Arbor Day In Kentucky

First Friday in April

Celebrate Arbor Day!

Dear Friend,

Tree planting is what Arbor Day is all about. Just one tree planted on Arbor Day does more than shade the spot where it's planted. It gives root to the love of trees and the stewardship of renewable resources.

This "Guide to Arbor Day", is a collection of ideas, tips, facts, and activities designed to make your observance an exciting and lovely tradition…and to help young people become tree conscience all year long. Through Arbor Day celebrations and teaching students about trees, you help them plant the future for themselves and for generations of Kentuckians to come!

So, Let's get busy-**Raise the flag**, strike up the band, make Arbor Day fun! Make it memorable! Organize a fun run. Make it a real event. See if a local business will donate prizes. Have a poster contest, or a poetry contest. Get the local PTA to sponsor a children's pageant or play. Organize and train volunteers to help you carry out Arbor Day ceremonies in your schools.

Get people excited. Show them things they've never seen before. Tell them things about trees they've never heard.

Fill the air with music. Have an Arbor Day concert of songs about trees, or with tree names in their titles.

Get people into action. Ask a civic or service group to promote a paper drive to gather paper to be recycled and save a tree. Use the proceeds to buy a special tree to plant in a park or other special public place. Ask a local radio station to sponsor a tree trivia contest and give away trees to winners. Conduct a tree search. Ask people to find large, unusual or historic trees in your community. Tell people to take a hike—a tree identification hike—and have girl scouts or boy scouts act as guides.

Dedicate a forest, or a tree, or a flowerbed in a park, and make it an occasion to talk about stewardship. Get a local nursery or garden center to hold an open house or field day. Organize an Arbor Day Fair.

Get people together. Encourage neighborhood organizations to hold block parties and get their members to adopt and care for street trees in front of their homes. Pass out buttons. Give away trees.

Celebrate Arbor Day in a personal way by planting a tree yourself. It is an act of optimism and kindness, a labor of love and a commitment to stewardship. Anyone can do it. Start a tree seed in a cup, or a seedling in a pot. If you have no place to set it out later, give it to someone who does, and then watch it grow together. Find a place to plant a seedling or a sapling or the largest tree you can handle alone.

Create a science table and an art gallery—both for displaying tree and forest related items.

As Aldo Leopold said, "Acts of creation are ordinarily reserved for gods and poets. To plant a pine, one only needs a shovel."

Happy Arbor Day!

Arbor Day In Kentucky

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Admist The Trees

Written by Billy Joe Fudge, District Forester (retired)
KY Division of Forestry

I heard a tree who was standing by the street;
He called to me and said, "Please have a seat.
Now just sit and listen to what I have to say
For I'm sick and hurt and could die any day."

"Oh, I know you're tired of hearing people gripe,
And you probably want me to go fly a kite.
I would, too, if I could pull up roots and move,
But I can't and I really have the blues."

"I love to clean the air and shade the arid soil,
But what you've done to me makes my blood boil.
You've broken my bark and cut off my crown.
You've built sidewalks and roads all around."

"You've cut and slashed and made me look like a clown.
You've changed my world and cut my friends down.
You've polluted the air that I need to live.
You've taken about everything, I have to give."

Well, my mind was blown and I was quite relieved
When this old street tree stopped to breathe.
By this point I was feeling really low,
And I tried to explain that I didn't know-

He understood though he could not reply.
I believe he forgave me as he began to cry.
My guilt was softened but his problems were not
And I wanted to help him, to help him a lot.

Then he motioned for me to come near
And with great effort whispered in my ear.
He said, "Friend, I know for me it's too late,
The reason I speak is for the future's sake."

"Tell everyone we love working for men,
And to not help us is a great sin.
Help my children so they won't be like me
Then when they're old, they'll be healthy trees."

After a short while with leaves on the ground,
That old street tree's soul left our town.
We replaced him amidst much remorse,
But things will never be the same of course.

They say you can't miss things until they've gone.
And it really rings true in this street tree's song
For now we all know that come next spring,
He won't be here to help us sing.

Arbor Day History

The spirit of Arbor Day is unique in that it looks forward, never backward. It directs the mind and heart of participants to higher goals—goals which can be attained only through personal involvement, sacrifice, planning, and responsible action. It is a spirit that appeals to the young of heart and inspires them to work for the betterment of their community, state, and nation.

The beginning

Fifteen hundred years ago in a little town in Switzerland, the people decided to improve the common area in the village by planting oak trees. A work day was set aside and the men, women, and children went into the woods and dug up saplings, carried them to the center of their market place, and planted them under the direction of a local gardener. That evening, the people held a festival and every child received a sweet roll as a reward.

The saplings, well-watered and cared for by local volunteers, grew into fine oaks, furnishing a place of shade, rest and recreation for the citizens and their descendants. The village celebrated this tree planting for years with a parade and feast.

Arbor Day in the US

Born in upper New York State in 1832, educated in Michigan, J. Sterling Morton followed the westward movement of the pioneers and in 1854 settled on the west bank of the Missouri River near the present town of Nebraska City.

Morton loved trees for their own sake, for their beauty and for the creation of an enjoyable environment. He planted the grounds of his home, "Arbor Lodge", with rare and exotic trees from all over the world. ("Arbor Lodge" is now a Nebraska State Park. The magnificent trees Mr. Morton planted more than a century ago may be viewed and enjoyed by all.)

Morton's trees grew and flourished. He encouraged his neighbors to plant. He then conceived the idea of planting trees over all the bleak plains of Nebraska. He knew how important trees were in developing a pleasing home environment and in controlling the rigors of a harsh climate.

Arbor Day originated and was first observed in Nebraska in 1872. Mr. Morton, then a member of the State Board of Agriculture, and later United States Secretary of Agriculture conceived the plan. At a meeting of the State Board of Agriculture of Nebraska, held at Lincoln, January 4, 1872, he introduced a resolution to the effect that Wednesday, the 10th day of April, 1872, be set apart for tree planting in the state and named Arbor Day.

Wide publicity was given to the plan and more than a million trees were planted in Nebraska on that first Arbor Day. The adoption of the Arbor Day plan meant organization of tree planting work. As early as April 4, 1895, the state had become so active in tree raising that the legislature passed a resolution that the state be popularly known as the Tree Planter's State. Under the Kincaid Act, the U.S. Forest Service distributed 2 million young trees from the federal nursery to 10,000 residents in addition to the planting done on government land in Nebraska.

Arbor Day in Kentucky

The Arbor Day idea quickly spread to neighboring states. In 1896, the Kentucky General Assembly showed its enthusiasm for Morton's idea and established Arbor Day in our state. The legislature passed a resolution asking Governor William Bradley to "…call the attention of the people of this state to the importance of planting trees for ornament, protection, and shade, by naming a day upon which this work shall be given special prominence, to be known and designated as Arbor Day".

The actual day has been changed several times. There is a National Arbor Day proclaimed as the last Friday in April; however, due to the great climate differences that effect ideal planting times, most states determine their own particular Arbor Day date. At the Kentucky Division of Forestry's request, in 1964, legislature by Joint Resolution designated the first Friday of April as Arbor Day in Kentucky.

Planting Your Tree

Choose The Right Tree

Planting a tree starts with planning. Before you get your shovel, pick the right tree for the right spot. Consider the planting site. Will your tree prefer...full sun or shade? deep or shallow soil? alkaline (>7.0 pH) or acid soils (<7.0 pH)? moist or dry sites?

Look to the future. What will be your tree's...mature height? limb pattern? Will it need a lot of growing room? rooting material? Tree roots grow toward moisture, so avoid sewer/drain lines.

Storing The Tree

If planting is delayed only a few days, keep the roots and top moist by putting the tree in a protected place and covering. If replanting is delayed weeks or months, heel-in the tree. In a shady place away from the wind, dig a trench that will accommodate the root ball. Slope on side of the trench 45 degrees or lower. Place the root ball in the trench and rest the trunk against the sloping side. Cover the root ball with loose soil.

Preparing The Hole

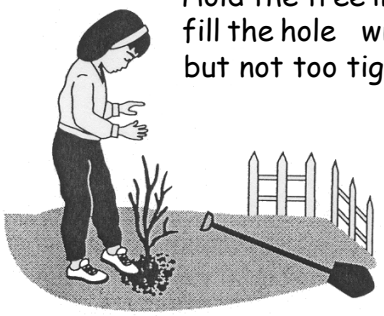
If your tree has a ball of soil around the roots, dig the hole a little deeper than the ball of soil, and about twice as wide. If you plant a younger seedling with bare roots, dig a hole wide enough so roots won't be bent. Put compost in the bottom of the hole. This will feed growing tree roots. The bottom of the hole should be firm, and the sides of the hole should slope out away from the root ball.

Placing The Tree

The balled/burlapped tree can be placed in the pre-dug hole a day prior to planting, but the roots must be protected from freezing. A tarp, blanket, leaves, or other covering will generally be adequate overnight protection. Set the tree in the hole so that the root ball is covered. The tree should be replanted at the same depth as at the nursery. Cut the twine from the stem or trunk, and loosen the burlap away from the trunk. If the root ball is covered with plastic or synthetic burlap, it must be removed.

Fill The Hole

Hold the tree in place and carefully fill the hole with soil. Pack it down, but not too tight!

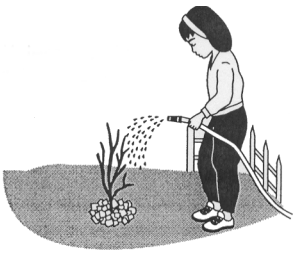


Add Mulch

In a 2 to 3 foot circle around the tree, place 2 to 4 inches of mulch on the ground. The mulch should not touch the tree trunk. Raise the edges to hold water. Mulch can be wood chips, bark or peat moss. Mulch helps keep roots moist and insulates them. It prevents weed growth, which robs a young tree of nutrients. You can also use weed barrier fabric.

Water The Tree

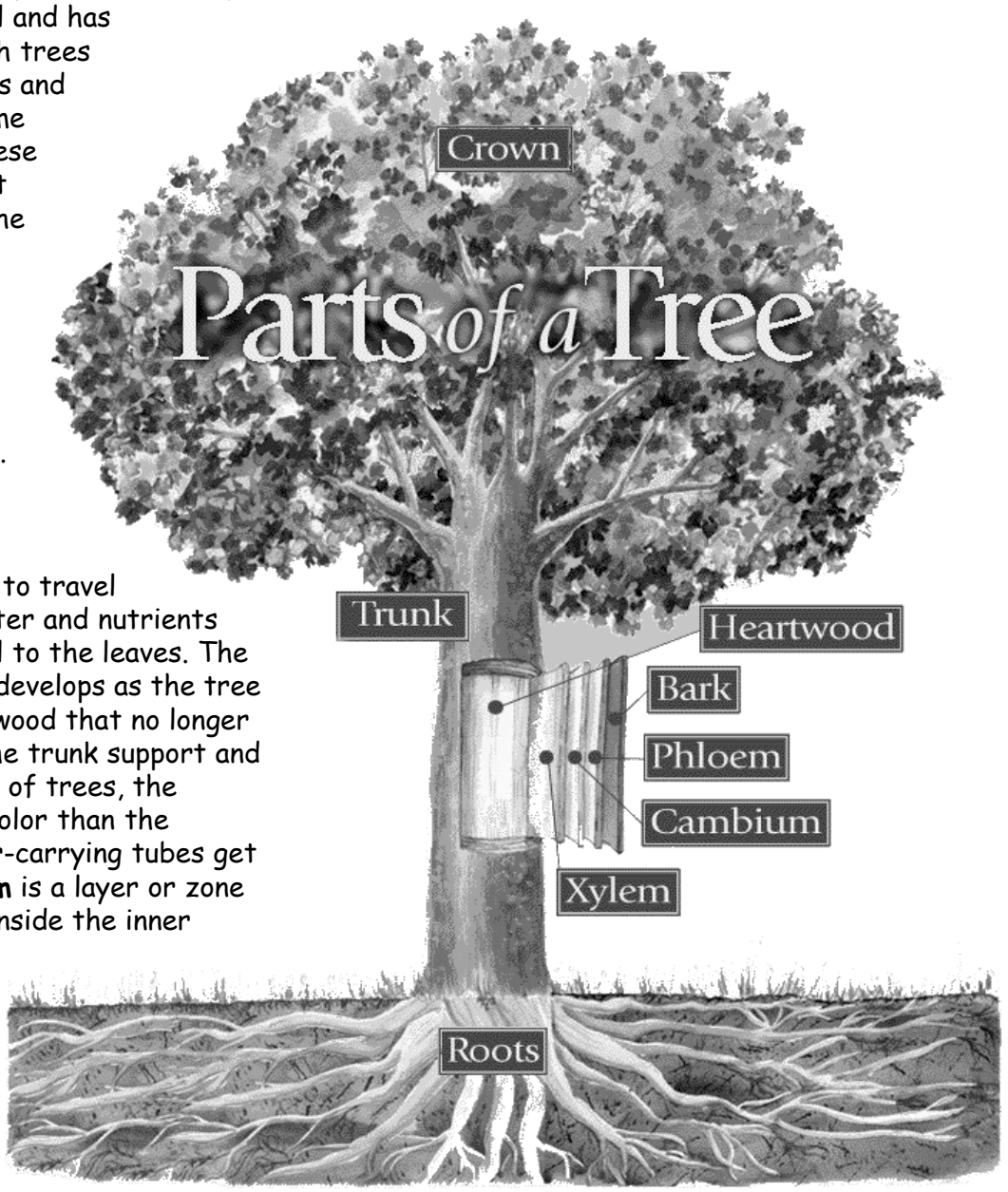
Water the tree well as soon as you plant it. For the first year after planting, water the tree well at least once a week. Not watering newly-planted trees is the most common reason they die! In the second year after planting, water the tree well during dry periods.



GIVE A TREE A LITTLE - IT WILL GIVE YOU A LOT!

Parts Of A Tree

A tree is a woody plant that usually is more than 10 feet tall and has one main stem. Although trees come in different shapes and sizes, most have the same basic parts. Each of these parts - from the highest leaves in the crown to the tiny root hairs buried in the soil - plays an important role in the tree's function and survival. The **Crown** of the tree is made up of the leaves and branches. The **Trunk** of the tree supports the crown and serves as a highway for food made in the leaves to travel to the roots and for water and nutrients from the roots to travel to the leaves. The **Heartwood** of the tree develops as the tree gets older. It is old sapwood that no longer carries sap, and gives the trunk support and stiffness. In many kinds of trees, the heartwood is a darker color than the sapwood, since its water-carrying tubes get clogged up. The **Cambium** is a layer or zone of cells, one cell thick, inside the inner bark. The cambium produces both the xylem and phloem cells. This is where diameter growth occurs, and where rings and inner bark are formed. In the **Xylem** (sapwood) layer, tree sap (water plus nitrogen and mineral nutrients) is carried back up from the roots to the leaves. Sapwood gives a tree its strength. In the **Phloem** (inner bark) layer, sugar that is made in the leaves or needles, is carried down to the branches, trunks, and roots, where it is converted into the food (starch) the tree needs for growth. The **Bark** layer protects the tree from insects and disease, excessive heat and cold, and other injuries. The **Roots** of the tree support the trunk and crown, and also anchor the tree in the soil. They serve as a storage facility during the winter for the food produced by the leaves during the growing season. The roots also absorb water and nutrient from the soil for use by the tree.



How Does A Tree Grow?

A tree is a living being. It eats, drinks, sleeps, breathes, perspires, and bears offspring and dies.

A tree is born when a seed falls or is placed in the ground. Rain opens it, and the pre-formed root grows up. Food stored in the seed feeds the young seedling until it can make it's own food. Sunlight, water, and carbon dioxide combine together and the plant grows. If any of these elements are missing, the seedling will not live.

As the root pushes further into the ground, the tree shoot grows up, and the stem becomes wider. A tree becomes taller from the buds formed at the end of each growing season. Annual rings show how much a tree has grown each year. If a tree has fallen, one can count the rings and see how many years old that the tree is.

Many things affect a tree's growth, strength and health. A tree's surroundings or environment determines its growth. That includes factors like temperature, sunlight, water, air, soil, insects, streetlights, and heavy pollution. A tree is born with certain characteristics that are inherited from its parent or parents, just like you are! These characteristics include size, shape, leaf type, kind of bark, and type of roots.

A tree has a set of veins inside its trunk called the vascular system. It's like a pipeline that pumps water from the roots up to the top of the tree and pumps food made in the leaves down to the rest of the tree. This is how a tree eats and drinks. The food goes to all parts of the tree, helping it grow. The water that goes to the top of the tree evaporates into the air and cools the surrounding area. This is one of the many benefits that we and the rest of nature receive from trees.

A tree gets its vitamins from the soil which helps it manufacture the food it uses. The process of manufacturing food by converting energy from the sun is called photosynthesis.

Benefits of Trees

Never underestimate the power of a tree! Besides giving us an amazing array of paper and wood products, trees provide a host of other benefits—from shading our backyards to assisting in the maintenance of the global climate. Trees help settle out, trap, and hold small particles (dust, ash, and smoke) that can damage lungs. They absorb sulfur dioxide and other pollutants while replenishing the atmosphere with oxygen. Their roots grip and hold topsoil. Wooded creek banks and forested slopes reduce soil erosion.

Trees provide homes and food for birds and animals. They serve as a windbreak, keeping buildings warmer and provide shade, keeping buildings cooler. In fact, trees used as windbreaks and for shade can reduce energy bills by 30%. But maybe more important than all the rest, they provide beauty and enjoyment.

Definition of a Forest

A forest is land decked out in trees, a home for plants and animals, a place for people to live, work, and enjoy, and a source for valuable resources. Most of all a forest is an interconnected community of plants, animals, and microscopic beings; soil, minerals and water - all needing one another - in which trees are what you see at first glance. Sometimes the saying, "You can't see the forest for the trees," is true. You have to look very carefully at the trees and beyond to see the real forest. For a forest (urban & rural) isn't a forest without soil and water and sunlight and rain. It needs insects and birds to help with pollination and the scattering of seeds. All the trees, shrubs, mosses and mushrooms; birds and animals; spiders, frogs and snakes need each other to survive. They are all interconnected and form a community - or a neighborhood, of sorts.

Trees: a renewable resource

In urban areas, the tree species that are planted serve a specific function for the site. Often trees in urban areas are planted for their beauty, screening, or shading ability. In rural areas, forests generally grow back naturally from seeds or by sprouting from stumps. The species of tree that regenerates is dependent upon the seed source or
parent tree present.

Urban and rural forests provide many benefits to their inhabitants; these can be grouped into three categories: social, environmental, and economic.

Social Benefits

We like trees around us because they make life more pleasant. Most of us respond to the presence of trees beyond simply observing their four-season appeal. We feel relaxed in a group of trees. We often become personally attached to trees that we planted and because of their potential for longlife, trees are frequently planted, as living memorials to loved ones. A healthy forest growing in places where people live and work is an essential element of the health of people themselves.

In urban areas, trees contribute to a sense of community pride and ownership. They provide privacy and a sense of solitude and security. Trees have also been proven to shorten post operative hospital stays when patients are placed in rooms with a view of trees and open spaces.

In rural areas, trees are often noted for their aesthetic characteristics; breathtaking fall coloration of the leaves, spring flowers, green foliage in the summer, and unique bark and tree shape in the winter. And like the urban forests, rural forests also create feelings of relaxation and well being.

Environmental Benefits:

Trees in urban and rural areas both provide similar environmental benefits. They are capable of altering their environment in which they live by moderating climate, improving air quality, conserving water and sheltering wildlife.

Climate control is obtained by moderating the effects of sun, wind, and rain. Heat from the sun is absorbed or deflected by leaves on deciduous trees in the summer and is filtered by branches of deciduous trees in winter. In winter, we value the sun's radiant energy; and because of this, we plant deciduous trees on the south side of our homes.

Trees can affect direction and wind speed. The more compact the foliage of the tree or group of trees, the greater the influence of the windbreak.

The downward fall of rain, sleet, and hail is initially absorbed or deflected by trees and this provides some protection for the soil below, as well as people, pets and buildings. Trees intercept water, store some of it, reduce storm water run-off and the possibility of flooding.

Air quality is improved when leaves filter the air we breathe by removing dust and other pollutants. Leaves can absorb harmful pollutants such as ozone, carbon monoxide, and sulfur dioxide and still give off oxygen.

Trees provide food, nest sites, and shelter for wildlife. Birds and other wildlife are attracted to the more natural area.

Economic Benefits:

The economic benefits of urban and rural trees can be both direct and indirect.

In urban areas, direct economic benefits are usually associated with energy costs. Air conditioning costs are lower in a tree-shaded home. Heating costs are reduced when a home has a windbreak. Trees increase in value from the time they are planted until they mature. The indirect economic benefits of trees are even greater. These are available to the community or region. Lowered electricity bills are paid by customers when power companies are able to use less water in their cooling towers, build fewer new facilities to meet peak demands, use reduced amounts of fossil fuel in their furnaces and need fewer measures to control air pollution. To the community, reductions in these expenses are often in the thousands of dollars.

In rural areas, direct economic benefits are usually associated with timber values. The timber value of a forest is dependent upon species, size, quality, and accessibility. Also included are alternative forest crops such as Shiitake mushrooms, ginseng, and other herbs and spices. The indirect economic values include tourism dollars, hunting and fishing fees, camping and hiking, and other non-consumptive activities, such as bird watching, and wildlife photography.

We enjoy the beauty of trees, but trees are also valuable in many practical ways. By using as much of the tree as possible - and by planting new trees - we can be sure that we always will be able to enjoy the benefits that come from this valuable natural resource.

It All Comes From Trees

You may have eaten some wood today – and probably brushed your teeth with it. Chances are you even dressed with wood. Skeptical? Don't be. We're all familiar with forest products like lumber, furniture and paper. But few of us realize how many different things we regularly use which are manufactured from trees. More than 5,000 wood and paper products make our lives better each day.

Fruits & Nuts

Fruit from trees such as apples and peaches, as well as nuts from trees such as walnuts, are all favorite products grown on trees.

Baseball Bats

The white ash tree is a hardwood that is used to make baseball bats. The Louisville Slugger bat is made here in Kentucky.

Crackers

Not only is the cracker box a product of trees, but the crackers themselves can be made using a high purity grade cellulose.

Crayons

Gum extracted from trees can help make crayons.

Eyeglass Frames

Cellulose wood fibers are dissolved and can then be formed into molded articles like eyeglass frames.

Football Helmets

Ethyl cellulose is responsible for making hard impact resistant plastics found in football helmets.

Gum

Gum and synthesized essential oils from trees can be used to make chewing gum.

Clothing

Cellulose is used to produce rayon and acetate, which can be used to make a vast array of clothing such as, ties, shirts, dresses, and suits.

Ice Cream

Ice cream can be made with cellulose, which comes from trees.

Make-Up

Make-up can get its creamy texture from the tree derivative, cellulose.

Maple Syrup

Sap from trees is used to make syrup.

Milk Cartons

Milk cartons can be made from pulpwood.

Nail Polish

Nail polish contains nitrocellulose, making the polish glossy when it dries.

Perfume

Tree bark is used to make tall oil, which cosmetic companies can use to make perfumes.

Photo Film

Logs are reduced to pulp, which is processed to

If I Were A Tree

Have your students identify the parts of a tree on page 7. Compare tree parts with children's bodies (skin is like bark, roots like feet, etc.). To help your students learn the function of tree parts, read the poem below and have them act out the parts.

If I were a tree...
My feet would grow and grow and grow,
Down, down into the earth they would go.
These long, long feet would be so neat.
They would hold me in place
When the winds would blow.
Down, down, down they would sink
Looking for water for me to drink.
Best of all I wouldn't even need boots
For these new feet would be my roots!

If I were a tree...
My skin would grow hard and tough.
Yes indeed, it would even be rough.
My skin would turn bumpy and crinkly.
I have a feeling it might even be wrinkly!
But this wrinkly new skin that I'd be in
Would be my protection from injury.
Children would learn not to make a mark
On this new skin which is my bark.
Oh, how wonderful it would be
If only I could be a tree!

If I were a tree...
My arms would reach
And reach way out to the sun.
And one by one, I'd grow another one,
And another one. Wouldn't it be fun?
To reach out so far, and up so high,
And to be a place for birds to stop by.
They could stop for a rest,
Or if I'm lucky, they might even build a nest!
These new arms so long and trim,
Would be my branches or my limbs.

If I were a tree...
My arms would be all covered with buds.
Inside each one, curled up so tight
Would be tiny food factories waiting for light.
Every spring my buds would sprout.
Green and tender, they would open out.
Inside each one, food would be made.
And in summer's heat they'd provide cool shade.
In the fall when it grew cold,
My colors would change to red and gold.
Then off they'd go, dancing in the breeze.
You know these food makers are my leaves.
Oh, how wonderful it would be
If only I could be a tree!

-Maura O'Connor

Stanza 1
Have each child stand with legs apart and imagine their feet growing longer and longer. Have them sway in the breeze using their feet to hold them in place, and imagine being thirsty and feel water running up from their toes.

Stanza 2
Children should stand rigid and tall and imaging their skin getting tough and wrinkly-wrinkling their faces.

Stanza 3
Their arms could become branches as they stretch as far as they can. Have them move their arms to indicate new branches growing, and imagine birds stopping by and perhaps staying to build a nest in their arms.

Stanza 4
Have children make tight fists and slowly open their "buds" in the spring, and stretch their fingers as they reach way out for the sun. Ask them to imagine their fingers making food in the sunlight. Have them drop their arms slowly as their fingers dance in the breeze, simulating leaves falling to the ground in the fall.

Common Trees Of Kentucky

White Oak (Quercus alba) has deciduous leaves with 7-9 rounded lobes. The base of the leaf narrows abruptly to become wedge-shaped at the stem. The acorn is about 3/4-inch long, light chestnut brown, enclosed in a bowl-shaped cap. Growth is good on all but the driest, shallow soils, but is best on deep, well-drained loamy soils.

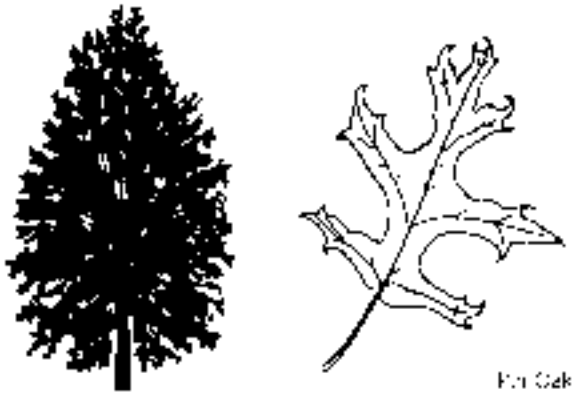
The wood is made into lumber for flooring, furniture, tight cooperage, millwork, timbers, handles, boxes and crates. Perhaps the largest amounts go into high quality flooring, barrels, kegs, and casks. Because the pores of the heartwood are impervious to liquids, it is prized for use in construction of ships and boats.

Yellow-Poplar (Liriodendron tulipifera) also referred to as Tulip Poplar has very distinctive and easily recognizable leaves. The leaves have four large lobes, with the two outer lobes often flattened into a squarish end. The fruit is a cone-like aggregate 2.5-3 inches long. The yellow-poplar prefers moist sites in coves and ravines with well-drained soils.

Yellow-poplar is used for lumber, veneer, and pulpwood. The lumber is made into interior parts of furniture, boxes, crates, interior finish, siding, musical instruments, and fixtures.

Pin Oak (Quercus palustris) leaves are divided into 5-7 lobes by wide, deep sinuses which are rounded at the bottom. The lobes are toothed and sharply pointed. The acorn is quite round, about 1/2 inch in diameter, with a thin, scaly, saucer-shaped cup. The tree grows to 70-80 feet in height and 3 feet or more in diameter. This species prefers deep, moist, rich soils such as those in bottomlands and the boarders of swamps.

Wood from pin oak takes special handling in drying, as it tends to split and crack. The wood is extremely porous. The hardness and resistance to wear of pin oak, plus its beauty, make it preferred for flooring for residences. When preservative-treated, it is used extensively for crossties, mine timbers, and fence posts.

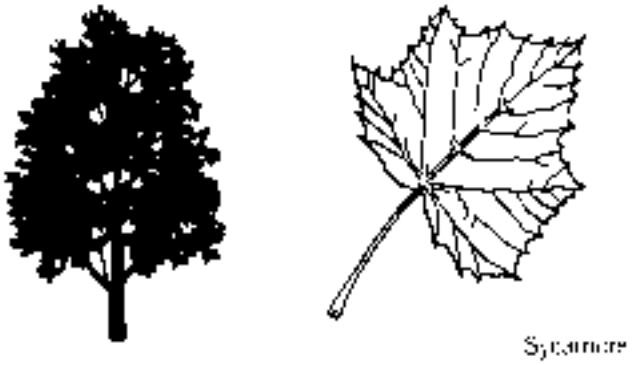


Black Walnut (Juglans nigra) leaves are deciduous, alternate, pinnately compound. The fruit is globular, with a thick yellow-green fibrous husk. The nutmeats are sweet and edible, and are a favorite food for red and gray squirrels. The tree reaches 100 feet in height and 2-3 feet in diameter. Black walnut thrives in the well-drained bottomland and coves of the Appalachians.

Most black walnut goes into furniture of the highest quality. It is also prized for gunstocks and interior finishes.

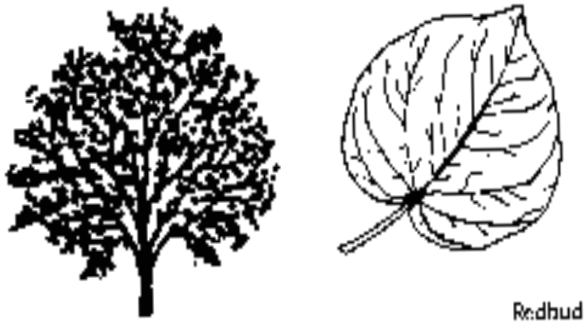
American Sycamore (Platanus occidentalis) is an easily recognized tree because of its multicolored, mottled bark. The fruit is a 1-inch wide, brown ball composed of many nutlests. The tree is fast growing, attaining heights of 100 feet and trunk diameters of 10 feet or more. This tree is usually found along moist stream banks and bottomlands.

Sycamore is used for lumber, veneer, ties, fencing, flooring and butcher blocks. It is used by the food industry for containers since it imparts no taste or color to the contents.



Eastern Redbud (Cercis canadensis) has heart shaped leaves. The fruit is 2 inches long and has flat, bean-like seeds in pods. The trees prefer forest understories and old fields in medium to well-drained soils.

This tree is an attractive ornamental tree. The fruit is good for wildlife and the legume adds nitrogen to the soil and enriches the site.



White Ash (Fraxinus americana) is the largest and most common of the ashes, and the most useful. The leaves are 8-12 inches long with 5-9 oblong leaflets 3-5 inches long. The fruit is 1-2 inches long, yellowish tan and hangs in clusters. The tree prefers moist sites with well-drained soils.

The woods best known use is for baseball bats. It is the standard wood for D-handles for shovels and spades, and for the long handles of forks, hoes, rakes, and shovels.

Common Trees Of Kentucky Cont…

Sweetgum (Liquidambar styraciflua) has easily recognized star-shaped leaves made up of 5 deeply separated pointed lobes. The round, bur-like, hard, woody fruit is 1-1.5 inches in diameter. The tree reaches heights of 120 feet and diameters of 4 feet or more. It prefers rich bottomlands and will not grow well in the understory or where there is severe competition.

Sweetgum wood is used for lumber, veneer, and plywood. The lumber is remanufactured into boxes, baskets, crates, and interior woodwork.

Sugar Maple (Acer saccharum) is one of the largest and most important hardwoods of eastern forests. The leaves have 5 lobes that are separated by rounded, shallow sinuses. Leaves are 4-8 inches long and 3-5 inches wide; with sparse, large pointed teeth on the margins. The fruit, a U-shaped pair of winged seeds, ripens in the fall. The tree grows 75-100 feet in height with a trunk diameter of 3-4 feet. The trees prefer moist, rich sites with well-drained soils.

Maple wood is used principally for lumber, distilled products, veneer, crossties, and pulpwood. About 90 percent of the lumber is remanufactured into such products as flooring, furniture, boxes, crates, handles, and cabinets. It is especially suitable for bowling alleys and dance floors. It is distilled to make acetic acid and wood alcohol.

Eastern White Pine (Pinus strobus) needles are soft bluish-green, flexible, 3-5 inches long, in bundles of 5. Cones are 4-8 inches long, curved, stalked, with scales without prickles. The tree commonly attains 100 feet in height and 4 feet in diameter. This is the largest conifer of eastern forests, is long-lived, and has been known to reach 200 feet or better. The tree is not site specific and grows in moist sandy loams to dry rocky ridges.

The wood is light, straight-grained, easily worked, but not strong. It is used in cabinetwork, interior finishes, matches and lumber. A large part of the diet of red squirrels in the southern Appalachians is made up of the seed of eastern white pine.

Prints And Etchings

Cherokee Leaf Printing

By learning the craft of Cherokee leaf printing, you can bring some of nature's beauty indoors. The idea is to transfer the natural dyes of a leaf to fabric, retaining the design of the original leaf. Beating the leaf chlorophyll directly into the cloth, and then setting it by natural chemical action do this. This technique can be used to decorate any natural fiber cloth surface, such as tablecloths, curtains and wall hangings.

What You'll Need:

- Plain white 100 percent cotton is the best material to use for leaf printing. If you would like to cut cost, unbleached muslin is also suitable and gives a natural, hand-worked look to your project. Fabric should be pre-washed to remove any sizing chemicals that could interfere with the dye transfer,
- A medium-sized, flat headed hammer,
- Some masking tape,
- A flat board as a pounding surface,
- Newspapers and wax paper, and
- Leaves for printing.

Pick leaves for printing that are young and tender. Although many kinds of leaves can be used, marigolds, carrot tops, strawberry leaves, tulip poplar, and the red and white oak are especially suitable.

Getting Started:

Lay several thickness of newspaper on your flat board. Spread your cloth (T-shirt, etc.), right side facing you, on top of the newspaper. Put the leaf or leaves on the cloth in the pattern of your choice. Waxed paper should be placed over the leaves and secured with masking tape around the edges.

Using a flat-headed hammer, pound the chlorophyll out of the leaf until the color transfers to the cloth. Pound evenly to get a good print. If the leaf does not print evenly, crumple up another leaf, dip it in water, and use it to paint the unstained spots.

How To Set The Dyes:

The dyes from the leaves must be set into the fabric to resist fading. The color of the finished print depends on the setting medium you select. For rich reddish-brown hues, the cloth can be soaked in a solution of 1-cup wood ashes to 3-gallons of cold water. After 5-minutes of soaking it should be rinsed in clear water and air-dried away from direct sunlight. To retain the natural green shades of you prints, soak the finished piece in ½ cup salt to 2-gallons of water for ten minutes. Rinse and dry as above.

Future Care:

Wash your completed garment or cloth project in cold water and dry on low or hang up to air dry. Your colors should last for a long time with proper care. Have fun!!

Leaf Etching

This is a simple technique that works well with younger children or large groups, or where you don't want leaves all over the floor.

What You'll Need:

- Clear contact paper with a paper back,
- Scissors,
- Ruler,
- Crayons or pencils,
- A good leaf identification book, and
- Leaves for etching. (Pick leaves that have good veins and shapes)

Getting Started:

Cut the contact paper into a square large enough to cover the leaf. Peel the paper off of the contact paper and lay a leaf onto the sticky side. Place the paper over the leaf and press firmly, especially at the edges. Having this step already completed ahead of time saves time and mess while doing the etchings. Older children could help you.

Doing The Etching:

Have each student/child pick a leaf and using a crayon or pencil lightly rub over the white paper. An image of the leaf will appear. Depending on the age of the participants have them key out their leaf and write it's name on the paper or you can help them figure out which tree their leaf came from. Have fun!!

Using The Dichotomous Key

The key starts at number one. Always read both lines per number to determine in which category the tree fits. Once you have determined the category to which the tree fits, follow to the right margin to determine which number to move to next. If the character you keyed is the final one then the species will be listed to the right. Read descriptions closely and carefully and be sure to look at more than one leaf. One leaf may not be characteristic of the whole species.

Frequently Asked Questions

How do I know if leaves are simple or compound?

The secret is to look at the buds. The buds for next years growth will appear at the base of the leaf stem. Leaflets do not have buds at their base and are therefore part of a compound leaf. A twice-compound leaf, such as the Kentucky coffeetree, is a leaf that splits twice before forming leaflets.

What are leaf margins?

Leaf margins refer to the edge of the leaf. A leaf margin can be smooth or have teeth. It can also be lobed or unlobed. Any combination of these characteristics can also happen.

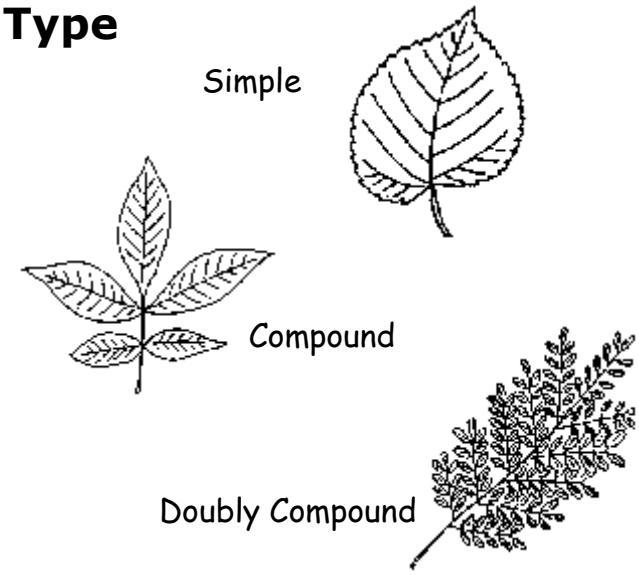
What are venations?

A venation is the pattern of veins in a leaf. All leaves must move the food they manufacture to other areas of the plant and have water moved to the leaves. The pattern of veins in a leaf is often very characteristic of the species and can be a good way to seperate two species.

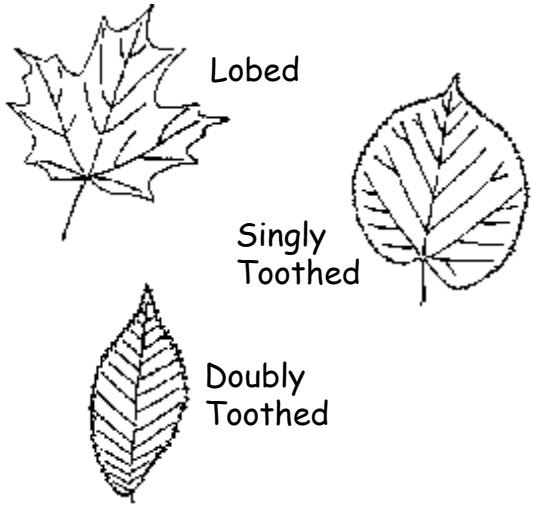
What is leaf arrangement?

Leaf arrangement refers to the branching pattern of trees. There are two types of patterns, opposite and alternate. If the leaves and branches grow from the stem exactly opposite from one another they are said to have an opposite pattern. If the branches and leaves grow in a staggered row, they are said to be alternate.

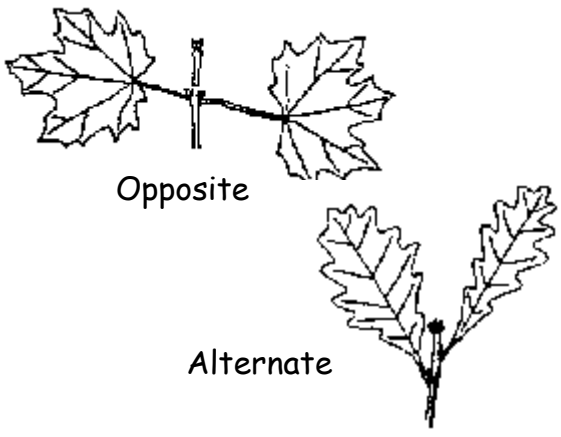
Type



Margin



Branch Placement



Leaf Key

1. Leaves are shaped like needles.....white pine
   Leaves are broad and flat.....go to 2

2. Leaves have opposite arrangement..... .go to 3
   Leaves have alternate arrangement.....go to 4

3. Leaves are simple.....sugar maple
   Leaves are compound.....white ash

4. Leaves are simple.....go to 5
   Leaves are compound.....black walnut

5. Leaves are lobed.....go to 6
   Leaves are not lobed.....redbud

6. Leaves are serrated or toothed.....go to 7
   Leaves are not serrated or toothed.....go to 8

7. Leaf is tulip shaped.....yellow-poplar
   Leaf is not tulip shaped.....white oak

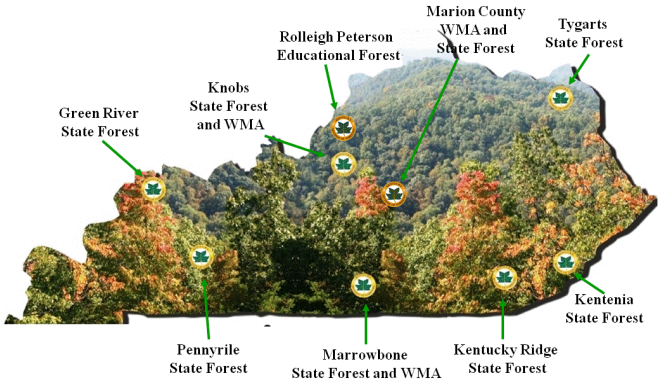
8. Leaf is star-shaped.....sweetgum
   Leaf is not star shaped.....go to 9

9. Leaf has bristle tips.....pin oak
   Leaf is as wide as long..... sycamore

Developed by Laurie Thomas, Park Naturalist, McConnell Sprngs, LFUCG

Our State Forests

Kentucky's State Forests



State Forests Are For Everyone!

Some of the best places to identify leaves is your state forests. Kentucky's nine state forests are shown on this map. Unscramble the names and tell whice state forest is:

1. Which state forest is managed for sustainable timber production, open to public hunting, fishing, primitive camping, hiking and picnicking and contains Pine Mountain State Park on Pine Mountain? **TNEKKCUY IDREG**

2. Which state forest is open to public hunting, primitive camping, hiking and adjoins Carter Cave State Resort Park? **GRTTYAS**

3. Which state forest allows hunting and hiking and is the oldest state-owned forest? **INEKNETA**

4. Which state forest is th elargest with a total of 14, 654 acres of forest? **IELNPNER**

5. Which state forest is reestablishing as much bottomland hardwood forest as possible, both for research purposes and to maintain wildlife habitat, and to protect the unique habitat of the cypress swamp located near the river? **NGEER VIRRE**

Creating A Habitat

A creature's habitat is a place where individuals of that species or type can usually be found. It contains all the components the organism needs to survive.

At the most basic level, all wildlife require food, water, shelter from predators and the elements, and safe places to raise their young. Consider asking your students to brainstorm and create a list of things humans need to survive. Then try creating a list for other animals and one for plants. **How do the lists compare?**

If you want to invite more wildlife into your school grounds, you should first discover who's already in the neighborhood and what types of features and conditions exist, then decide who you'd like to attract and learn about the habitat requirements of your intended guests.

Lay the groundwork

Invite students to explore the schoolyard and keep a record of their observations. **What types of life forms can you find? What part of the habitat is each found in (under rocks, on plant leaves, in water)? Do some organisms seem to prefer certain conditions (sun, shade, moist areas)? How are they interacting with other living and nonliving parts of their environment? Do animals seem to be using certain types of plants for food? Shelter?**

You may also want to explore nearby lots, parks, and so on, to get an idea of the wildlife in the area that might be enticed to the schoolyard. Invite students to compare the amount of wildlife in an area like a lawn, with few plant species, to what's in a meadow or even a weedy lot. (They should discover that as the diversity of plants increases so does the amount and diversity of wildlife.)

Assess site conditions

Challenge students to evaluate the characteristics of your own site. **Which habitat elements already exist? A water source? Key plants? What are the sun and shade patterns?** Students can use a grid system to create a scaled map of the area that they can use as a template for planning.

Develop a plan

Once you have a sense of what conditions you have and the types of wildlife that might be in your area, devise your own plan. Have students research the needs of wildlife they hope to attract, then list the plants and other features they'll need to include. Remind them to consider a creature's entire life cycle; butterflies, for instance, have different food requirements as caterpillars than as adults. **Which habitat elements will you need to modify or introduce? Then consider the physical changes you might make (e.g., bird-feeding stations and brush piles) and types of plantings (butterfly garden or prairie restoration). How will you enhance your area for human visitors (building an interpretive trail or making a viewing guide to your wildlife habitat)?**

In general, the greater variety of plant types you have (trees, shrubs, perennials, annuals, and so on), the more wildlife you'll attract. Native plants are better adapted to local conditions and to wildlife needs. You'll also tend to find more wildlife in transitional areas where two types of habitats meet, such as the edge of a woods and a meadow. Think about ways to provide water for wildlife. This can take the form of mud puddles, bird baths, or ponds. Never use pesticides or herbicides in a garden or site meant to attract, feed, and shelter wildlife.

Grants And Resources

Schoolyard Habitat Grants

National Wildlife Federation
Information and resources for creating and registering a schoolyard habitat. Award grants of up to $250 for schoolyard habitat projects. Sponsors International Schoolyard Day, conferences, workshops, and an online forum. Web site: www.nwf.org/habitats/schoolyard/

Kids Gardening
The National Gardening Association awards 400 Youth Garden Grants to schools, neighborhood groups, community centers, camps, clubs, treatment facilities, and intergenerational programs throughout the United States. Web site: www.kidsgardening.com/grants.asp

Environmental Education Grants

Environmental Protection Agency
This Web site lists grant programs that support environmental education projects, and also has a useful grant-writing tutorial. Grants under $25,000 are administered through regional offices.
Web site: www.epa.gov/enviroed/grants.html

GreenWorks Grants
GreenWorks is PLT's community action and service learning program which encourages students to build local partnerships to develop and implement an environmental action project such as graffiti paint-overs, tree plantings, stream clean-ups, and recycling projects.
Web site: www.plt.org/applyforagrant

Other Sites Of Interest

Educational In Nature
Georgia Pacific's Educational In Nature site offers lesson plans, activities, and downloadable kids pages. Web site: www.gp.com/educationalinnature/

EE in Kentucky
"EEinkentucky" is a one stop resource for Kentuckians who want a straightforward way to find environmental educational opportunities in the state. This Web site allows you to locate organizations and events across the Commonwealth - http://eeinkentucky.org/

KET Electronic Field Trip to the Forest
A simple hike through the woods turns into a learning for three teenagers in KET's Electronic Field Trip to the Forest. When a forester from the Kentucky Division of Forestry joins their outing, the young hikers begin an exploration of the history of Kentucky's forests - http://www.ket.org/trips/forest/index.htm

Environmental Exchange Box
Preparing an environmental exchange box will give your students a chance to learn more about their own region and the things that are special about it. Web site: www.plt.org/html/curriculum/

National Arbor Day Foundation
The National Arbor Day Foundation provides more than 8 million trees for planting throughout America each year.
Web site: www.arborday.com

Backyard Conservation
Backyard Conservation shows you how conservation practices that are used on agricultural land across the country to conserve and improve natural resources can be adapted for use on the land around your home. These practices help the environment and can make your yard more attractive and enjoyable. Web site: www.nrcs.usda.gov/wps/

Tree Gifts

Gifts From The Trees

DIRECTIONS: Each word in column 1 combines with a word in column 2 to make a gift trees give us. Unscramble the words in column 2 and draw a line to their match in column 1. Then, copy the letters in numerical order in the spaces at the bottom from left to right to answer the riddle: WHAT ARE TREES?

COLUMN 1	COLUMN 2	
FILTER	ROSIONE	__ __ __ __ __ __ __ (11 7 … 17)
HIDE	USTD	__ __ __ __ (16 … 1)
PREVENT	WIEVS	__ __ __ __ __ (8)
ANIMALS	EISNO	__ __ __ __ __ (3)
BUFFER	SEOHM	__ __ __ __ __ (13 4)
URBAN	DUNOSS	__ __ __ __ __ __ (5 18 15 19)
RELAXING	IRA	__ __ __ (6 2)
COOL	STEER	__ __ __ __ __ (9 10 14 12)

__ __ __ __ __ __ __ __ "__ __ __ __" __ __ __ __ __ __ __!
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

Tasty Trees Word Scramble

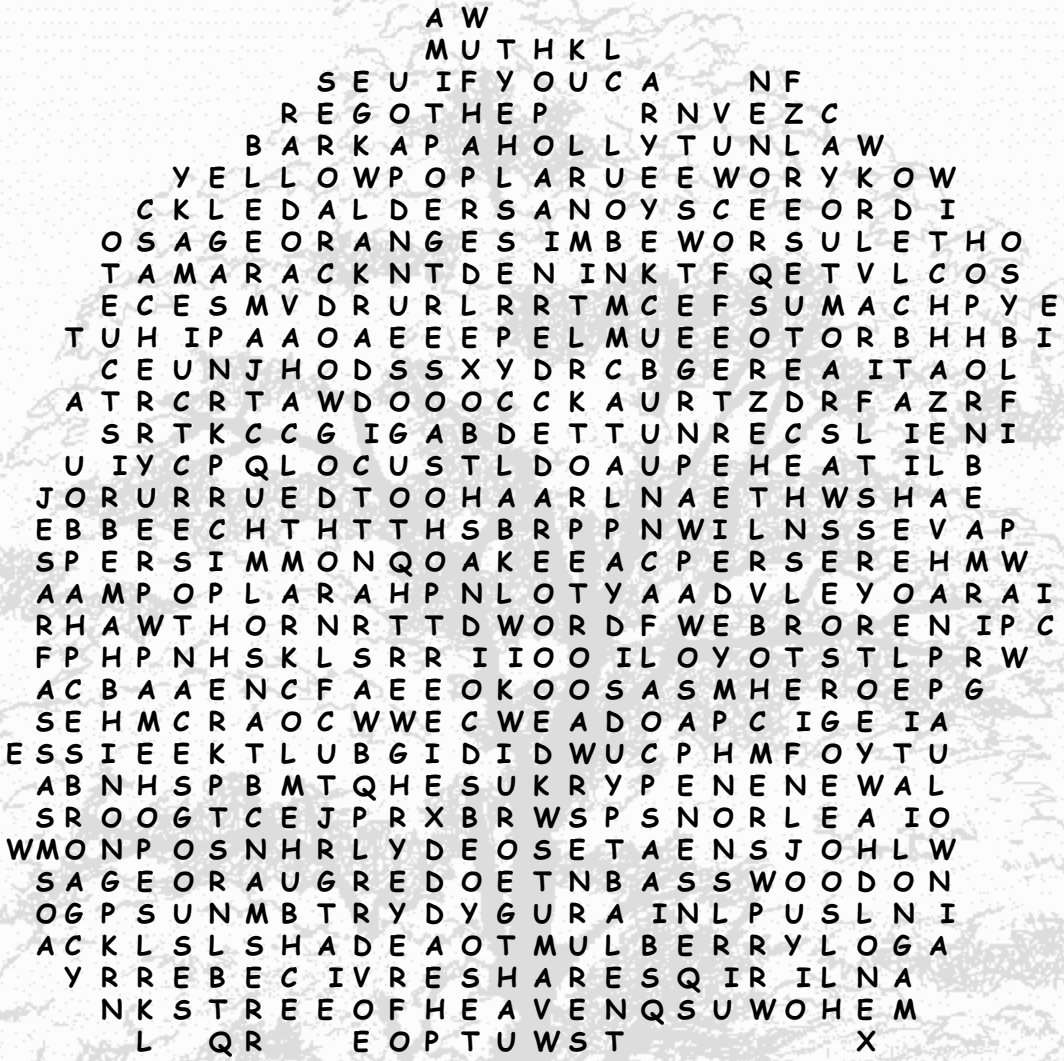
Unscramble these trees that provide us with food

ONMGA
ANABNA
YRHERC
PEALP
ERMYLRUB
WWPAAP
RPEA
MPUL
SNMPRIMEO
EONTAGL
GRENOA

RCHYOIK
UOCCTON
HTTNCUSE
NELMO
NNCEIRETA
PERRTAGIFU
CPAHE
PBREPAACL
NPCEA
ELMI
RIIULGFTU

Others To Challenge You:
QTMAKUU
NEEGNTRAI
UTWANL
EHSCWA

Hidden Trees



ASH
BALDCYPRESS
BASSWOOD
BEECH
BIRCH
(BLACK) CHERRY
(BLACK) GUM
(BLACK) WILLOW
BOXELDER
BUCKEYE
CATALPA
COTTONWOOD
CHESTNUT
DOGWOOD
ELM
HACKBERRY
HAWTHORN
HEMLOCK
HICKORY
HOLLY
HOPHORNBEAM
HORSE CHESTNUT
(KY) COFFEETREE
LOCUST
MAGNOLIA
MAPLE
MULBERRY
OAK
OSAGE ORANGE
PERSIMMON
PAULOWNIA
PAWPAW
PINE
REDBUD
REDCEDAR
SASSAFRAS
SERVICEBERRY
SOURWOOD
SUMAC
SWEETGUM
SYCAMORE
TREE-OF-HEAVEN
WALNUT
WITCH-HAZEL
YELLOW-POPLAR

Rappin' About Trees

This rap has two parts, one is printed in italics and the other in normal type. Both parts join on the chorus. **A wordless rap-beat playing in the background will make it easier for the rappers to move and talk to a beat. Try this in your classroom with two puppets or two students.**

Let us tell you a story about a wonderful tree
that grew for years as happy as could be.
Had plenty of rain for it to drink
and lots of room for its roots to sink.
It had soil that was rich and sweet
full of nutrients for it to eat.
Plenty of space to stretch and grow
nothin' to hurt it high or low.
It grew taller and wider and stronger too *and*
used carbon dioxide out of the blue.
The leaves in the canopy waved in the wind.
The roots pushed outward and anchored it in.
The trunk grew thicker and rounder too *and the*
branches stronger and longer grew.

CHORUS

It's the millennium now and it's time to act!
Raise your hand and make a pact!
Conserve, be smart, and plant a tree
Make the world better for you and me!

The tree gathered boarders as time went by,
birds and bugs and a butterfly
lived their lives among the leaves
sharing their space with a hive of bees.
A raccoon or two set up house,
a squirrel found a spot and so *did a mouse!*
A worm and an ant carved a place underground
where they lived in peace without being found
by birds and bugs that liked to dine
on worms and ants that taste so fine—fried!
A family of beetles burrowed into the bark where
they were safe and the world was dark.
Until the woodpeckers found them and went to
work and pulled them out with a jerk, jerk, jerk...
(I hate when that happens!)

CHORUS

This tree's been around for a decade or three
and provides great shade for you and me.
We can build a tree house or tie a swing
up in the branches and not hurt a thing!

We can have a picnic and get out of the heat
when we need to rest *and are ready to eat!*
When a summer storm becomes a threat
we can hide under the branches and not get wet!
The roots help keep the soil in place
on the ground and out of our face.
The sounds of the highway get lost in its leaves
and even a wind will change to a breeze
(when it blows through).

CHORUS

This old tree has been a really great friend
but I know someday that it won't bend
it'll fall to the earth and spend its days
giving to the soil in a million ways.
As the old log rots and turns to ground
seeds will sprout and grow around!
In fertile soil the log will make
new growth will come and nature take
everything she needs to redesign
this rotting log into something fine!
There's a job for you within this rap
something you *can do to fill the gap*
between the rotting log and the healthy tree
there's a wonderful op-por-tun-ity
to provide the future with what you've had
figure it out and you'll be glad!
Knowing how important this is to me
you can do one thing –plant a tree!-
or two-or three!

CHORUS

Game Answers

Gifts From The Trees

COLUMN 1	COLUMN 2
FILTER	ROSIONE
HIDE	USTD
PREVENT	WIEVS
ANIMALS	EISNO
BUFFER	SEOHM
URBAN	DUNOSS
RELAXING	IRA
COOL	STEER

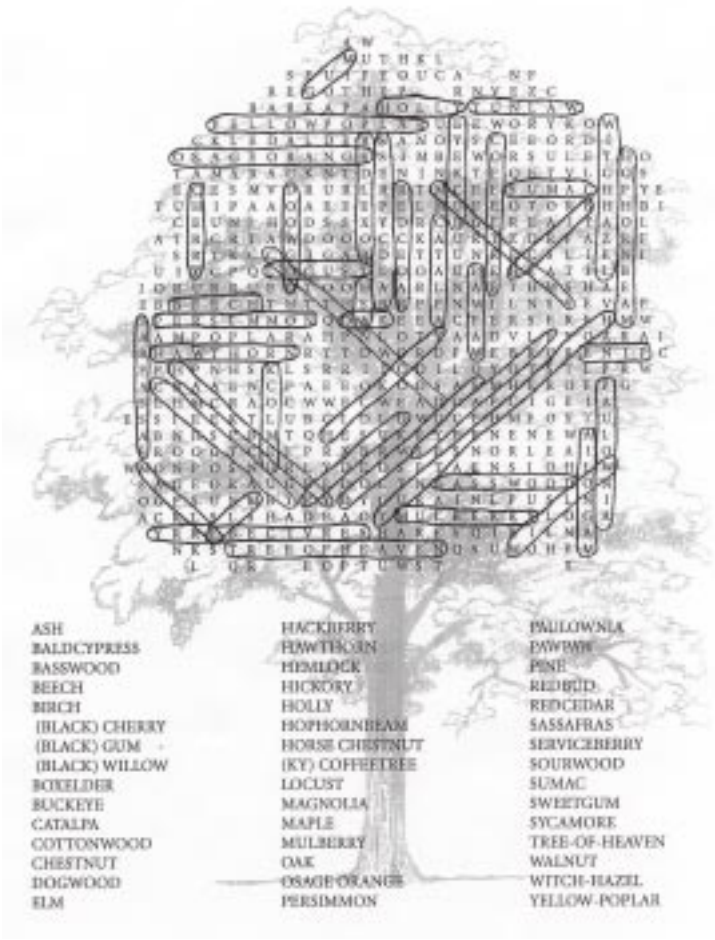
E R O S I O N
11 7 17
D U S T
16 1
V I E W S
8
N O I S E
3
H O M E S
13 4
S O_U_N D S
5 18 15 19
A _I _R
6 2
T _R _E _E _S
9 10 14 12

T _R _E _E _S _A _R _E "_T _R _E _E" _M _E _N _D _O _U _S!
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

Tasty Trees Word Scramble

ONMGA-mango	RCHYOIK-hickory
ANABNA-banana	UOCCTON-coconut
YRHERC-cherry	HTTNCUSE-chestnut
PEALP-apple	NELMO-lemon
ERMYLRUB-mulberry	NNCEIRETA-nectarine
WWPAAP-pawpaw	PERRTAGIFU-grapefruit
RPEA-pear	CPAHE-peach
MPUL-plum	PBREPAACL-crabapple
SNMPRIMEO-persimmon	NPCEA-pecan
EONTAGL-tangelo	ELMI-lime
GRENOA-orange	RIIULGFTU-ugli fruit
Others To Challenge You:	
NEEGNTRAI-tangerine	QTMAKUU-kumquat
EHSCWA-cashew	UTWANL-walnut

Hidden Trees



State Forests: 1. Kentucky Ridge, 2. Tygarts, 3. Kentenia, 4. Pennyrile, 5. Green River

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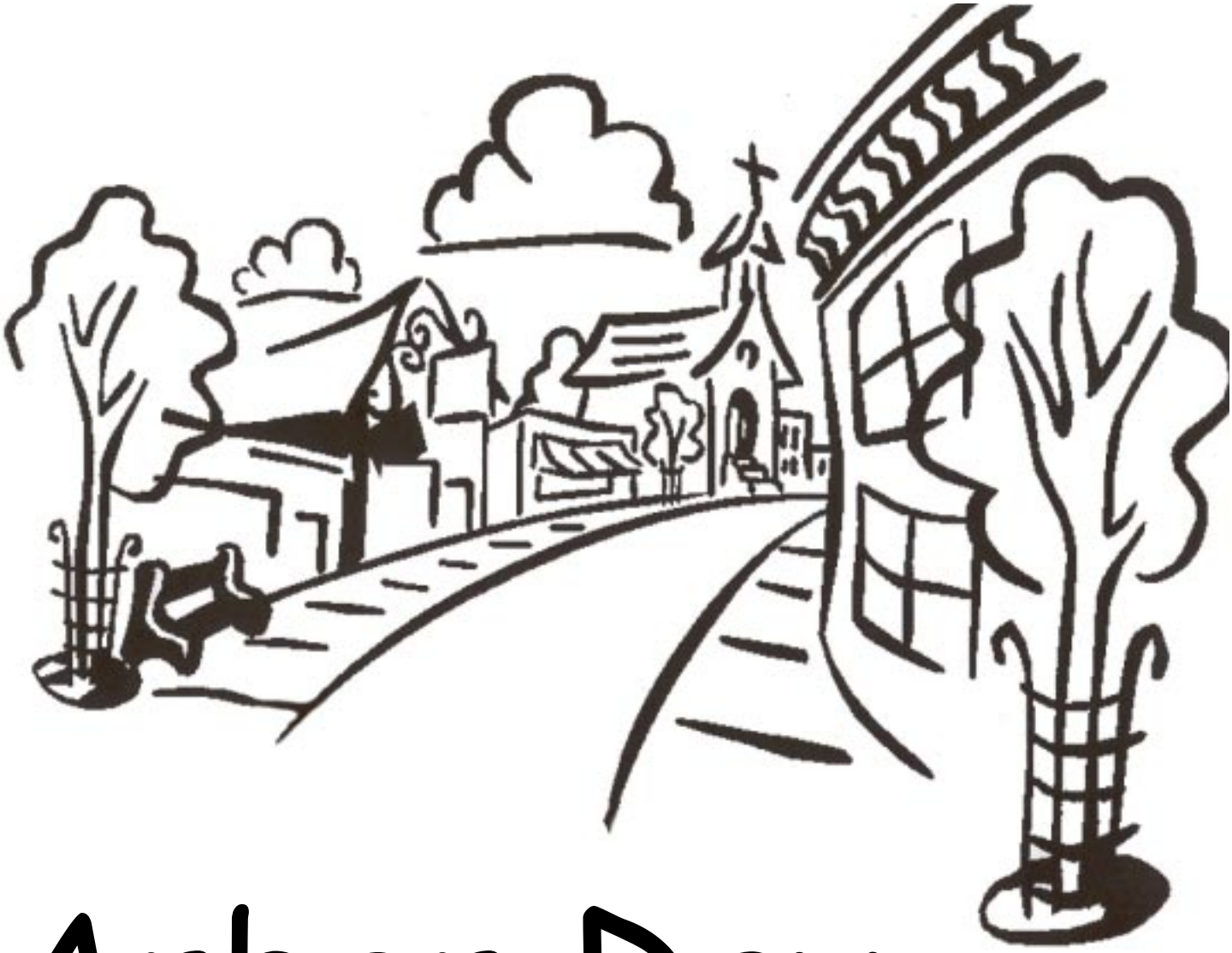

Arbor Day In Kentucky

First Friday in April

KENTUCKY DIVISION OF FORESTRY
100 YEARS AND GROWING
1912-2012