Appendix

Let's Plant A Tree

Background Information

Why do we need to plant trees?

All it takes is to look at a tree, or to sit under one on a hot summer day, to appreciate this unique plant. A tree is a beautiful living thing. Our peace of mind, our emotions, and our spirits are affected by what our eyes see. The pleasing look of trees makes them one of the most important, beautiful things in our environment.

But we receive many benefits from trees other than those we see. Trees make important contributions to the ecology and economy of our wilderness, rural, and urban areas.

Forests protect the water supply by preventing run-off and erosion. They also purify the air, provide habitat for wildlife, and occupy places where we can go to "get away from it all" by camping, hiking, and skiing.

Commercial forests in Utah produce mostly lumber, speciality products, and firewood. Most commercial forests are in Utah's mountains which receive most of the annual precipitation.

In places where proper ground cover is lacking in Utah's mountains, critical watershed's are in danger of floods, landslides, and erosion every year. The planting of trees in the mountains, and in field windbreaks and farmstead shelterbelts in rural Utah helps prevent costly wind and water erosion in our state. Windbreaks and shelterbelts also reduce the effects of summer and winter winds on humans and animals; cut down on heating costs in homes; protect feedlots, gardens, orchards, and crops; and beautify homes and farmsteads.

Trees make streets and residential areas in Utah's cities and towns more beautiful and valuable. But they do much more than make our urban areas pleasant places to live. Trees are one of nature's most efficient dust traps. Their leafy surfaces keep a steady flow of dust and dirt from saturating the air we breathe. They relieve sound pollution by breaking up and reducing sound waves; tests have shown that proper landscaping can reduce traffic noise, too. Trees keep cooling costs down in summer, and so conserve precious energy resources. They absorb carbon dioxide from the atmosphere and give off oxygen.

In a single day, each of us inhales 35 pounds of oxygen - and we get it all from green plants on land and vegetation in the sea. Planting trees is not only a matter of comfort, beauty, and economy. They help us survive!

How we plant a tree.

Scope out a site in your yard. Check with your parents first. (If you are unable to plant in your yard, contact your city offices to see about planting on the boulevard or at a local park. Other possibilities might be your church, school, or parents' office. In any case, be sure to get approval from the person in charge.)

Call your local utility company to get help from an expert to locate buried electric, gas, or other utility lines.

While waiting for the utility locater to do his/her job, try to select a tree that will grow well on the site you've selected. Consider the soil type. Is it sandy and well drained? Or heavy clay, and so perhaps wet and possibly compacted? Be sure to choose a tree that will grow in the soils of your site. For help, check with your local nursery or garden center, city forester, county extension agent or Soil Conservation District technician.

Where can you get trees?

There are many possibilities! Your local nursery or garden center will have both large and small trees. Make sure the trees are acclimated to your local area in Utah.

Low cost seedlings are available from the Utah Division of Forestry, Fire and State Lands, Lone Peak Conservation Center in Draper. Local Area Managers at six different locations throughout Utah may assist you in making seedling selections and provide you with free tree planting advice. For ordering information write or call:

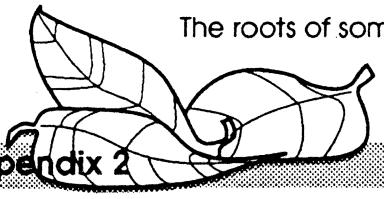
Lone Peak Conservation Center
271 West Bitterbrush Lane
Draper, UT 84020-9599
Phone: (801) 571-0900 FAX: (801) 571-0468

Tree planting programs are available that may help you, too. Contact either the Utah State Forester at (801) 538-5555 or TreeUtah at (801) 364-2122 for more information. Several cost-share programs are available to purchase trees for a variety of uses on school and other public lands. **TreeUtah**'s a non-profit corporation to help plant trees:

TreeUtah
364 E Broadway St
Salt Lake City, UT 84111
(801) 364-2122 FAX: (801) 359-2062

When choosing and planting a tree, remember there are a number of different growing regions in Utah. (Ask your City Forester, local nurseryman, District Forester or Soil Conservation District office about species of trees best suited for your area.) Some species of trees do better in one region than another. Before choosing a tree, find out what kinds of trees do well in your part of the state, and also at your chosen planting site.

The root systems of both seedlings and saplings must be protected before the trees are planted. If the seedlings are bare root, they must be kept in water, and not exposed to wind and warm temperatures for more than 15 seconds before they are planted, or the roots will be damaged.



The roots of some saplings are already protected in containers or large clumps of dirt that are surrounded by burlap. Some saplings are purchased bare root, however. All young trees, especially the bare root trees, must be protected from extreme hot and cold. Their roots must not be allowed to dry out.

It's important to plant your trees properly. The Arbor Day kids show proper planting techniques on page 3 of this section.

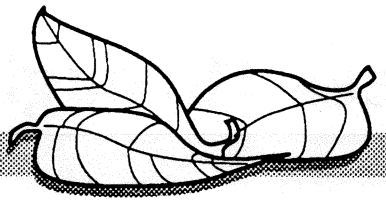
Trees are living things that need your care and protection. They need to be mulched and watered regularly after planting, too.

Resource

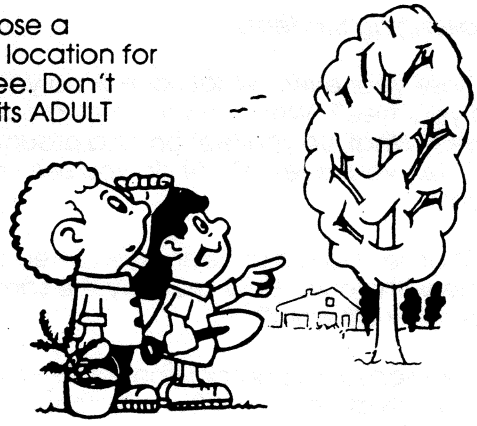
The Utah Community Forest Council, another local non-profit corporation, has available several references on trees at cost. To obtain a free copy of their catalog of educational materials, contact:

Executive Secretary
Utah Community Forest Council
P O Box 961
Salt Lake City, UT 84110-0961
(801) 538-5505 FAX: (801) 533-4111

How To Plant A Tree



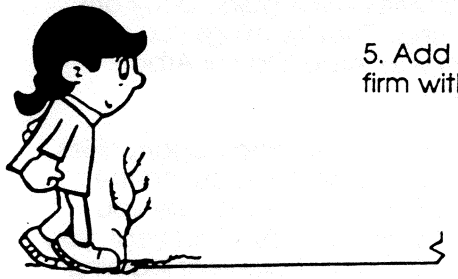
1. Choose a proper location for your tree. Don't forget its ADULT size.



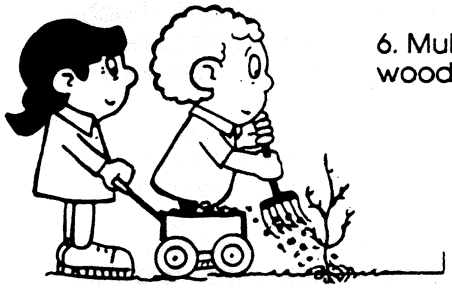
2. Keep your roots moist at all times. Dry roots die.

3. Dig a hole large enough to spread the roots apart.

4. Place the tree in the hole at the proper depth. (See "How Deep" illustration.) Gently add loose soil.

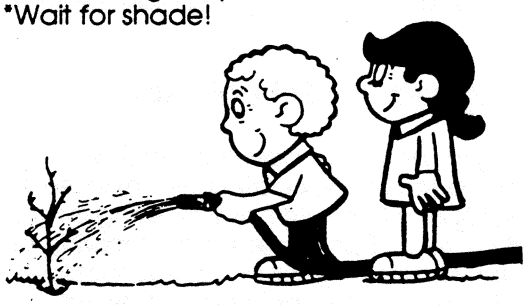


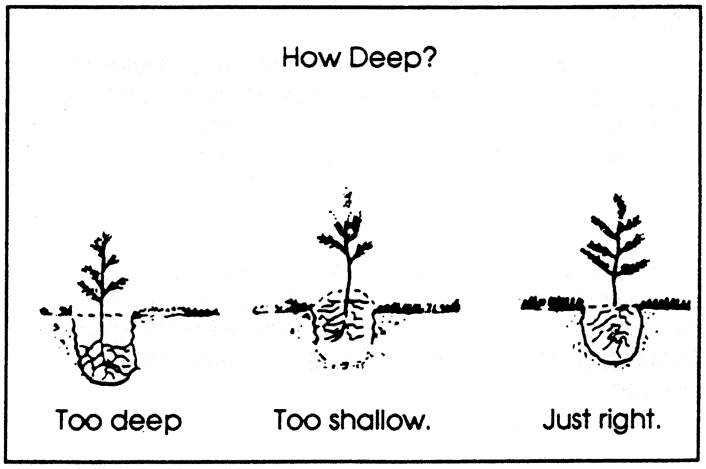
5. Add more soil and firm with foot.



6. Mulch with wood chips.

7. Water regularly.
*Wait for shade!





*What care besides watering will your tree need in the months and years to come? (Protection from damage-people, animals, machines like lawnmowers, wind, disease, smothering by grass and groundcover, etc.) How will the tree get this protection?

Trees Throughout the Seasons

Most of the activities in this guide book are geared toward spring. They're things you can do in connection with your Arbor Day or Arbor Month celebrations.

Trees offer fascinating learning opportunities all year long, however. Don't miss out on the other seasons! The following pages take you "through the year" with trees. Another year, you may want to make trees a whole-year learning adventure. A suggested on-going activity is to have students "adopt" trees that they can identify and observe through all the seasons. Each student creates a scrapbook about his or her tree and how it changes through the seasons.

If individual student scrapbooks don't fit easily into your school program, scan and choose other activities as each season arrives. Some activities are interchangeable from season to season. Your students will develop new interests in trees along with better scientific observation skills. You'll probably discover a lot of new things about those intriguing giant plants yourself!

Trees Throughout The School Year

1. Starting in the fall, encourage each student to make a scrapbook called "My Adopted Tree." The scrapbook should have a strong cover so it will last all year. Each time a new drawing or project is completed, it goes into the scrapbook. Display the books for all to enjoy during Arbor Month. Students bring them home at the end of the year.

2. Once each season, each student draws a detailed picture of his or her tree, including all changes and at least six objects found in its environment (flowers, birds, animals, rocks, snow, seeds, grass, etc.).

3. Ask: What animals or insects can be seen near or on your tree during each season? Look in crevices of the bark, on the leaves, along the bottom of the trunk, and on branches and twigs. Make a picture list of the things you see each season.

Challenging Students:

1. Close your eyes. What sounds do you hear around your tree? What do you smell around your tree? What do you feel on and around your tree? Open your eyes. What do you see around your tree?

2. Choose a dead or nearly dead tree to compare with yours. How are they the same? How are they different?

3. Take seasonal photographs of three or four different kinds of trees. Put them in school-year order and compare them at the end of the school year. Make a bulletin board display of your photographs.

4. How has your tree changed? Be sure to ask this question each season.

Autumn Questions And Activities:

1. Ask each child to "adopt" a tree to observe and learn about all year long.

2. Take a leaf from your tree back to the classroom. Examine it with a magnifying glass. What do you see? Iron it between two pieces of wax paper and place it in your scrapbook.

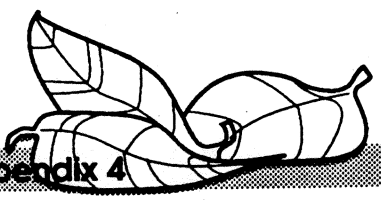
3. Are there holes in some of the leaves on your tree? Why? What has been eating them?

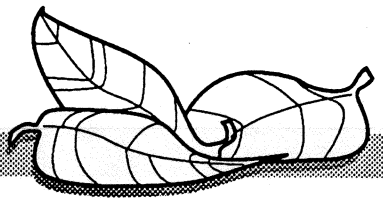
4. What is inside leaves to make them green? (Chlorophyll).

5. Why do leaves change color in fall? (The chlorophyll disappears from the leaf as the days become shorter. The yellow, orange, red, and brown pigments that are also in the leaf now show through.)

6. Why do leaves fall off the trees in autumn? (When the leaves are not producing food, they dry up and lose their hold on the branches. The wind blows them off.)

7. How much time has passed between the first color changes in the leaves of your tree and the time the tree is left bare?





8. Will a green leaf change color if it is placed in a cold place? Put a green leaf in a plastic bag and place it in a refrigerator. Watch the color changes for a few days.

9. What will happen to a green leaf when we boil it? Boil a green leaf for five to ten minutes. (Use hot burners only with adult supervision.) The water goes through a series of color changes. Collect several tablespoons of water as boiling proceeds. Include a sample of clear water. Keep the samples in order. Compare and discuss the changes. Remove the leaf from the water. What happens to the color?

10. How do the seeds from your tree differ from the seeds on other trees? How are they alike?

11. What is inside a seed from your tree? Cut it in half and look at it with a magnifying glass.

12. How do seeds from trees travel?

13. How did your tree begin growing?

14. What protects the buds during fall and winter?

15. Does your tree have any injuries? Who or what might have made them? (If there is a well-formed scar or if the injury is painted black, the wound is probably the result of planned pruning.)

16. Can you find holes that might have been made by woodpeckers?

17. Are there any cocoons on your tree?

18. What happens to a tree when it dies? (It rots or decays and becomes part of the soil again. This is good since it adds food to the soil.)

19. Is there "pollution" around your tree? Which litter is nature-made and which is human-made? Dispose of all human-made litter.

20. What geometric shapes do you see on or near your tree?

Winter Questions And Activities:

1. If they haven't already done so, ask each child to "adopt" a tree to observe and learn about all year long.

2. When does a tree stop growing? (Trees "sleep" or "rest" during the winter but never really stop growing until they die.)

3. What are your tree's food or water needs during the winter? (Compare this to the hibernation of bears.)

4. Are the needles of pine trees leaves? (Yes.)

5. Do evergreens ever lose their needles? (Yes. When new ones grow, the old ones fall off, but never all at once.)

6. How do evergreen needles stay alive in the winter? Look at some through a magnifying glass. (There is a covering of thick wax that keeps them from losing water. They do not dry out and die in the winter.)

7. Will evergreen branches change color if they are brought inside? Clip a branch from a spruce or pine tree and bring it to school. Put the branch in a sugar-water solution such as is used for Christmas trees. Watch the changes for several days.

8. Why is the bark of most trees rough and cracked? (The bark is not elastic enough to stretch as the tree grows.)

9. Why do trees have bark? (To protect the insides, like our skin.)

10. Make bark rubbings. Place a piece of paper over the bark and rub the side of a crayon firmly against the paper. Compare your rubbing with other rubbings. Place it in your scrapbook.

11. Measure around the trunk of your tree with a string or a tape measure. Compare your tree with others.

12. How can you tell the age of a tree? (Find a stump or a log and count the age rings in it.)

13. How old is *your* tree? Borrow an increment borer from a forester to take small cores from the trees. Count the rings.

14. How thick is the bark of your tree?

15. Will some wood from your tree float? Which of your group's trees are made of the

heaviest wood? Which of your trees are made of the lightest wood? (Use the core taken with the borer or a small twig from each tree as "floating" samples.)

16. Do the branches show signs of where the leaves used to be? (Look for "leaf scars" with a magnifying glass.)

17. What made the tracks in the snow around your tree?

Spring Questions And Activities:

1. If they haven't already done so, invite each child to "adopt" a tree to observe and learn about all year long.

2. What evidence do you see of your tree "waking up"?

3. Cut a twig from your tree in the early spring. Bring it to the classroom and put it in water. Watch the bud scales open and the leaves unfold. Keep a record of when the twigs were put in the water, when the leaves appeared, and when the bud scales dropped off.

4. What makes the buds begin to grow? (Day length is increasing, making more "sun time" available. Warming temperatures allow water movement within the tree.)

5. Take a bud from your tree back to class. Examine it with a magnifying glass. Iron it between two pieces of wax paper and put it in your scrapbook.

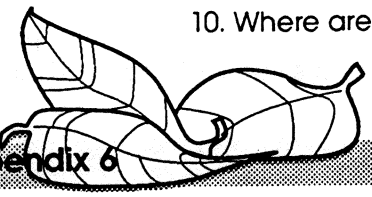
6. What part of the tree makes food? (Leaves make food for the trees. They use air, water, and sunlight.)

7. Why are leaves arranged on the branches the way they are? (So they don't overlap and block sunlight to the ones below.)

8. How does water get to the leaves? (It travels through tube-like cells in the roots, trunk, and branches of the tree.)

9. When do leaves make food? (During photosynthesis.)

10. Where are the roots of your tree?



11. Do some of the roots show above ground?

12. Why do the roots of the trees spread so far in the ground? (To form a strong base and to drink up minerals and moisture from the earth.)

13. Tie a plastic bag around the leaves of a small branch. Look at the branch after a few days. What do you see? (Drops of moisture should appear on the bag. Moisture is released from cells in the leaf. It moderates the air temperature and relative humidity surrounding the leaf. This is called *transpiration*.) Put another plastic bag around a dead twig and compare the two bags.

14. Is the whole tree growing? (Trees grow in length only near their tips, but they grow in diameter at their roots, trunk, and branches.)

15. What kind of food do trees make? Taste the sap from a maple tree. Is it sweet? (Trees make sugar. We use the sugar sap from maple trees to make syrup.)

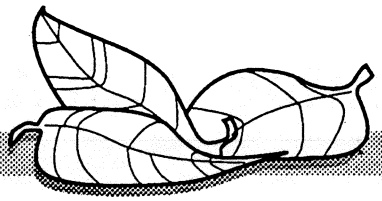
16. What movements does your tree make?

17. Look for a "food chain" near your tree. (Birds eat spiders, spiders eat insects, and insects eat leaves, etc.)

18. Take a picture of each student's tree. Mix up the pictures. Can each student find the picture of his or her own tree?

19. Make a picture list of all the things you think trees are good for. Some possibilities:

Trees give us:
moisture in the air
beauty
shade
flowers, fruit, and nuts
saps and oils
wood pulp for making paper, plastic, and rayon
wood for building
a place to climb
places for birds' nests
food and homes for animals and insects
cork
better soil



Summer Questions And Activities:

1. If they haven't already done so, ask each child to "adopt" a tree to observe and learn about all year.

2. How is your tree like the others? How is it different?

3. Is your tree dead or alive?

4. Are there any nests in your tree? Why is it a good place for a nest? (The branches hold the nest in place. The nest is hidden and out of reach of many enemies.)

5. Are there many plants growing under your tree?

6. Are there more leaves on one side of the tree than on the other? Why? (The tree may get more sun on one side.)

7. Do you see buds near the leaves of your tree? When are buds for the next season's leaves made? (At the same time as leaves and new shoots, during elongation in spring.) When will these buds grow into leaves?

8. Take two leaves from your tree back to class. Examine them with a magnifying glass. Try to match your leaves to the leaf pictures in a tree identification book. What kind of tree is your tree?

9. Iron a leaf from your tree between two pieces of wax paper and place it in your "My Adopted Tree" scrapbook.

10. Make a leaf print with the other leaf from your tree. Place the leaf on newspaper. Brush the leaf with ink or paint. Move the leaf to a clean newspaper. Place a porous paper over the leaf and rub gently to transfer the ink or paint from plant to paper. Let the paint dry, and place the print in the scrapbook.

11. Gather a small piece of bark, a twig, a seed from your tree, and a small plastic bag of soil from under your tree (use a large spoon or trowel). Mount all these on a piece of heavy paper and place them in your scrapbook.

12. Take two temperature readings, one under your tree and the other away from its shade. How much do they differ? (Note: When taking a temperature in the sun, shade the bulb of the thermometer.)

13. Does there seem to be a breeze under your tree when there isn't any away from its shade? Why? (The cool air under the tree is heavy and pushes the warm air away as it sinks to the ground.)

Evaluation - (If A Year-Long Project)

Your evaluation of each student's skills and conceptual developments should be guided by the contents of "My Adopted Tree" scrapbooks, responses to questions, and participation in discussions. The questions listed below are designed to help you make good subjective evaluations. You'll need to adapt the questions to meet your students' age level.

a. How well did the student follow directions?
b. How much direction did the student require?
c. Did the student formulate new questions?
d. Did the student design new experiments to answer these questions?
e. Did the student recognize cause and effect relationships?
f. Could the student state the problem to be solved?
g. Did the student arrive at conclusions by himself or herself?
h. How many characteristics of his or her tree did the student identify?
i. Could the student describe enjoyable and useful ways of using trees?
j. Did the student compare and contrast the characteristics of his or her tree with those of other trees?
k. Could the student predict the outcome of his or her investigations?
l. Could the student predict changes in his or her tree?
m. How well did the student use his or her five senses?

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Planting With A Purpose: A Butterfly Garden

Arbor Month isn't just a time to honor trees. It's for celebrating and planting all kinds of things...shrubs, ground cover, sod, garden plants, flowers, and more.

Are you in the mood for a unique and different reason for planting...one that will be beautiful itself and will attract a host of interesting new wildlife to your yard? Try a butterfly garden!

Planning...and Planting...for Guests!

Wild animals—including insects—have four basic needs for survival: food, water, shelter, and shade. Keep these needs in mind as you plant and all sorts of wild creatures will come to your garden—even though it's primarily a butterfly garden.

Utahns enjoy an incredible variety of beautiful butterflies. Among the most common are the monarch, painted lady, tiger swallowtail, admirals, cabbage butterflies, and several species of blues. Two types of food are necessary for butterflies—vegetation for caterpillars, and nectar sources for adult butterflies.

Many different plants are food sources for various butterfly caterpillars in Utah. The list includes trees (such as birch, aspen, willow), grasses and legumes, milkweed and flowering plants such as those shown on your butterfly garden map. Some of the best butterfly sources are dogbanes, milkweed, thistles, goldenrod, peppermint, and red clover. Butterflies like plants with flat-topped flowering heads. Single-flowered blossoms are better than double-flowered blossoms because nectar is more accessible.

Because their needs are similar to those of butterflies, bees and moths may be attracted to your butterfly garden. Early-spring blossoming plants that are available when they first emerge from their hives are important to bees.

Digging In

1. **First, select a good site** for your garden. Full sun for at least several hours a day is best. Consult with the county extension office, Soil Conservation Service, or local garden center if you need to learn more about the soil or drainage in your planting site. Good knowledge of your soil and site conditions is important because it influences your choices about which plants to use. Your county extension service can perform inexpensive soil tests for you. Once you know the soil types, a garden center or seed source can help you match plants to your soil and sell you the seeds you need. If some of the seeds on the garden map aren't available, substitute with dill, asters, sunflowers, violets, parsley, or petunias. Consider both annuals (plants that live through a single growing season) and biennials/perennials (species that come up two or more years without replanting). Sometimes, you can transplant wild plants into your garden from their natural settings.

2. **Work up your soil** with a roto tiller or by hand until it is smooth and finely textured. Use the size proportions on your garden map, or adapt the map to fit your space.

3. **Plant the seeds**, following directions for each species.

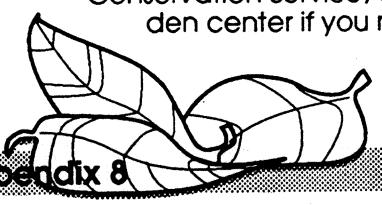
4. **Water daily at first**. After the garden is established, water as necessary to keep moist.

5. **Enjoy!** Watch carefully for wildlife visitors. Keep binoculars and magnifying glasses handy for a close-up view of your guests. You'll want a camera, too; a zoom-lens model is ideal. Your garden will be a neighborhood meeting place for all sorts of fascinating creatures!

Resource

"Landscaping For Wildlife," by Carroll Henderson; Nongame Wildlife Program, Section of Wildlife, Minnesota Department of Natural Resources, 500 Lafayette Road, St. Paul, MN 55155-4007. The information for your butterfly garden was adapted from this source. To order, contact:

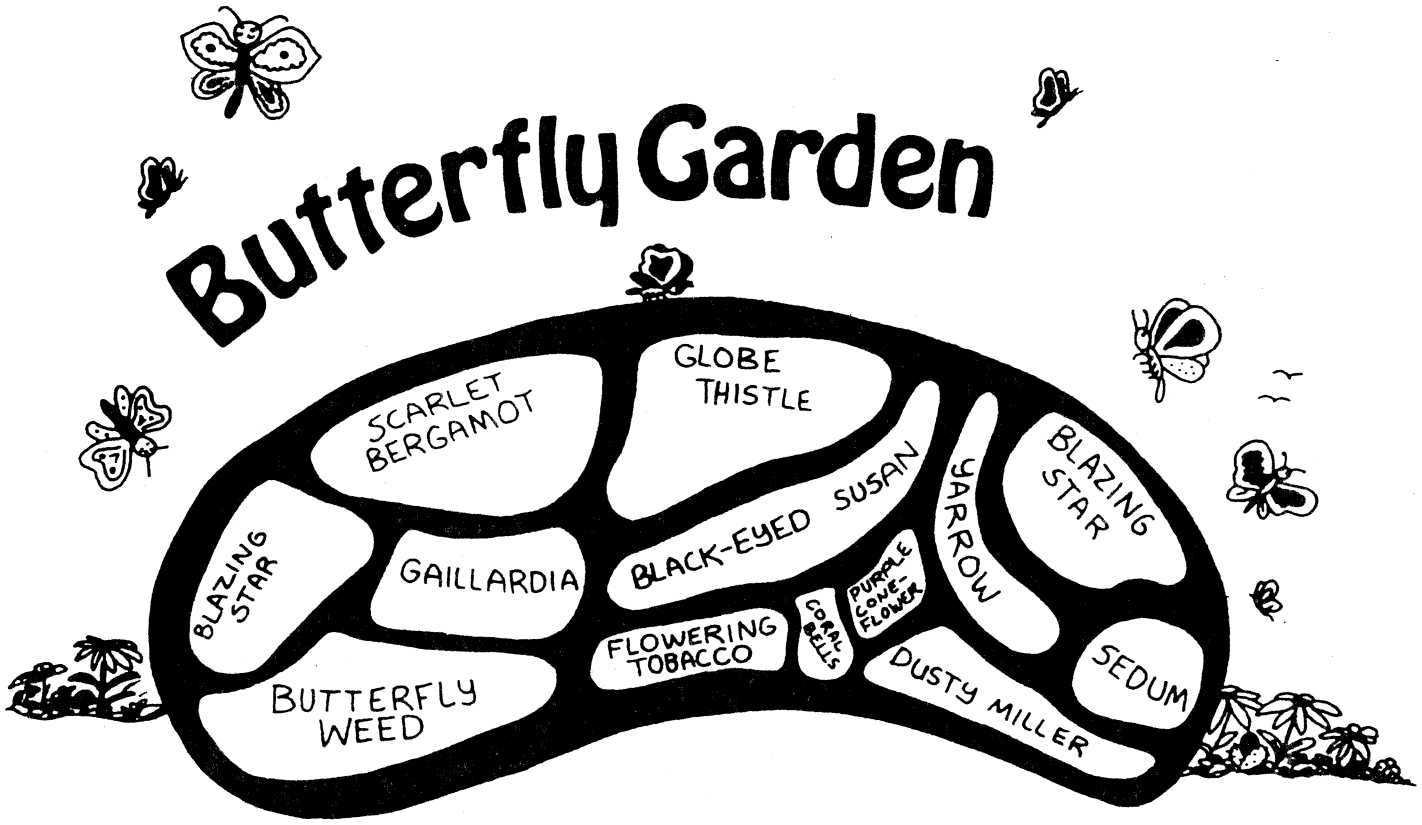
Minnesota's Bookstore
117 University Avenue
St. Paul, MN 55155
(612) 297-3000 or 1-800-652-9747



Butterfly Garden

Butterfly garden designed by Carrol Henderson, Minnesota Department of Natural Resources, Division of Wildlife.

Found in: *"Landscaping for Wildlife."* To order this book, refer to previous page.



From Paper to Plastic

It's hard to imagine what life would be like without trees. We use them to make everything from cardboard to chewing gum. In this activity your students can discover just how big a role trees play in their everyday lives.

First pass out a copy of Appendix page 12 to each student. Tell them that there are more than 40 things in the picture that are made, in some way, from trees. Have them use pencils to circle all the "tree objects" they can find. Afterward, discuss their answers using the following information. Then invite students to color the picture.

Putting Trees To Work

Building with Wood:

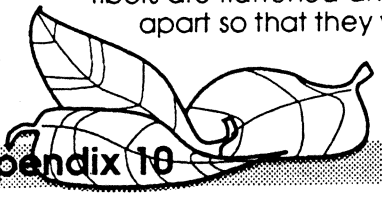
People build a lot of different things with wood. When logs are brought to the sawmill, their bark is removed and they are carefully measured and cut into lumber. Most lumber is used to construct houses and other buildings. Some is used to make athletic equipment, crates, furniture, tool handles, wooden toys, works of art, and many other things.

Wood products in the picture: banister, baseball bat, blocks, bookshelf, broom handle, bulletin board frame, cabinets, chairs, clock, counter, door, fence (see through open door), fruit bowl, molding (on walls), paintbrush handle, picture frames, sofa, stairs, stereo cabinet and speakers, spools for thread, stools, tables, tennis racket, umbrella handle, window frame, wood inside walls.

Making Paper:

Paper is made from *cellulose*, the major component of cell walls in most plants. Most paper in the United States is made with cellulose that comes from trees. To turn a tree into paper, the bark is first stripped off and the trunk is chopped into small pieces, or *chips*. Afterward, the chips are usually cooked with chemicals until they form an oatmeal-like *pulp*.

Next the pulp is washed and the impurities (such as dirt) are filtered out, leaving a pulp of cellulose fibers and water. This "clean" pulp is then sent through a series of machines where the fibers are flattened and broken apart so that they will form a smooth sheet when the paper is dried.



Eventually the pulp is run onto screens and the water is drained off. And finally, the newly made paper is compressed and dried. (Depending upon the chemical process used to make the pulp and the amount of refining the pulp goes through, different kinds of paper can be made, such as coffee filter paper, heavy writing paper, and so on.)

Paper products in the picture: books, candy wrapper, cereal box, gift (wrapping and box), magazines, milk container, newspaper, notes on bulletin board, paper towels, record album covers.

Cellulose Is Everywhere:

Besides being used to make paper, cellulose is one of the ingredients of many other products. For example, it can be mixed with certain chemicals, turned into a thick liquid, and then squeezed through small holes or slits to form fibers. The fibers can be used to make carpeting or conveyor belts, or they might be spun into fabric (rayon and some others) for making clothes or furniture. Different kinds of plastic films, such as cellophane and photographic film, are also made from cellulose.

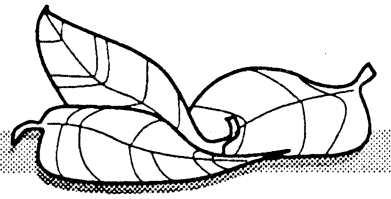
Cellulose is also added to certain substances that are used to make car steering wheels, toothbrush handles, ping-pong balls, and some other plastic products. And depending on how it's processed, cellulose can be used in making explosives, thickeners in shampoo and salad dressing, and wallpaper paste.

Cellulose products in the picture: buttons, comb, curtains, eyeglasses frame, hairbrush handle, luggage, pillows, rug, upholstery on sofa.

About Bark:

Tree bark has lots of different uses. For example, the spongy bark of the cork oak tree, which grows in the Mediterranean countries of Europe and Africa, is stripped off and made into bottle cap liners, bottle stoppers, floats, and even heat shields for space vehicles.

Special chemicals in the bark of some trees also have a lot of different uses. For example, some trees produce *tannin*, which is used to cure leather.



Bark products in the picture: baseball (has a cork center), bulletin board.

Using the Ooze:

Some trees ooze special saps called *gums* and *resins.* Gums and resins can be used to make many things, including cosmetics, mouthwash, paint thinner, perfumes, soap, and coatings for vitamins and other pills. Other trees produce a special juice called latex that can be used to make conveyor belts, hoses, rubber tires, and other rubber products.

Gum, resin, and rubber products in the picture: paint, rubber gloves.

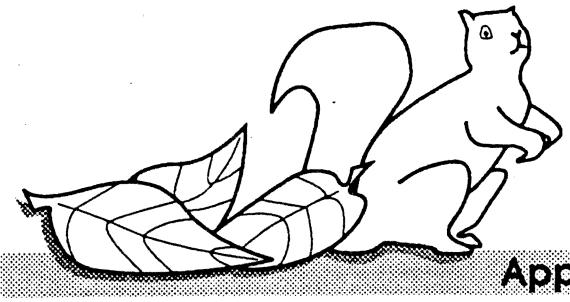
Eating Tree Food:

People eat the fruit, nuts, roots, and bark of many different trees. Most fruit and nuts can be eaten right off of the tree. But other tree "parts" must be cooked, dried, or processed in some way before people can eat them.

Tree foods in the picture: apples, chocolate bar (cocoa tree beans are used to make chocolate), orange.

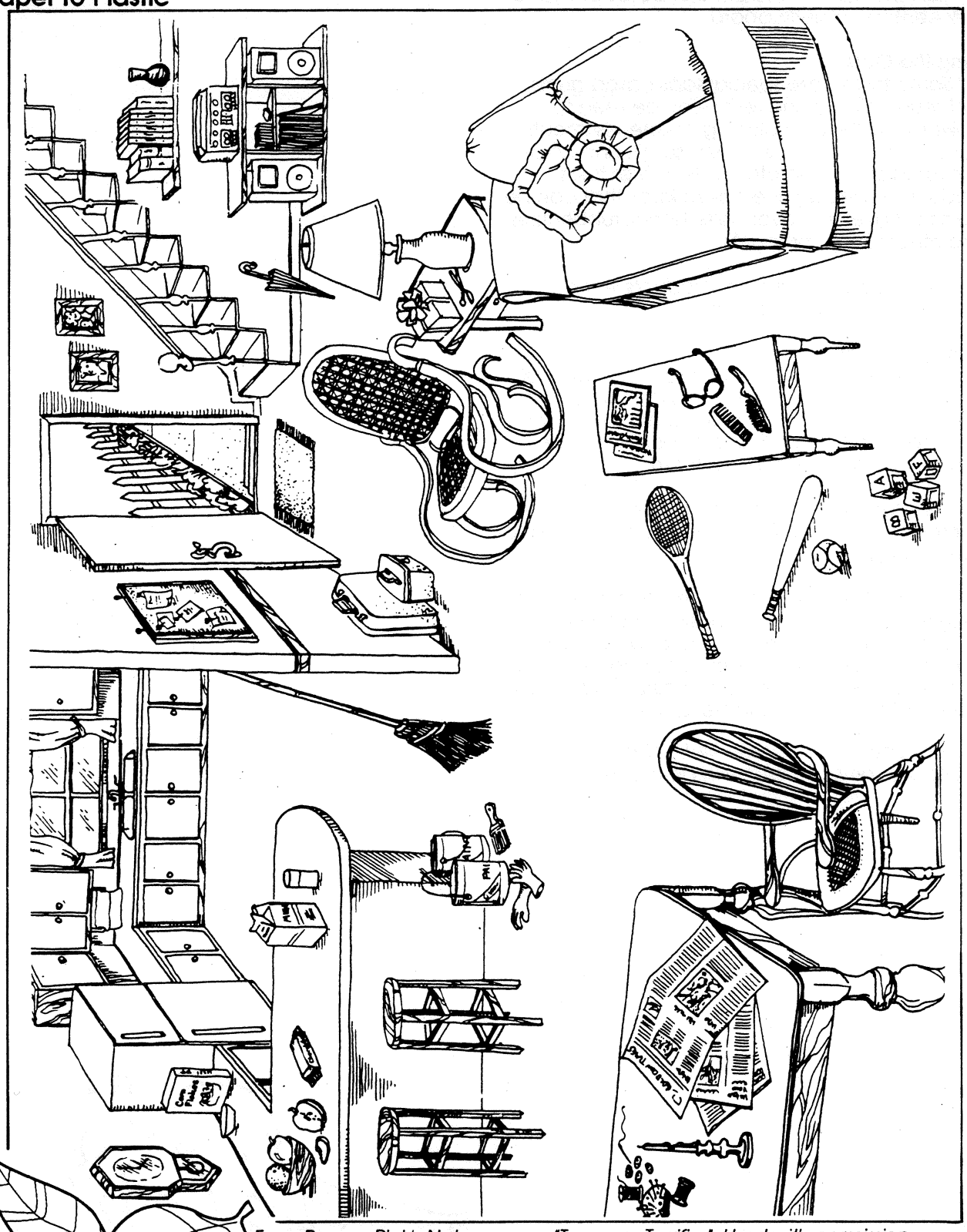
Besides the products we've listed, trees can also be used in making adhesives, asphalt, baby food, cleaners, inks, medicines, and pesticides. And many trees are sources of natural fibers that can be made into clothes, furniture, and stuffing material for cushions and life jackets.

Adapted from Ranger Rick's Naturescope, "Trees are Terrific." Used with permission.



Activity Sheet CopycatPage

From Paper to Plastic



From Ranger Rick's Naturescope, "Trees are Terrific." Used with permission.

Resources

General Resources All Levels

● Utah Division of Forestry, Fire & State Lands

Urban Forestry Program Coordinator
PO Box 145703
Salt Lake City, UT 84114-5703
Phone:(801) 538-5505 FAX: (801) 533-4111

Arbor Day educational materials

● Utah Community Forest Council

PO Box 961
Salt Lake City, UT 84110-0961
Phone:(801) 538-5505 FAX: (801) 533-4111

Tree Education materials

● Project Learning Tree -- "PLT"

Project Learning Tree is an environmental education program developed by the American Forest Foundation to emphasize the forest as part of the human environment. The activity guide that is part of the program provides supplementary teaching activities in various subject areas that are correlated with the Utah State Core Curriculum for grades K-12.

The Utah Division of Forestry, Fire and State Lands is cooperating with Utah Society for Environmental Education in making workshops and teaching materials available to Utah educators, and civic leaders. For more information, call or write:

● Project Learning Tree Coordinator

Utah Society for Environmental Education (USEE)
350 South 400 East Suite #G4
Salt Lake City, UT 84111
(801) 328-1549

A variety of environmental education materials and services are available through USEE

● USDA Forest Service

Information Office
324 25th Street
Ogden, UT 84401
(801) 625-5348

Variety of free education materials

● Project WILD

Division of Wildlife Resources
1594 W. North Temple, Suite 2110
Salt Lake City, UT 84116
(801) 538-4720

Workshops similar to "PLT"

● Project WET

USU/Project WET
5210 Old Main Hill
Logan, UT 84322-5210
(435) 797-2580

● **National Wildlife Federation**

http://www.nwf.org/education/

Order Nature Scape "Trees Are Terrific"
http://nwf.org/bookstore/nwftitles.html

● **Southern Forest Products Association**
P.O. Box 52468
New Orleans, LA 70152

"Our Forest " Booklet

● **National 4-H Council**
7100 Connecticut Avenue
Chevy Chase, MD 20815
(301) 961-2934

"What's a Tree to Me?" Urban tree project booklet for 9 to 14 year olds to learn more about trees.

● **Champion International Corporation**
One Champion Plaza
Stamford, CT 06921
(203) 358-7000

"The Life of the Forest" booklet. Appropriate for grades 4 through 12.

FRIENDS AROUND THE COUNTRY
National Committees & Organizations

National Arbor Day Foundation
100 Arbor Avenue
Nebraska City, NE 68410
http://www.arborday.org/

Society of American Foresters
5400 Grosvenor Lane
Bethesda, MD 20814
http://www.safnet.org/

American Forestry Association
PO Box 2000
Washington, DC 20013
(202) 667-3300

American Forest council
1250 Connecticut Avenue NW
Suite 320
Washington, DC 20036

National Woodland Owners Association
374 Maple Avenue E, Suite 210
Vienna, VA 22180

National Christmas Tree Association
611 E. Wells Street
Milwaukee, WI 53202

International Society of Arboriculture
PO Box 3129
Champaign, IL 61826
http://www.isa-arbor.com/

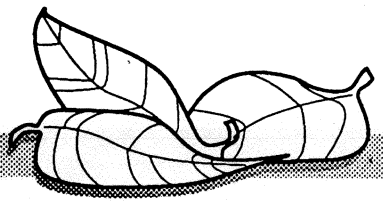
FRIENDS IN THE FIELD
Utah Tree Planting Organizations

TreeUtah
511 West 200 South, Suite 150
Salt Lake City, UT 84101
(801) 364-2122

Utah Community Forest Council
PO Box 961
Salt Lake City, UT 84110-0961

The Utah Nursery & Landscape Association (UNLA)
PO Box 526314
Salt Lake City, UT 84152-6314
http://www.utahgreen.org/

Utah Society of American Foresters
338 East 1140 North
Logan, UT 84321



Video Resources

Seeing is Believing
Videos about trees

Instructional Media Services
207 Milton Bennion Hall
University of Utah
Salt Lake City, UT 84112
(801) 581-6112

Rentals for three day periods.
Fees vary depending on each video.

"Boreal Forest"	19 min. 1963
"Coniferous Forest Biome"	16 min. 1969
"Gymnosperms"	16 min. 1961
"Introduction to Forest Adventuring"	26 min. 1965
"Life in the Deciduous Forest"	19 min. 1962
"Problems of Conser.: Forest & Range"	14 min. 1969
"Saw Timber"	22 min. 1966
"Spruce Bog: An Essay on Ecology"	23 min. 1956
"Succession: From Sand Dune to Forest"	16 min. 1960
"Temperate Deciduous Forest"	16 min. 1961
"Tree and Life"	22 min. nd
"Tree Community"	18 min. 1978
"Tree Improvement and Genetics"	26 min. 1974
"Tree Portraits"	21 min. 1955
"Trees and Their Care"	29 min. 1964
"Tropical Rain Forest"	16 min. 1961

Books

Note: The following books are listed according to grade level so teachers can locate titles that relate to the ***"Arbor Day/Month Guide"*** subject matter for their grades. Teachers are encouraged to use books from any grade level, however, to expand students' exposure to the fascinating world of trees.

Kindergarten

Bulla, Clyde Roberts. **"A TREE IS A PLANT."** Thomas Y. Crowell Co., 1960.

Coats, Laura Jane. **"THE OAK TREE."** MacMillan, 1963, ages 3-6.

Collier, Ethel. **"A BIRTHDAY TREE."** William R. Scott, Inc.

Darby, Gene. **"WHAT IS A TREE."** Pictures - Lucy and John Hawkins. Benefic Press, 1957.

Orange, Anne. **"THE LEAF BOOK."** Learner Pub. Co., 1975 (A book of leaf rubbings).

Rinkoff, Barbara. **"GUESS WHAT TREES DO."** Ill. by Beatrice Darwin, Lothrop, Lee and Shepard Co.

Shapp, Martha and Charles. **"LET'S FIND OUT ABOUT TREES."** Franklin Watts, 1970, ages 5-8.

Udry, Janice May. **"A TREE IS NICE."** Harper Row, 1956, ages 3-6.

Grade 1

Atwood, Ann. **"THE KINGDOM OF THE FOREST."** Scribners, 1972, ages 5-7.

Hiller, Ruth. **"THE REASON FOR FLOWERS."** Gross and Dunlap.

Jordan, Helene J. **"HOW A SEED GROWS."** Ill. by Joseph Low, Thomas Y. Crowell Co., 1960.

Lasky, Kathryn. **"SUGARING TIME."** MacMillan, 1983, photos.

Lavies, Bianca. **"TREE TRUNK TRAFFIC."** E.P. Dutton.

Podendorf, Illa. **"A NEW TRUE BOOK - TREES."** Regensteiner Publishing Enterprises, Inc., 1982.

Russell, Helen Ross. **"SPRINGTIME TREE SEEDS."** Ill. by Stanley Fleming, Regensteiner, Publishing Enterprises, Inc., 1972.

Grade 2

Carrick, Donald. **"THE TREE."** MacMillan Co., 1971, ages 6-7. Cutting down a tree.

Davis, Burke. **"BIOGRAPHY OF A LEAF."** Ill. by Jean Zallinger, 1922.

Hutchins, Ross E. **"LIVES OF AN OAK TREE."** Ill. by Jerome P. Collolly, Rand McNally and Company, 1962.

Lemmon, Robert S. **"JUNIOR SCIENCE BOOK OF TREES."** Ill. by Rene Martin, The Garrard Press, 1960.

Paterson, Allen. **"THE WORLD OF A TREE."** Ill. by Elsie Wrigley, Grosset & Dunlap, Inc., 1977.

Schwartz, David M. **"THE HIDDEN LIFE OF THE FOREST."** Crown Publishers, Inc.

Selsam, Millicent E. and Joyce Hunt. **"A FIRST LOOK AT LEAVES."** Ill. by Harriett Springer, 1972.

Grade 3

Bellamy, David. **"THE FOREST."** Clarkson N. Potter, Inc.

Blough, Glenn O. **"LOOKOUT FOR THE FOREST - A CONSERVATION STORY."** 1955.

Busch, Phyllis S. and Arline Strong. **"ONCE THERE WAS A TREE."** The World Publishing House, 1968.

Carrick, Carol and Donald. **"A CLEARING IN THE FOREST."** Dial Press, 1970, ages 7-9.

Silverstein, Shel. **"THE GIVING TREE."**

Taylor, Mildred D. **"SONG OF THE TREES."** The Dial Press, 1975.

Grade 4

Sabin, Louis. **"JOHNNY APPLESEED."** Troll Association, 1985.

Resources:

- Minnesota Forest Industries, Inc.
  208 Phoenix Building
  Duluth, MN 55802

- Paper Mills and Lumber Mills of Minnesota:

  Blandin Company
  Grand Rapids, MN

  Boise Cascade
  International Falls, MN

  Consolidated Papers, Inc.
  Tofte, MN

  Hennepin Paper Company
  Little Falls, MN

  Potlatch Corporation
  Cloquet and Brainerd, MN

Grade 5

Hall, Bill. **"A YEAR IN THE FOREST."** McGraw Hill, 1970.

Kuhn, Dwight. **"THE HIDDEN LIFE OF THE FOREST."**Crown Pub. Co., 1988, photos.

Lerner, Carol. **"ON THE FOREST EDGE."** William Morrow and Co., 1978.

Mahey, Richard. **"OAK AND COMPANY."** Greenwillow Books, 1983.

Resource List:

- **"A WALK IN THE FOREST "** by Herbert G. Lash
  Canadian Pulp and Paper Association
  2300 Sun Life Building
  Montreal, Canada

- **Worldwatch Institute**
  1776 Massachusetts Ave. N.W.
  Washington, D.C. 20036
  $2.00 each for:

  Worldwatch paper #58 - **"AIR POLLUTION, ACID RAIN, AND THE FUTURE OF FORESTS,"** March 1984.

  Worldwatch paper #83 - **"REFORESTING THE EARTH,"** April 1988.

Grade 6

Edwards, Joan. **"CARING FOR TREES ON CITY STREETS."** Schribner, 1975.

Gallob, Edward. **"CITY LEAVES, CITY TREES."** Schribner, 1972.

Life Nature Library. **"THE FOREST."** Time, Inc., 1962.

Pine, Tillies. **"TREES AND HOW WE USE THEM."** McGraw Hill, 1969.

U of MN Extension Bulletin. **"FIELD WINDBREAKS."** Cat NR-FO-08 29 (Available from Minnesota Extension Distribution Center).

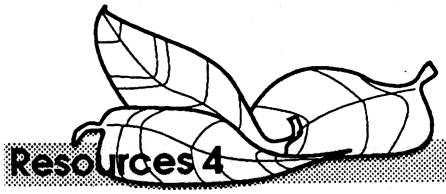
The following materials are somewhat technical but provide good background knowledge about windbreaks and shelterbelts.

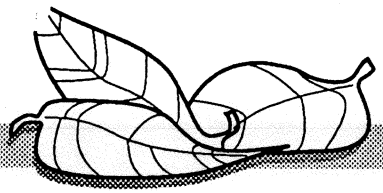
U.S.D.A. Soil Conservation Service Bulletins

"SOIL EROSION BY WIND." Ag Information Bulletin 555.

"AN ILL WIND MEETS A WINDBREAK."

"A TECHNICAL NOTE." *Basic windbreak design criteria for farm and ranch headquarters areas and large residential lots.*
Subject: ECS-Forestry Series-190=LI-6





Books About Trees & Tree Planting

A Guide to the Trees of Utah and the Intermountain West: Dr. Mike Kuhns, 1998, Utah State University Press, available from the Utah Community Forest Council. $10.00
Tree Basics: Dr. Alex L. Shigo, 1996, available from the Utah Community Forest Council, $4.00
Trees of Utah: Sherman G. Brough and Darrell J. Weber, 1993, Bristlecone Press, available from the Utah Community Forest Council, $7.00
Planting Landscape Trees: Dr. Mike Kuhns, 1996, an USU brochure, free from the Utah Community Forest Council
Rocky Mountain Tree Finder, A Pocket Manual for Identifying Rocky Mountain Trees: 1972. Tom Watts, Nature Study Guild, Box 972, Berkeley, CA 94701, $2.00

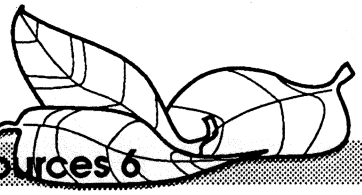
Reference Books:

America's Wild Woodlands edited by Donald J. Crump et. al. (National Geographic Society) 1985.
Audubon Society Nature Guides: Eastern Forests by Ann and Myron Sutton (Alfred A. Knopf) 1985.
Audubon Society Nature Guides: Western Forests by Stephen Whitney (Alfred A. Knopf) 1985.
Field Guide to Trees and Shrubs by George A. Petrides (Houghton Mifflin) 1972.
Forest by Jake Page and the editors of Time-Life Books (Time-Life Books) 1983.
The Forest (2nd rev. ed.) by Peter Farb and the editors of Time-Life Books (Time-Life Books) 1980.
The Great American Forest by Rutherford Platt (Prentice-Hall) 1971.
Hug a Tree and Other Things to do Outdoors With Young Children by Robert Rockwell, Elizabeth Sherwood and Robert Williams (Gryphon House, Inc. Publishers) 1983.
The Illustrated Encyclopedia of Trees, Timbers, and Forests of the World by Herbert Edlin, Maurice Nimmo, et al. (Harmony Books) 1978.
The International Book of the Forest edited by Dr. Maurice Burton et al. (Mitchell Beazley Publishers) 1981.
The International Book of Trees by Hugh Johnson (Simon and Schuster) 1973.
J. Sterling Morton by James C. Olson (University of Nebraska Press) 1942.
The Life of the Forest by Jack McCormick (McGraw-Hill) 1966.
The Living Forest by Jack McCormick (Harper) 1959.
Mister Tree Finder by May T. Watts (Nature Study Guild) 1963.
The Quiet Crisis by Stewart Udall (Holt, Rinehart and Winston) 1963.
Sharing Nature With Children by Joseph Bharat Cornell (Amanda Publications) 1979.
Spotter's Guide to Trees of North America by Alan Mitchell (Usborne Publishing) 1979.
Trees by Lawrence C. Walker (Prentice Hall) 1984.
Trees for American Gardens by Donald Wyman (MacMillan Co.) 1965.
Trees of North America by C. Frank Brockman (Golden Press) 1979.
Trees of North America by Roger Phillips (Random House, Inc.) 1978.
The Winter Tree Finder by May T. Watts (Nature Study Guild) 1970.
The Woodland Steward by James R. Fazio (The Woodlands Press) 1985.

Children's Books:

Apples – How They Grow by Bruce McMillan (Houghton Mifflin) 1979.
Big Tree by Mary and Conrad Buff (Viking) 1946.
Birth of a Forest by Millicent E. Selsam (Harper) 1964.
The Blossom on the Bough by Anne Ophelia Dowden (Thomas Y. Crowell Co.) 1975.
A Closer Look at Jungles by Joyce Pope (Gloucester Press) 1978.
Exploring City Trees by Margaret J. Anderson (McGraw-Hill) 1976.
The Fall of Freddie the Leaf by Leo Buscaglia, Ph.D. (Charles B. Slack) 1982.
A First Look at Leaves by Millicent E. Selsam and Joyce Hunt (Walker) 1972.

Flower Fairies of the Woodland by Cicely Mary Baker (Blackie and Son) 1984.
Forest Log by James R. Newton (Thomas Y. Crowell Co.) 1980.
The Giving Tree by Shel Silverstein (Harper and Row) 1964.
Have You Seen Trees? by Joanne Oppenheim (Young Scott Books) 1967.
It's Arbor Day, Charlie Brown by Charles M. Schulz (Random House) 1977.
J. Sterling Morton: Arbor Day Boy by Clyde B. Moore (The Bobbs-Merrill Company, Inc.) 1962.
Lives of an Oak Tree by Ross E. Hutchins (Rand McNally and Co.) 1962.
The Lorax by Theodor Geisel (Dr. Seuss) (Random House) 1971.
Maple Tree by Edith Thatcher (Morrow) 1968.
Maypoles and Wood Demons by Elizabeth S. Helfman (The Seabury Press) 1972.
Oak & Company by Richard Mabey (Greenwillow Books) 1983.
Once There Was a Tree by Phyllis S. Busch (Scholastic Book Services) 1968.
Play with Trees by Millicent E. Selsam (Morrow) 1950.
Secret Places by D.J. Arneson (Holt, Rinehart and Winston, Inc.) 1971.
See Through The Forest by Millicent E. Selsam (Harper) 1956.
Sugaring Time by Kathryn Lasky (MacMillan Co.) 1983.
This Is the Forest by Edith Thacher Hurd (Coward, McCann and Geoghegan, Inc.) 1969.
This Is a Leaf by Ross E. Hutchins (Dodd, Mead) 1962.
This Is a Tree by Ross E. Hutchins (Dodd, Mead) 1964.
A Tree Called Moses by Laura Nelson Baker (Atheneum) 1966.
Tree Flowers by Millicent E. Serlsam (Morrow) 1968.
A Tree Grows Up by Jean M. Guilcher and R.H. Noailles (Sterling) 1972.
A Tree Is Born by M. Guilcher and R.H. Noailles (Sterling) 1960.
A Tree Is a Plant by Clyde R. Bulla (Thomas Y. Crowell Co.) 1960.
A Tree Is Nice by Janice May Udry (Harper and Row) 1956.
A Tree Is Something Wonderful by Elizabeth K. and Padraic Cooper (Golden Gate Junior Books) 1972.
The True Book of Trees by Illa Podendorf (Childrens Press) 1972.



ARBOR DAY RAP

An original piece written and performed
by Judy Throckmorton's first grade class
for the 1991 state Arbor Day ceremony.

Western Hills Elementary School
5190 South Heath Avenue
SLC UT 84118

We're a rappin' first grade from Western Hills school

and we're here to say - Trees are cool

Trees, Trees! Give us Trees!

Trees give us desks, rulers, paper, pencils and books

Have places for reading in cozy nooks.

They give us fruit and food and lots of shade

We need them to make lemonade.

Trees, Trees! Give us Trees!

Our houses, cupboards, cabinets, doors,

garages, bookshelves, wall and floors

All come from lots of wood.

That's why trees are super good.

Trees, Trees! Give us Trees!

Boxes, chairs, cradles, tables,

even our toys, coat hooks and labels,

Baseball bats, wooden nickels and money

Even a place for bees to make honey.

Trees, Trees! Give us Trees!

Trees are fun for houses to play in

We can make concerts there

with pipes, flutes and a violin.

Canoes, carvings, shillelaghs, totems and clogs

are made in countries other than ours.

Trees, Trees! All from Trees!

The food we eat. That's a treat!

Bananas, grapefruit, apples, limes,

cherries, peaches, apricots and pines,

oranges, lemons, coconuts and chocolate,

maple syrup, dates, olives and other nuts

All from trees.

Trees, Trees! Give us Trees!

A tree is a house for:

birds, worms, squirrels, bugs,

whispering breezes and bird nest hugs.

We want to say in a major way

Plant trees for us and the monkeys to play.

At Halloween they're awfully scary

when their limbs reach out and your back feels hairy.

At Christmas time it's great to see

The sparkling lights on the decorated tree.

Trees, Trees! Plant a Tree!

Springtime blossoms, summer fun,

autumn colors, then it's done

Take a rest till winter's through

then bloom again for me and you.

Trees, Trees! Plant a Tree!

They give us oxygen to breathe

Take it from me . . . **Plant a TREE!**