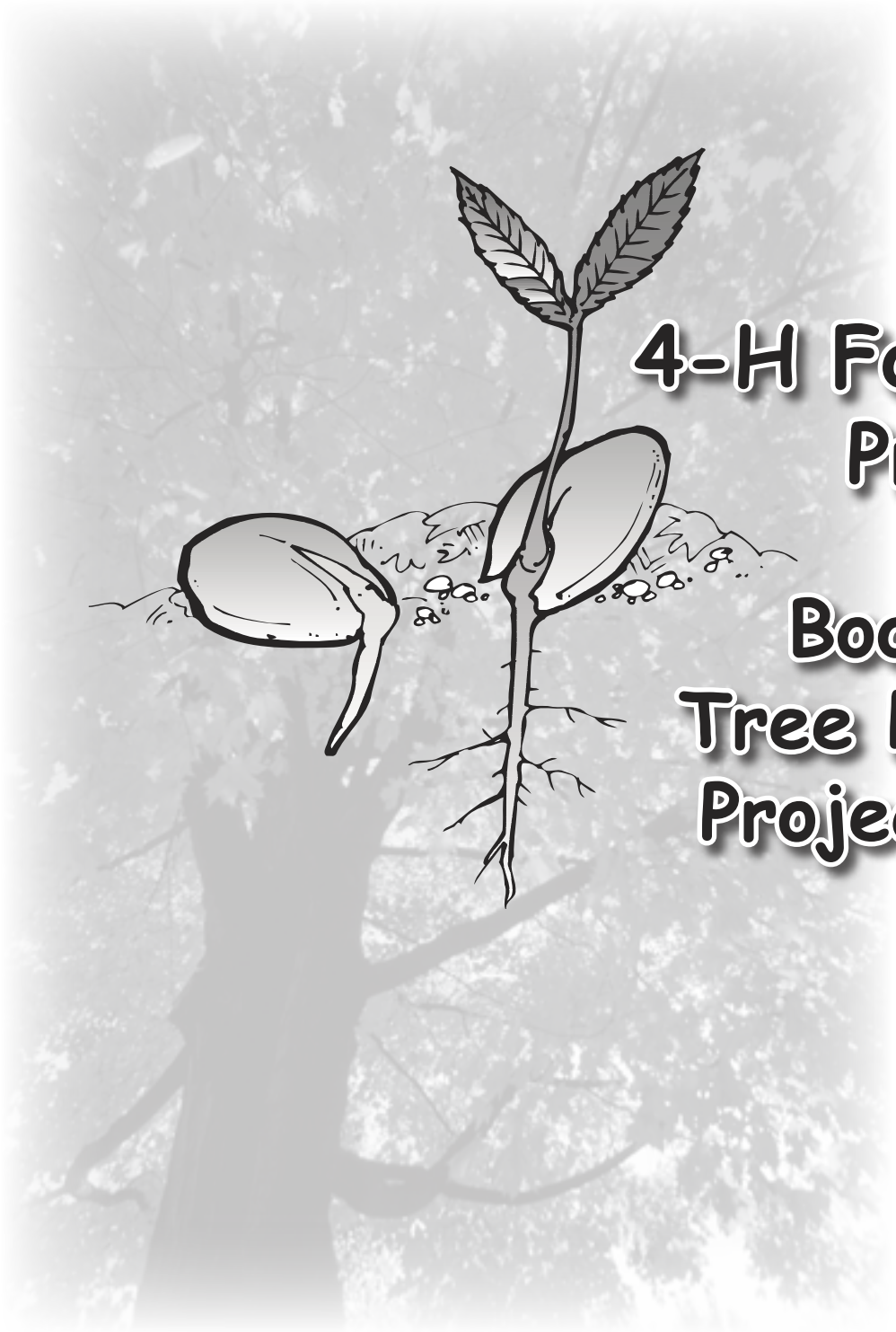

* 18 U.S.C. 707

4-H Forestry Projects

Book Two: Tree Planting Project Book

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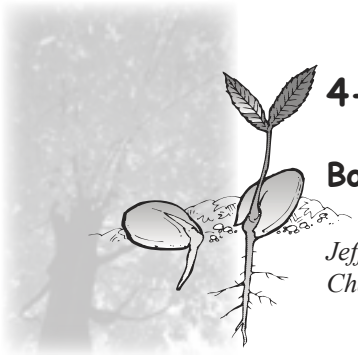
Virginia Tech
VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Virginia Cooperative Extension
Knowledge for the CommonWealth

VIRGINIA STATE UNIVERSITY



4-H Forestry Projects

Book Two: Tree Planting Project Book

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Charles Lytton, Extension 4-H Youth Development Agent, Giles County

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"Planting a tree is about the most unselfish thing a person can do." Author unknown.

Keeping a Tree Journal
At the end of each activity you will find three questions to answer. Write your answers in a journal, and turn it in at the end of the project year with your project book.

*Planting a seedling is the easiest and mot economical way to plant a tree. In most cases, 4-H members may receive free seedlings if they make arrangements with their Extension agent prior to December 15. These seedlings will arrive in March/April and should be planted immediately.

Why Plant Trees?

Trees provide jobs

Trees and the products that come from them provide more jobs than any other industry in Virginia. People who work in the forest industry include foresters, loggers, sawmill operators, furniture makers, paper mill workers, nurserymen, and arborists.

Trees provide the things we need and enjoy

Forest products from Virginia include: Christmas trees, copy paper, cardboard boxes, baseball cards, juice cartons, birthday cards, newspapers, fragrances for soap, plywood, cabinets, decking, furniture, flooring, air filters, pallets, lumber, railroad ties, and much more!

Trees protect the environment

Trees and the leaves that fall to the ground protect the soil from erosion. They also increase the amount of water the soil can hold to help prevent flooding.

Trees remove pollution

Small particles in the air (air pollution) are trapped in the leaves of trees and wash onto the ground when it rains. There they are adsorbed by tree roots. Tree roots also take up some of the fertilizer that washes away from agricultural fields and lawns.

Trees keep our water clean

Land can be used many ways, such as for agriculture, homes, and forests. Of all these, forests are the best at protecting water quality. That is why most of our water reservoirs collect water that comes from forested areas. Trees planted next to a stream do the most to protect water quality.

Trees provide food and homes for wildlife

Nuts and berries from trees like oaks, hickories, dogwoods, and cherries are particularly valuable to many kinds of wildlife. Hollow trees provide homes for many birds and mammals. Evergreen trees are good for winter cover. Even dead trees are good for insect feeders like woodpeckers.

Trees add value to your home

Mature trees can add 20 percent to the value of your home. If your home is worth $150,000, mature trees could add $30,000 to its value! Properly placed trees can also reduce the cost of heating and air conditioning your home.

1. Why are **you** planting trees?
2. How will your trees benefit others?
3. How might you convince others to plant trees?

Activity One: Deciding What to Plant

Talk with your parents about planting trees. Look at the lists of trees below and circle the types of trees that interest you. Your Extension agent may be able to get seedlings of the commonly planted trees for free or at low cost. You will have to purchase the others from a nursery or grow them from seed. Consider the size of a tree before you plant it.

Common trees for 4-H projects:

Loblolly pine
(Good lumber tree, planted in the piedmont and coastal plain)

White pine
(Good for Christmas trees, planted in the mountain and valley regions)

American chestnut
(We are trying to restore this tree that was once important to Virginia)

Other hardwoods
(Good for planting in riparian areas, at your home, or in your community)

Trees that grow less than 30 feet tall

Serviceberry	Eastern Redbud	Dogwood	Goldenraintree
Star Magnolia	Crabapple	Purple Leaf Plum	Cultivated cherries

Trees that grow 30-50 feet tall

River birch	Chinese chestnut	Leyland cypress	Persimmon
American holly	Eastern redcedar	Sweetbay magnolia	Blackgum
Sourwood	Colorado blue spruce	Black cherry	Littleleaf linden
Live oak	Sassafras	Arborvitae	Chinese elm

Trees that grow more than 50 feet tall

Most maples	Most hickories	Pecan	Hackberry
American beech	Ash	Ginkgo	Honeylocust
Black Walnut	Sweetgum	Tuliptree	Southern magnolia
Most pines	Sycamore	Most Oaks	Black Locust
Bald cypress	Basswood	Japanese zelkova	

1. What tree(s) did you circle?
2. Why did you select this tree? (These trees?)
3. Are there other trees that interest you?.

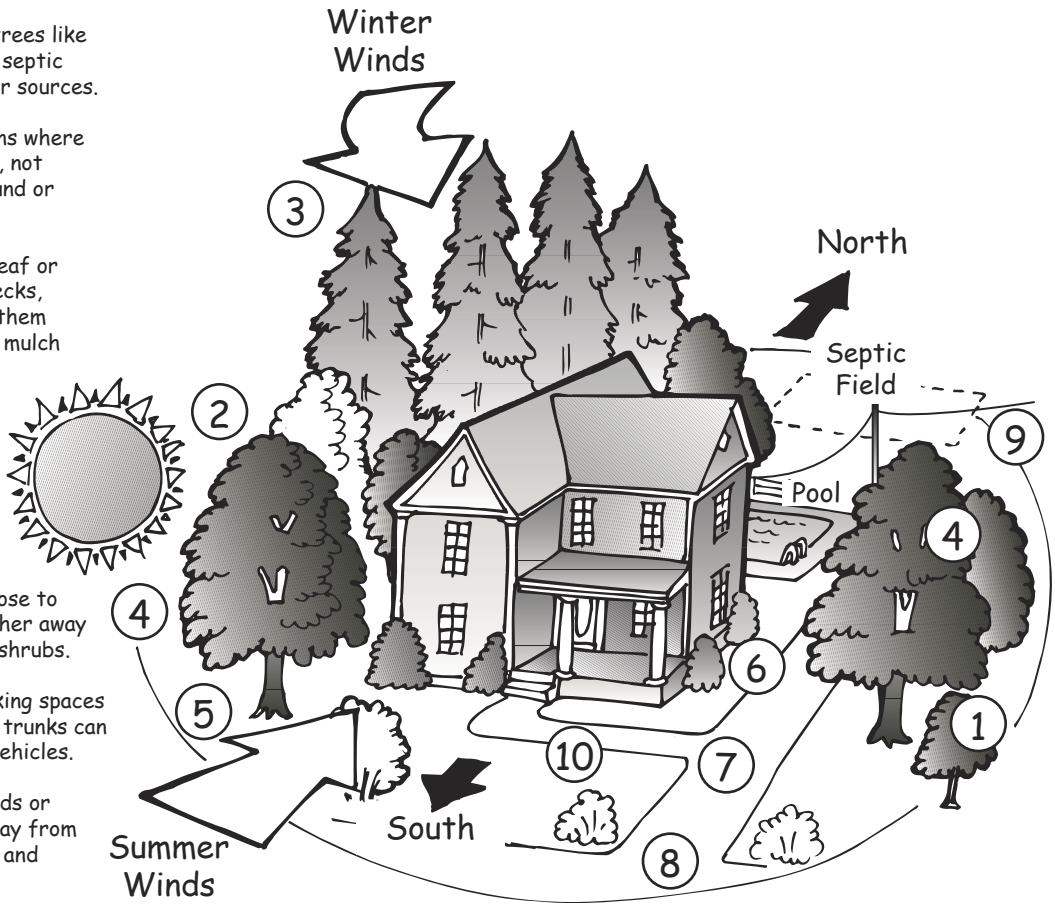
Activity Two: Deciding Where to Plant

Study the planting diagram below to help you determine the best place to plant trees around your home. Be sure to avoid planting near underground utility lines. If you are planting a large number of trees in a vacant field, ask a forester to help you determine the best spacing between trees. Draw a map of your planting site and include it in your tree journal.

Tips

1. Plant understory trees like dogwoods in shade, not in full sun.
2. Do not plant water-loving trees like willows near drain pipes or septic fields or near water lines or sources.
3. Align trees for wind screens where they will block winter wind, not where wind will funnel around or between them.
4. Avoid planting trees with leaf or fruit "litter" near pools, decks, gutters, or paving. Locate them where they shade and self mulch their litter.
5. Avoid planting evergreens where they block winter sun. Instead, plant deciduous trees for summer shade and winter sun.
6. Avoid planting trees too close to the house. Plant them further away or plant smaller trees and shrubs.
7. Plant trees away from parking spaces and driveways where their trunks can be scraped or bruised by vehicles.
8. Branches can create hazards or block views. Plant trees away from street corners and vehicle and pedestrian traffic.
9. Avoid planting trees directly under utility lines. Plant smaller, low-growing trees or large shrubs.
10. Plant trees away from sidewalks to allow for root growth and prevent pavement buckling.

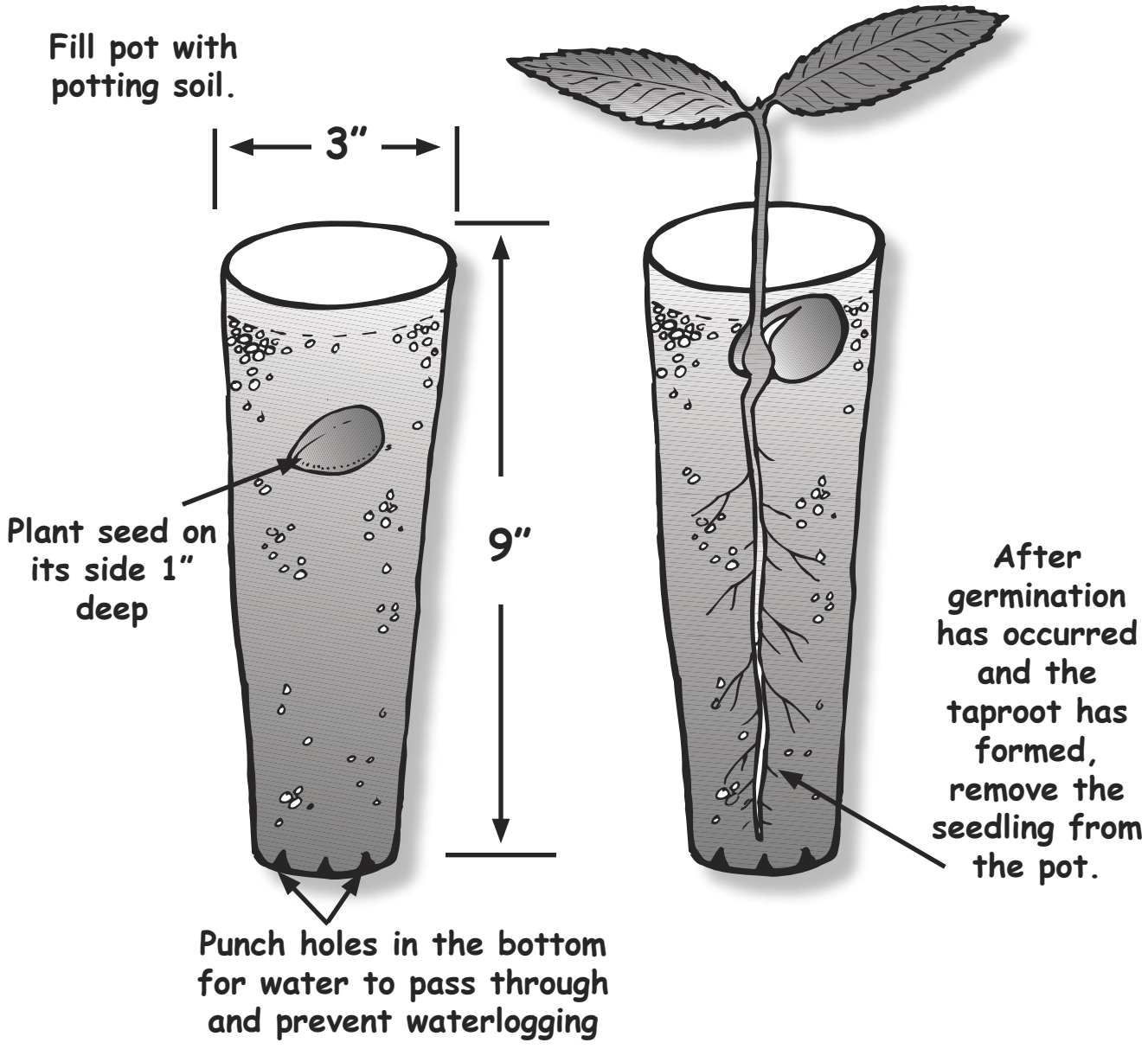
Good Examples of Tree Planting



1. Draw a map of your planting site and include it in your journal. If you are planting trees in a large field, indicate how close you will space your trees.
2. Check the existing trees in your yard. If they are not planted correctly, what can be done to correct the situation?
3. Will your new tree have enough room to grow 30 years from now?

Activity 3. Planting a Tree from Seed

Use the seed germination chart on the next page to determine what you need to do to prepare the seed. You can start your seed in a pot (as illustrated) or outdoors in a planting bed.



1. What happened when you planted your seed?
2. Did you notice any patterns to the way it grew?
3. Do you think you could grow seedlings and sell them to others as a way to make money?

SEED GERMINATION CHART FOR VIRGINIA FOREST TREES

Tree	Seed collection dates	Special instructions	Dormancy
Sweet gum	Collect seed heads while they are still closed and on the tree.	Spread seed heads on a dry surface for 5-10 days or until they open. Shake to remove seeds.	Short - requires only 15-30 days of prechilling (5°C, 41°F).
Loblolly pine	Collect ripe (green) cones before they open. (September-October)	Spread cones on a dry surface for 2-6 days or until they open. Shake to remove seeds.	Medium - must overwinter before germinating.
Red oaks (southern red, pin, willow, and black oaks)	Collect acorns as soon as they drop from the tree. (September-October)	Discard all acorns with small holes (weevil damage).	Medium - must overwinter before germinating.
White oaks (white, basket, chestnut, and post oaks)	Collect acorns as soon as they drop from the tree. (September-October)	Discard all acorns with small holes (weevil damage).	No dormancy - will germinate immediately.
Red and silver maple	Collect winged "helicopters" when they fall from the tree. (April-June)	Seeds ripen August-October.	Short - no prechilling required.
Sycamore	Collect anytime after seed heads turn brown. (November-April)	Dry seed heads on trays until they break apart easily.	Medium - must overwinter before germinating.
Beech	Sweep burs from the ground after frost. (October)	None.	Poorly understood.
Black cherry	Pick when fruits are ripe (black). (August-September)	Air-dry seeds and store in plastic bags.	Long - 1-3 winters before germinating.
American chestnut	Collect as soon as burs begin to split. (September-October)	Sow or put in cold storage promptly.	Medium - must overwinter before germinating.
American elm	Sweep seeds from the ground. (March-June)	Air-dry for a few days.	Medium - seeds must overwinter before germinating.
American holly	Pick when fruits are ripe (red). (March)	Remove seeds from the fruit by squeezing between your fingers.	Long - 2-3 years before germinating.
Hickory, pecan	Collect nuts as soon as they fall from the tree. (September-December)	None.	Medium - nuts must overwinter before germinating.
Tulip tree (Yellow poplar)	Seeds can be collected from the ground almost anytime.	Low germination (10%) because of poor flower pollination.	Medium - seeds must overwinter before germinating.
Dogwood	Pick ripe (red) fruit from the tree. (October)	Spread on a dry surface.	Long - 1-2 winters before germinating.

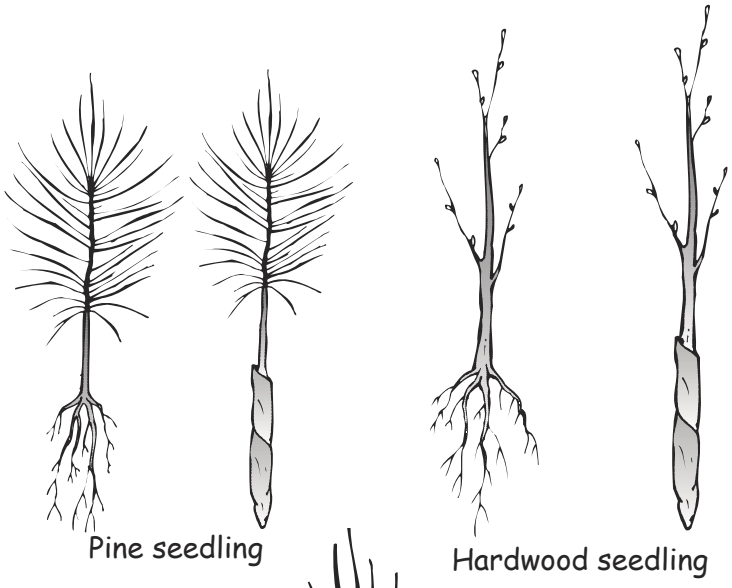
Activity 4. Planting a Bare-Root Seedling

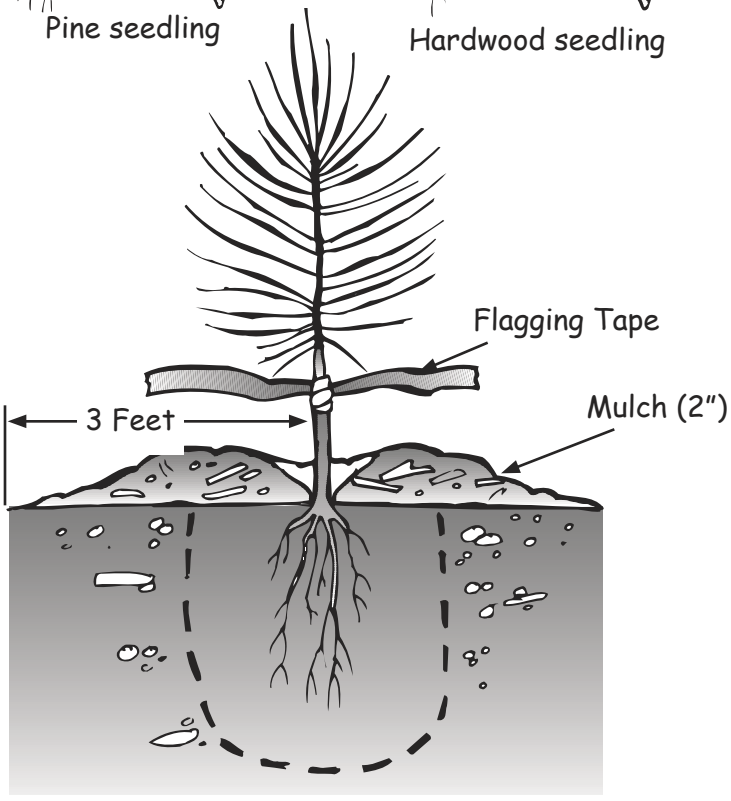
How to Plant and Care for a Seedling

1. Keep the roots cool and moist until planting. For individual seedlings, wrap the roots in a moist paper towel and insert them (roots only) into a plastic bag. Store seedlings in the refrigerator or an unheated basement. Do not let the roots freeze.

2. Find a spot with plenty of sun that is away from your house and not under utility lines. Clear all the grass within 3 feet of the seedling. (Young trees do not like to grow in the grass.) Dig a hole slightly deeper than the roots so that they do not bend in the planting hole. Do not plant the seedling any deeper than the first green needles or bud.

3. Put some garden mulch, pine straw, or leaves in the 3-foot area around the tree to keep grass from growing back. Mark your tree with flagging or a small stake so that the lawn mower does not cut it. (Young trees are hard to see.) Give your tree water when it gets hot and dry outside.





Note: Your seedling will grow slowly the first year. Do not plant seedlings closer than 10 feet from each other. The best time to plant a seedling is while it is still dormant and the ground is not frozen (Feburary through April).

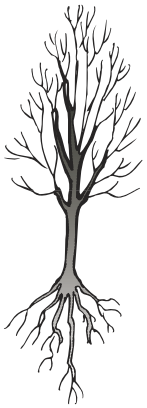
1. How many days did you store your seedling(s) before planting?
2. After planting, how many days was it to the first rainfall?
3. How might you improve the survival of your seedling(s) next year?

Activity 5. Planting a Sapling

Saplings are woody plants with a stem diameter between 1 and 5 inches. Saplings can be purchased at most garden centers.

Bareroot

Heel-in plants if not planted immediately. Neatly cut away any broken or damaged roots. Soak for a few hours prior to planting to rehydrate the roots.



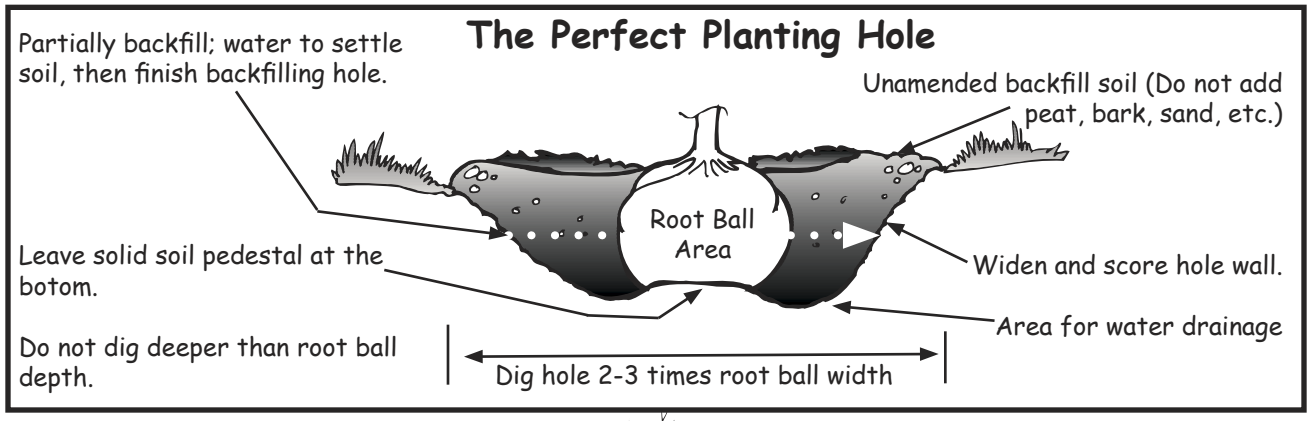
Container Grown

Completely remove plastic or metal containers. Remove the top half of pressed peat or paper containers. Carefully cut through any circling roots.

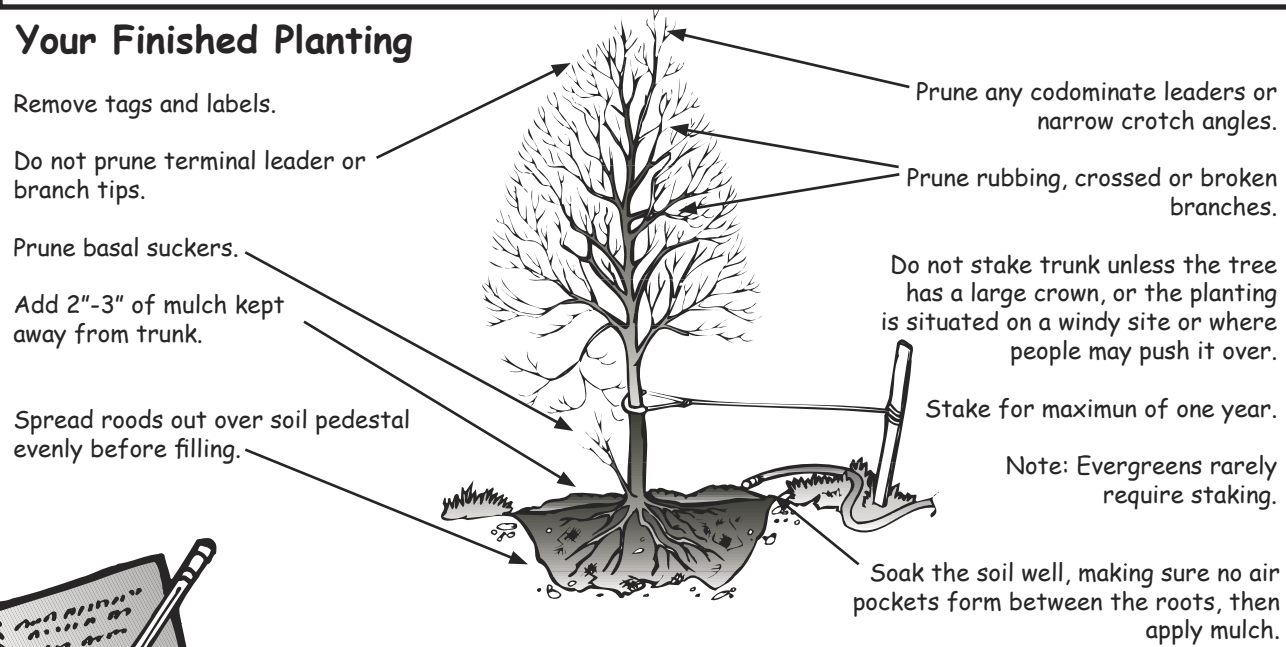
Balled-in-Burlap "B&B"

Cut balling ropes or strings. Pull the burlap at least 1/3 of the way down. Slit the remaining burlap to encourage root growth. If the ball is in a wire basket, cut away the top section.

The Perfect Planting Hole



Your Finished Planting



1. Where did you purchase your sapling?
2. How much did it cost?
3. Do you think you would like to plant trees for a living?

Activity 6: Ideas for Presentations, Exhibits, Community Service, and Science Fair Projects (Choose two or more)

Presentations

"How to plant a tree" (Show the steps you learned.)
"How trees are used" (Show examples of paper, lumber, veneer, plywood, etc.)
"Trees are worth money" (Find current values for wood products.)
"Stages in the life of a pine tree" (Use pictures to describe the life stages.)
"From nurseries to you" (Tell how pine seeds are planted and harvested at nurseries.)
"Superior trees" (Tell how pollination is controlled to produce superior trees.)

Exhibits

Display a collection of cones and/or seeds from trees.
Describe your planting site and show how you grow trees.
Create drawings (compare trees growing in different conditions or at different ages).
Make a video about planting trees and show it to a group.
Make a video of your visit to a seed orchard, nursery, tree farm, etc.

Citizenship

Keep a scrapbook that illustrates the value of trees to people and show it to others.
Read a book about trees to a younger audience.
Donate a leaf/seed/photo collection to a library or teacher.
Identify the trees at your school for nature study.
Help organize or conduct an Arbor Day activity.
Draw a poster about trees or forests and exhibit it in a public place.
Collect acorns and other seeds for the Virginia Department of Forestry.

Science Fair Ideas

Do seeds from some trees germinate earlier than others?
Do larger seeds produce larger seedlings? (Weigh seeds before planting and compare growth.)
Do acorns that float germinate better than those that do not? (Floaters are often infested with weevils.)
Do wildlife prefer the seeds from one tree species over another? (Leave seeds on a bird feeder and record your findings.)
Does planting depth affect germination? (Plant seeds at different depths and compare.)

Checking for Survival

Check your tree(s) in June to see if they are surviving. A live tree will have green leaves or needles. In the wintertime, look for buds and a green layer of cells just beneath the bark

Caring for Your Tree

The best way to care for a tree is to mulch around the base out to its drip line being careful not to let the mulch touch the trunk.

Activity 7. Completing Your 4-H Project Record

Your Name _____

Address _____

_____

Name of your School or 4-H Club _____

Part A. Note the name, location, date, and number of trees that you planted in your backyard, farm or community. Check for survival at least one month after planting.

Name of tree	Location of tree	Date	Number Planted	Survival
Ex. White Oak	*in my back yard*	*3/15/05*	*5 seedlings*	*4*
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____

Part B. Complete at least five of the following activities.

Activity	Date Completed
1. Deciding what to plant	_____
2. Deciding where to plant (attach a map of your planting site)	_____
3. Planting from seed	_____
4. Planting a seedling	_____
5. Planting a sapling	_____
6. Checking for survival	_____
7. Caring for your tree	_____

Part C. Complete two of the following activities. **Date Completed**

1. Give a presentation on tree planting or forestry. _____

2. Make an exhibit related to forestry. _____

3. Do a citizenship activity related to forestry. _____

4. Do a science fair project with seeds or seedlings. _____

Part D. My 4-H Story or Presentation

Story. Write a paragraph in your journal about your experiences in this project. Did you encounter any problems? How did you solve them? Did you seek advice from others? Did you say "thank you" to those who helped you?

1. Will you do another tree planting project next year?
2. What changes would you make?
3. Why are those changes important?

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