed to you when they have been scheduled and will be mentioned in the weekly PPC e-newsletter. ADF provides you with the option of selecting native trees suitable for growing in your part of the country.

Presentation Materials List

Make sure to check with the teacher and/or school administration a week or two before your TICCIT presentation to see what items they might be able to supply on the day of the event. Whatever they are unable to provide, make sure to bring with you. In addition to supplying a sapling or seeds for each student, you may also wish to bring:

- Extra milk cartons
- Camera
- Water/watering can
- Potting soil
- Trowels
- Scissors
- Forks
- Art supplies
- Posters/handouts
- Newspapers for covering desks
- Other materials specific to your presentation needs, such as a papermaking kit, paperboard samples, etc.

2011 TICCIT Timeline

January–February

Call your local elementary school administrator and describe to him/her the basics of the TICCIT program and set a date for sometime during the week of April 18-22, 2011 for your presentation. You can suggest speaking to just one classroom of students or multiple classes/entire grade, either outside in the playground, in a classroom, or in an in-school assembly area. Also determine who will lead the discussion—you or the teacher?

Finally, make sure to get an accurate count of how many students will be participating so you know how many saplings to order.

March

Order saplings from the Arbor Day Foundation (see above) or contact a local nursery to see if they might donate saplings for the presentation. You can also choose to order some tree seeds and have the students plant seeds in the milk carton instead.

Beginning of April

Remind your elementary school contact to have students save their milk cartons either from the school cafeteria or bring one in from home, making sure to carefully wash them out first. Or you may prefer to supply the students with a generic paperboard box manufactured at your facility. Another option is to bring paperboard supplies to the presentation and then instruct students how to create their own box in which they can plant the sapling.

Mail out a press release (see sample of pg. 13) on the upcoming TICCIT presentation to your local media and follow up with a phone call. Often a local newspaper will see this as a photo opportunity to showcase local schoolchildren participating in something positive for both the environment and the local community. This is also a great way to showcase your company's commitment to your community and its young people.

Email or mail photo releases (see sample on pg. 14) to the school. Ask teachers to distrbute them to students, have parents sign them, then have students bring in the signed form prior to the presentation date. This will enable photos taken at your activity to be used in ongoing TICCIT promotions.

Mid-April

Compile all the necessary materials for the presentation (see sidebar).

TICCIT Week

Make your TICCIT presentation and have fun!

End of April

Submit a post-event press release to the local media. Since newspapers are notoriously shortstaffed and overworked, you may also wish to submit photos taken at the event and even an article to local newspapers, letting them know that they have permission to publish your piece as is or in an edited form.

Also make sure to submit the best photos taken at the event to the Director of Marketing and Communications at PPC, for posting on the PPC website.

Classroom Questions

Below are questions you can ask students as a way to engage them in conversation. You may wish to begin by showing students examples of the type of boxes that your company makes and describing how they are made from paper and how paper is made from trees. Then ask the following questions:

Why are trees important?

- A tree breathes in the carbon dioxide we exhale and breathes out oxygen, which is very important to us as we cannot live without oxygen.
- Trees give birds, squirrels, insects, and other creatures homes.
- Trees hold the soil in place and keep it from washing away (erosion).
- The leaves trees drop enrich the soil as they biodegrade.
- A tree's roots and leaves clean pollutants from the air and soil.
- They are a source of food (berries, fruit, nuts).
- Forests attract outdoor recreation activities.
- Trees cut heating and cooling costs when planted around the home (up to 20%).

What kind of things are made of wood?

- Lumber for making houses, furniture, pencils, baseball bats, etc.
- Medicines such as aspirin (willow) and cough medicine (eucalyptus), as well as medicines to treat asthma (tea tree and eucalyptus) and even cancer (soursop).
- Detergents, makeup, vitamins, soap, roofing shingles, and even toothpaste.
- Paint solvents, such as turpentine.
- Paper products such as paper towels, toilet paper, writing paper, and paperboard packaging.
- Logs for cooking and heating.
- Torula yeast, produced from wood sugars, is used in baby foods, cereals, imitation bacon, pet foods, and baked goods.

How are trees used for paper?

Only small trees (smaller than eight inches around) or really big trees (not suitable for lumber), are "harvested" (cut down) to make paper. Trees that are dying (from old age, disease, insects, or forest fires) are also used to make paper. These trees come from forests called "managed timberlands," which is like a tree farm. So when a tree is cut down, baby trees, or "saplings" are planted to take their place, and are carefully grown to be harvested again a few years later when they reach the right size and age.

This is also called "sustainable forestry." ("Sustainable" means "not wasting" or "not taking more than you use."). Oil (from which gasoline and plastic is made) and coal are NOT renewable; when they are taken from the ground and used, they cannot be replaced!

How is paper made?

When a tree is harvested, the limbs and the bark are first taken off and burned for fuel or used to make garden mulch. The wood that is left over is then cut into small pieces about the size of a quarter.

These wood chips are composed of half water. So the water is next cooked off, leaving half fiber, half "lignin," the glue that holds the wood fibers together. The pulping process finally removes the lignin, leaving just the fiber, which is what is used to make paper.

Will we ever run out of trees?

Not as long as we continue to use wood products, such as paper and paper packaging (like what your cereal box is made of). But if we quit using trees, those who own the tree farms will be forced to find another way to make a living, such as selling the land on which to build houses or shopping centers. Unfortunately, this also means cutting down all the trees and not replacing them with new ones. So it is important to keep using paper products so that the tree farms can stay in business.

How is paper recycled?

Approximately 60% of all the paper used in the United States is recycled, which means it did not go into the landfill and is instead reused to make new paper. In fact, more paper is recycled than all glass, plastic, and metal combined!

Recycled paper is made of old newspapers, boxes, books, documents, magazines, etc. But you can only reuse old paper up to seven times before the fibers get too worn out to make new paper. When this happens, new fiber has to be added to replace the worn-out fiber.

—Thanks to Clearwater Paper, Earth 911, EPA, and the Arbor Day Foundation

EARTH DAY: Every April 22

Earth Day was founded to inspire awareness and appreciation for the Earth's environment by U.S. Senator Gaylord Nelson as an environmental teach-in in 1970. While this first Earth Day was focused on the United States, in 1990 an organization launched by Denis Hayes took it international. Earth Day is now celebrated globally by the Earth Day Network by more than 175 countries every year.

Educational Compliance

TICCIT was designed to comply with the following National Science Education Standards:

NS.K-4.1 and NS.5-8.1 Science as Inquiry
Develop understanding about scientific inquiry.

NS.K-4.2 and NS5-8.2 Physical Science
Develop understanding of properties of objects and materials.

NS.K-4.4 and NS.5-8.4 Earth and Space Science
Develop understanding of the properties of earth materials.

NS.K-4.6 and NS.5-8.6 Personal and Social Perspectives
Develop understanding for types of resources and changes in environments.

Planting the Sapling

Begin by asking students where their milk carton came from, and then suggest that it might come from trees. Then using the *Carton Lifecycle* handout, briefly discuss the lifecyle of a milk carton and what the term "lifecycle" means. Explain how a tree is first cut down and then transported to mill, which cuts the tree up in small bits to create the carton. The carton is then filled with milk and sent to the grocery store where it is purchased. Once the milk has been consumed, the carton can be put back into the ground (as it is "biodegradable") to create healthy soil for growing more trees.

Next, explain to students that they are going to use the milk cartons they collected to help grow new trees. Using the suggested *Classroom Questions* as a guide, ask them why it's important to replant trees and discuss their answers.

Finally, work with students to make the milk carton sapling-ready. Depending on the age of the students, you may wish to set up planting stations. At one station, for instance, an adult can assist students cut the top off their carton. At the next station, students get help punching holes in their carton. Soil is distributed at a third station while planting the sapling or seeds happens at a fourth.

Other Ideas

- In conjunction with your partner school and local officials, establish an area in your community where saplings can be planted by students.
- Have students research renewability, recyclability, and/or the benefits of trees and have at least one question ready to ask at the presentation.
- Help students create their own carton with the *Make Your Own Box Activity Pages* and then draw on it the benefits of trees, packaging, or recycling.
- Bring a bag filled with items that contain something derived from a tree. Then hold each one up and have the students raise their hand if they think part of it came from a tree. Divide the yes's and no's onto opposite sides of the table and then discuss their answers.

—Thanks to Clearwater Paper and the Arbor Day Foundation

Planting How-Tos

1. If using seeds, soak them for several days until they start to swell up and sprout. Or place seeds in a bowl, pour boiling water on them, then leave them to soak overnight. Then only plant the seeds that have sunk to the bottom of the bowl. This activity can be done by students in the classroom prior to the presentation, or by yourself.
2. Help students cut the top 1/4 off of a milk carton with scissors.
3. With a fork, help students punch holes in the bottom and along the bottom of each side for drainage.
4. Fill the carton to about one inch from the top with potting soil.
5. Plant saplings about half way down (or seeds about 1/4 inch) into the soil.
6. Students can now take the carton home with them. Make sure to distribute Aftercare Instructions (see pg. 12) to students so they know how to properly care for their sapling/seedling and the best conditions for planting.

ACTIVITY: Make Your Own Paper

Papermaking Materials List

- Deckle (wooden frame with wire screening attached). You can pick one up at any craft supply store, order online, or make your own!
- Blender
- Large bowl and pan
- Sponge
- Water
- Newspaper
- Leaves, grass, flower petals, or other natural elements that will lie flat
- Paper (newsprint, construction paper, notebook paper, tissues, and even old greeting cards will work!)

1. Explain to students that they will be making new paper from used paper so they can see how recycling works.

2. Tear up paper into small pieces and soak in hot water for a few minutes.

3. Fill a blender halfway with warm water and then add a handful of the soaked paper. Blend the paper until the pulp has a soupy consistency.

4. Place the deckle in the pan and pour the mixture in. Holding the deckle underwater, move it back and forth to get an even layer of pulp on the screen. If you want, you can add leaves, grass, flower petals, or other natural, flat elements to the pulp at this time. Have students try making different colors of paper by blending up different types of paper.

5. Lift the deckle out of the mixture, making sure to keep it flat, then gently squeeze out the moisture by pressing the pulp against the screen. Use the sponge to absorb excess water from the bottom of the screen.

6. After covering a flat surface with newspaper, turn the deckle paper side down and gently tap on the screen to help release the paper. Let it dry for as long as possible then gently peel off the paper. If working outside, lay the paper in the sun to dry.

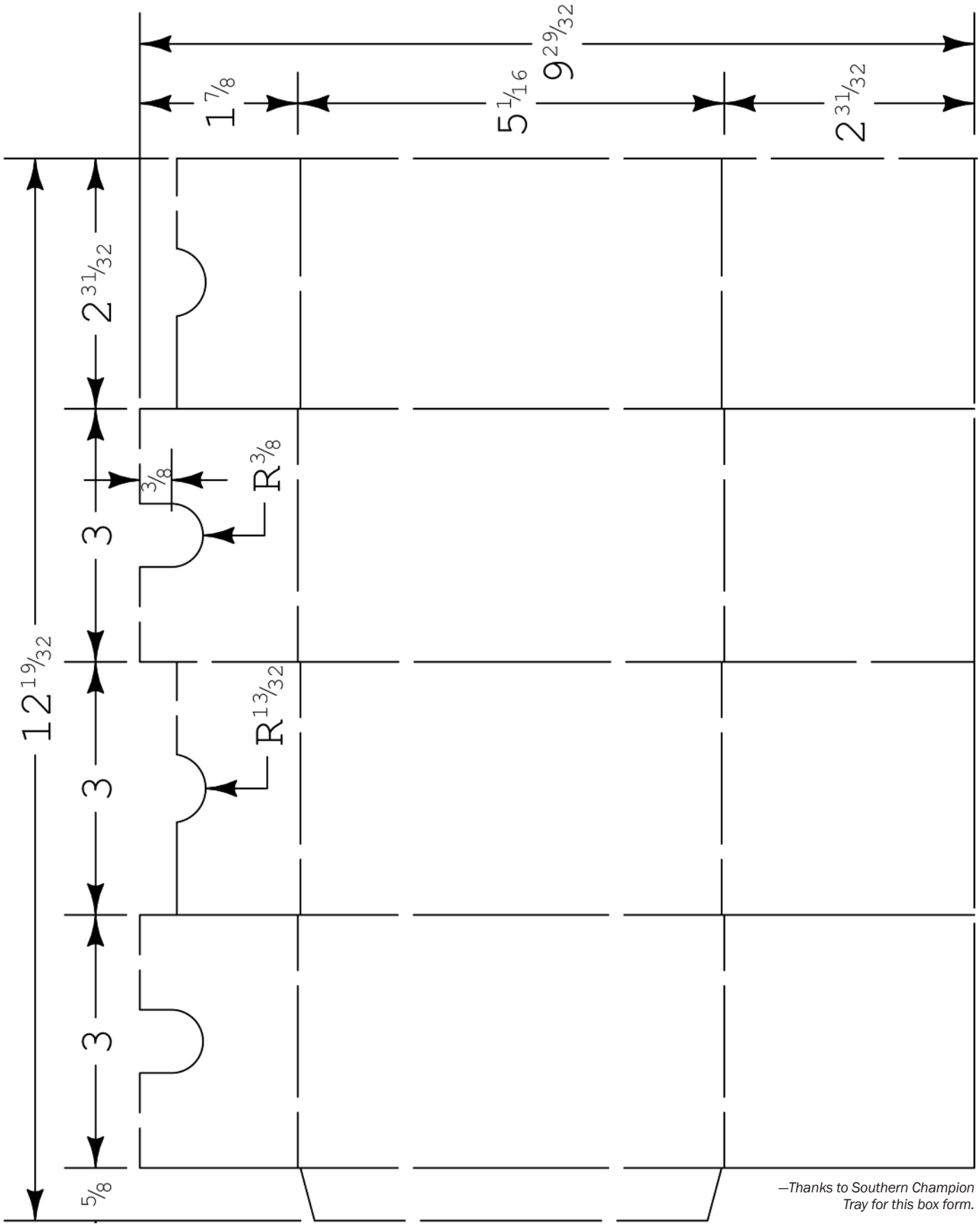
—Thanks to www.paperrecycles.org, bontragerwedding.blogspot.com, sieversschool.com

ACTIVITY: Make Your Own Box

Here is a simple pattern for a box in which to plant your seeds or sapling. Just photocopy this design on cardstock to the approximate dimsensions listed (does not have to be exact), cut out the box along the solid lines, fold along the dotted lines, and then glue or tape the "tabs" in place and shown here. You can then have students to decorate the box with designs on what Earth Day means to them!

Thanks to Southern Champion Tray for these images.

ACTIVITY: Make Your Own Box



—Thanks to Southern Champion Tray for this box form.

FUN FACTS: Paper and Recycling

- In 200 BC, the Chinese used old fishing nets to make the world's first paper.
- In the 19th century, people used old clothes and rags for making paper.
- Trees used to make packaging are grown on tree farms and are harvested just like wheat or other farm vegetables.
- Trees that are dying from old age, disease, or forest fires are used to make paper. Cutting down these dying trees also improves the health of the forest.
- Five trees are planted for every one that is cut down. Over the past 100 years, our forests have increased by 40%.
- Wood waste such as sawdust is not thrown away at a "paper mill"(a plant that cuts trees down into wood), but is burnt to create energy to actually run the mill.
- Every ton of paper recycled saves more than 3.3 cubic yards of landfill space, which is about the size of a small refrigerator.
- Every day, U.S. paper manufacturers recycle enough paper to fill a 15-mile-long train of boxcars.
- In the U.S., an average of 340 pounds per person a year of paper is recovered for recycling, the equivalent of the weight of an adult black bear.
- In the U.S., paper accounts for 2/3rds of all the packaging material recovered for recycling, more than glass, metal, and plastic combined!
- Paper can be recycled into new products. The notebook paper you use in school can be recycled and made into new writing paper, newsprint, and packaging.

—Thanks to www.paperrecycles.org, TAPPI

FUN FACTS: What's in a Tree?

Trees are important because they provide a habitat for birds, squirrels, and insects; provide shade for smaller plants; and help keep soil from eroding. The leaves that drop in the fall decompose into new soil while both leaves and roots act as a natrual filter to clean unhealthy particles from the air. Trees also remove carbon dioxide from the air while adding oxygen to the atmosphere. Not only that, but every part of a tree can be used to make our lives better.

Below are some of the important things that can be made from a tree:

From Pulpwood
Paperboard, cellophane, shatterproof glass, alcohol, and other items.

From Roots
Oil and tea.

From Sap
Glues, varnish, printing ink, paint, fireworks, stains, and other items.

From Leaves & Needles
Oils, especially pine and cedar.

From a Stump
Veneer, charcoal, pitch, and wood tar.

From Bark
Dyes, glues, medicine, and fuel.

Softwood trees that hold onto their needles throughout the year (evergreen) such as spruce, pine, and fir, produce long fibers that make paper strong. Hardwood trees, which have broad leaves and are deciduous (lose their leaves in the fall) have shorter fibers which make for a smoother printing surface. Typical hardwood trees used for making paper and paperboard packaging include oak, maple, and birch.

Depending on the species, about 40% of the tree consists of fibers suitable for papermaking. Milk carton board is usually made up of 60% hardwood and 40% softwood.

FUN FACTS: How a Milk Carton is Made

The paper milk carton as we know of it today was introduced in 1933 when wax was applied to paper to make it waterproof. Although refillable glass bottles continued to be used by most Americans, by 1968, over 70% of milk packaged in the United States was delivered in paper cartons.

The manufacture of milk cartons is actually a two-step process. The carton manufacturer first cuts and prints the carton, which is shipped in a "knocked down" or flattened form to the milk packager. The packager then completes the process by forming, filling it with milk, sealing the carton, and then delivering it to the store shelf.

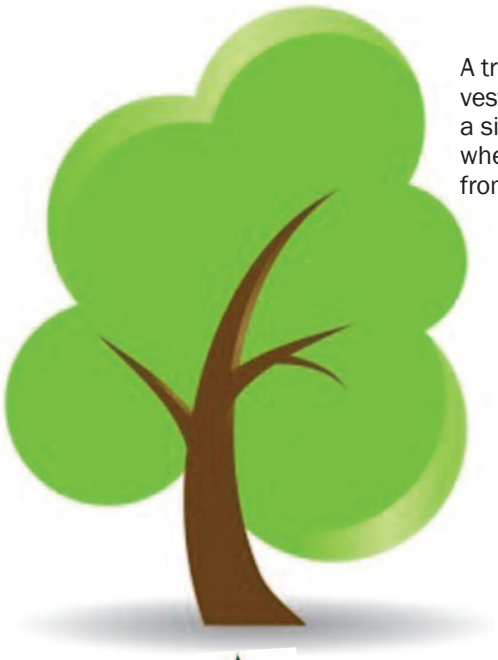
Today, milk containers are made from paperboard coated with a small quantity of waterproof plastic. The wood pulp that is used to make paperboard for milk cartons is a blend of softwood and hardwood. Softwood is usually a type of pine, though the actual trees used vary.

ABOVE: This 1914 cone-shaped, waxed paper bottle was one of the first types of milk cartons made of paper and not glass.

RIGHT: Milk cartons being made at a modern packaging plant.

—Thanks to www.enotes.com/how-products-encyclopedia/milk-carton; www.dairyantiques.com, www.prodauto.co.uk

FUN FACTS: The Lifecycle of a Milk Carton



A tree first gets harvested from a forest in a similar way to how wheat is harvested from a field on a farm.

The tree is turned into lumber for houses and the sawdust from making the lumber goes to a paper mill and turned into paper and "paperboard."

The paperboard is then made into a milk carton.

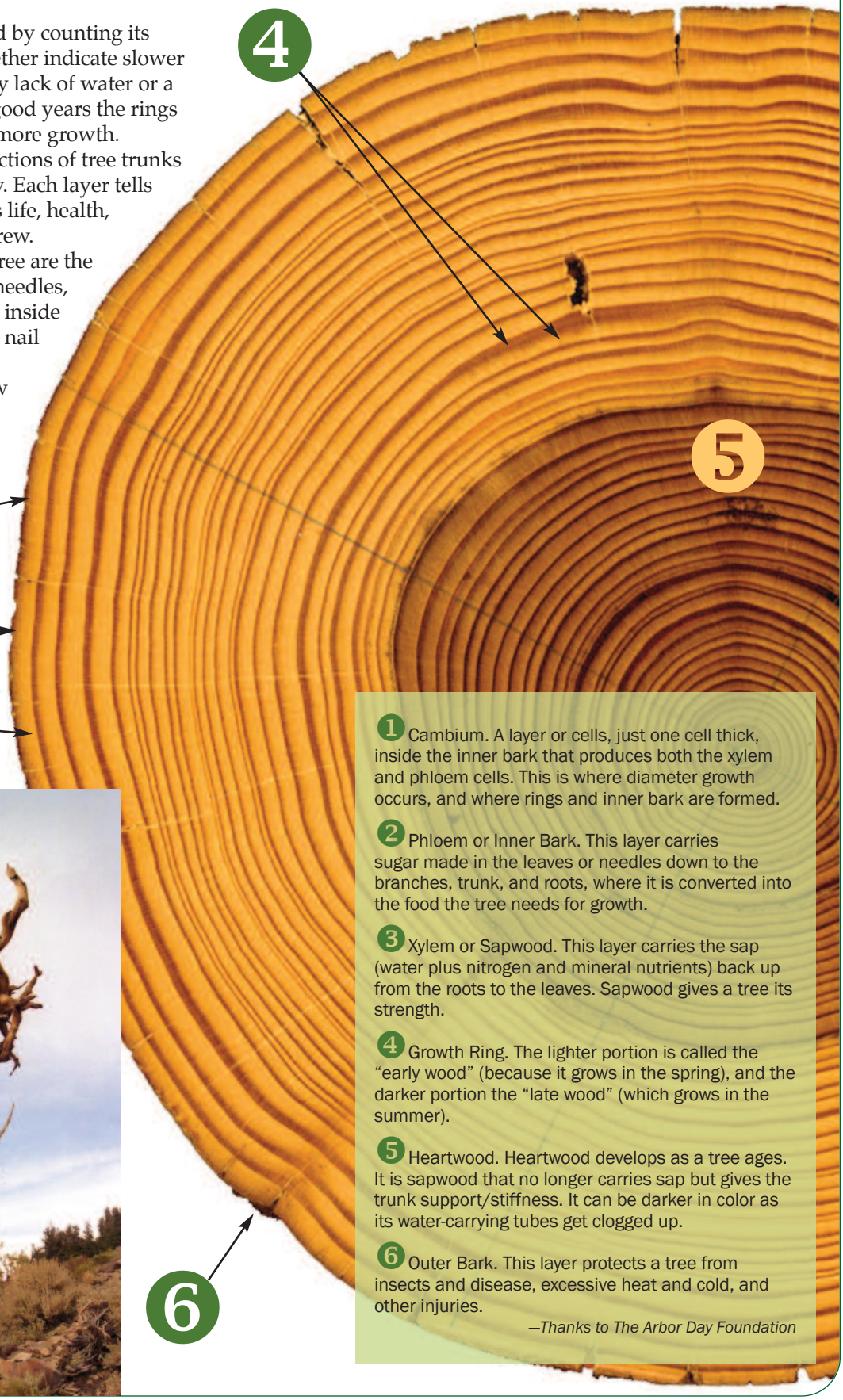
When you plant the seed or sapling in the milk carton and then in the ground, the carton with "biodegrade," or turn back into healthy soil.

FUN FACTS: How Old is It?

The age of a tree is found by counting its rings. Rings closer together indicate slower growth likely caused by lack of water or a long winter season. During good years the rings are further apart, indicating more growth.

Tree "cookies" are cross-sections of tree trunks that illustrate how trees grow. Each layer tells us something about the tree's life, health, and the climate in which it grew.

The only living parts in a tree are the tips of the branches, leaves/needles, roots, and a layer of cells just inside the bark. So if you hammer a nail in a tree, it won't move up as the tree grows. For trees grow taller and longer only at the tips of the branches and trunk.



The oldest known tree is California's Bristle-cone Pine, which is at least 4,700 years old.

1 Cambium. A layer or cells, just one cell thick, inside the inner bark that produces both the xylem and phloem cells. This is where diameter growth occurs, and where rings and inner bark are formed.

2 Phloem or Inner Bark. This layer carries sugar made in the leaves or needles down to the branches, trunk, and roots, where it is converted into the food the tree needs for growth.

3 Xylem or Sapwood. This layer carries the sap (water plus nitrogen and mineral nutrients) back up from the roots to the leaves. Sapwood gives a tree its strength.

4 Growth Ring. The lighter portion is called the "early wood" (because it grows in the spring), and the darker portion the "late wood" (which grows in the summer).

5 Heartwood. Heartwood develops as a tree ages. It is sapwood that no longer carries sap but gives the trunk support/stiffness. It can be darker in color as its water-carrying tubes get clogged up.

6 Outer Bark. This layer protects a tree from insects and disease, excessive heat and cold, and other injuries.

—Thanks to The Arbor Day Foundation

Sapling Aftercare Instructions

White Pine
(*Pinus strobus*)

Dear Parents,

Today your child participated in an Arbor Day/Earth Day event, in which they learned how trees are grown and harvested for the making of paper, and then turned into packaging materials that are also recyclable and renewable.

As part of this program, your son or daughter was also provided a sapling that they planted in their lunchtime milk carton. The sapling is a white pine, which gives lovely shade and has long, soft needles. This is a hardy tree that can grow in most conditions.

Below you will find instructions on how to care for your sapling and how to prepare it for planting. May you enjoy watching this tree grow for years to come!

1. "Harden off" the sapling for a few days before planting by placing it in a protected area out of the wind or sun.

2. Select an appropriate location with enough space to contain what will be a mature tree.

3. Dig a hole large enough to contain the carton

4. Help your child make a few slices in the bottom of the carton with a knife. (Try to transplant the seedling and carton on an overcast day; otherwise, plant in late afternoon or early evening to avoid drying out of the root hairs.)

5. Place the carton in the hole with about one inch of the carton projecting above ground and lightly tamp the soil up around the carton. The sides of the carton will force the water straight down into the soil and the roots will follow through the bottom of the degrading carton.

6. To start, water the sapling with a quart of water once a week. Add a day between waterings as the roots grow deeper.

7. Eventually the carton will rot away, leaving a growing tree.

YOUR COMPANY'S CONTACT INFORMATION HERE

Sample Press Release

COMPANY LOGO HERE

FOR IMMEDIATE RELEASE
DATE

Springfield's Brightwood School and Local Business Celebrate Arbor Day by Planting Trees
Thursday, April 15, 2–3:15 p.m.

SPRINGFIELD, MA—On Thursday, April 15, 2010, fifth-grade students and teachers at Springfield's Brightwood School will recycle their milk cartons and plant trees in honor of this year's 40th anniversary of Arbor Day and as part of the Paperboard Packaging Council's (PPC) TICCIT Program ("Trees Into Cartons, Cartons Into Trees"), which promotes tree planting as a way to highlight the need for recycling paperboard products.

On Thursday, Springfield-based PPC will offer the students a cross-curriculum program that will teach about recycling, paper manufacturing, soil science, biology, and social studies by instructing them on how to plant their own sapling in recycled milk cartons. It will also be an opportunity for the children to learn about and honor Earth Day and Arbor Day.

PPC, in partnership with the Arbor Day Foundation, will provide the saplings to the schoolchildren free of charge as part of PPC's TICCIT program, which is designed to highlight to elementary schoolchildren from all over the United States and Canada the importance of recycling and planting trees.

LIST HERE GENERAL INFORMATION ABOUT YOUR COMPANY HERE

CONTACT INFORMATION
YOUR COMPANY'S CONTACT INFORMATION HERE

###

Photo Release

Where there is a blank space, just write in your company's name

I hereby grant the Paperboard Packaging Council (PPC) and _____ permission to use my likeness, name, or image in any and all publications, including websites, without payment or any other consideration, in perpetuity.

I understand and agree that these materials will become the property of the PPC and _____ and will not be returned.

My photos can also be used for my personal or professional use.

I hereby authorize PPC and _____ to edit, alter, copy, exhibit, publish, or distribute these photos for purposes of publicizing PPC's and _____ programs or for any other lawful purpose. In addition, I waive the right to inspect or approve the finished product, including written or electronic copy, wherein my likeness appears.

Additionally, I waive any right to royalties or other compensation arising or related to the use of the photograph.

I hereby hold harmless, release, and forever discharge PPC and _____ from all claims, demands, and causes of action which I, my heirs, representatives, executors, administrators, or any other persons acting on my behalf (or on behalf of my estate) have or may have, by reason of this authorization.

I fully understand the contents, meaning, and impact of this release. If under the age of 18, I will also have this photo release form signed by my parent or guardian.

Date _____

Print Name_____

Signature _____

Parent or Guardian Signature_____

Graphics

These graphics are provided here in the event you wanted to create your own posters, t-shirts, fliers, or other presentation materials.

TREES INTO CARTONS, CARTONS INTO TREES

TICCIT

TREES INTO CARTONS, CARTONS INTO TREES

TICCIT

TREES INTO CARTONS, CARTONS INTO TREES

TICCIT 2011

1350 Main Street, Suite 1508 · Springfield, MA 01103 · 413.686.9191 · 413.747.7777 fax · www.ppcnet.org