

# Planting Trees

IN YOUR COMMUNITY FOREST

*by Sylvan and friends*

*Inside you will find:*

- puzzles
- projects
- and more!

*For 9- to  
109-year-olds*



*This book belongs to:*



**PennState Extension**

# The Community Forest

Look around—all the trees  
you see are part of the  
community forest.

Did you know that you live in a forest? It may not be the kind of forest you think of when you hear that word. A **community forest** is made up of all of the trees in a town or city. Think about all the trees that are in your neighborhood, close to your school, and anywhere else near your home. These trees all are part of your community forest.

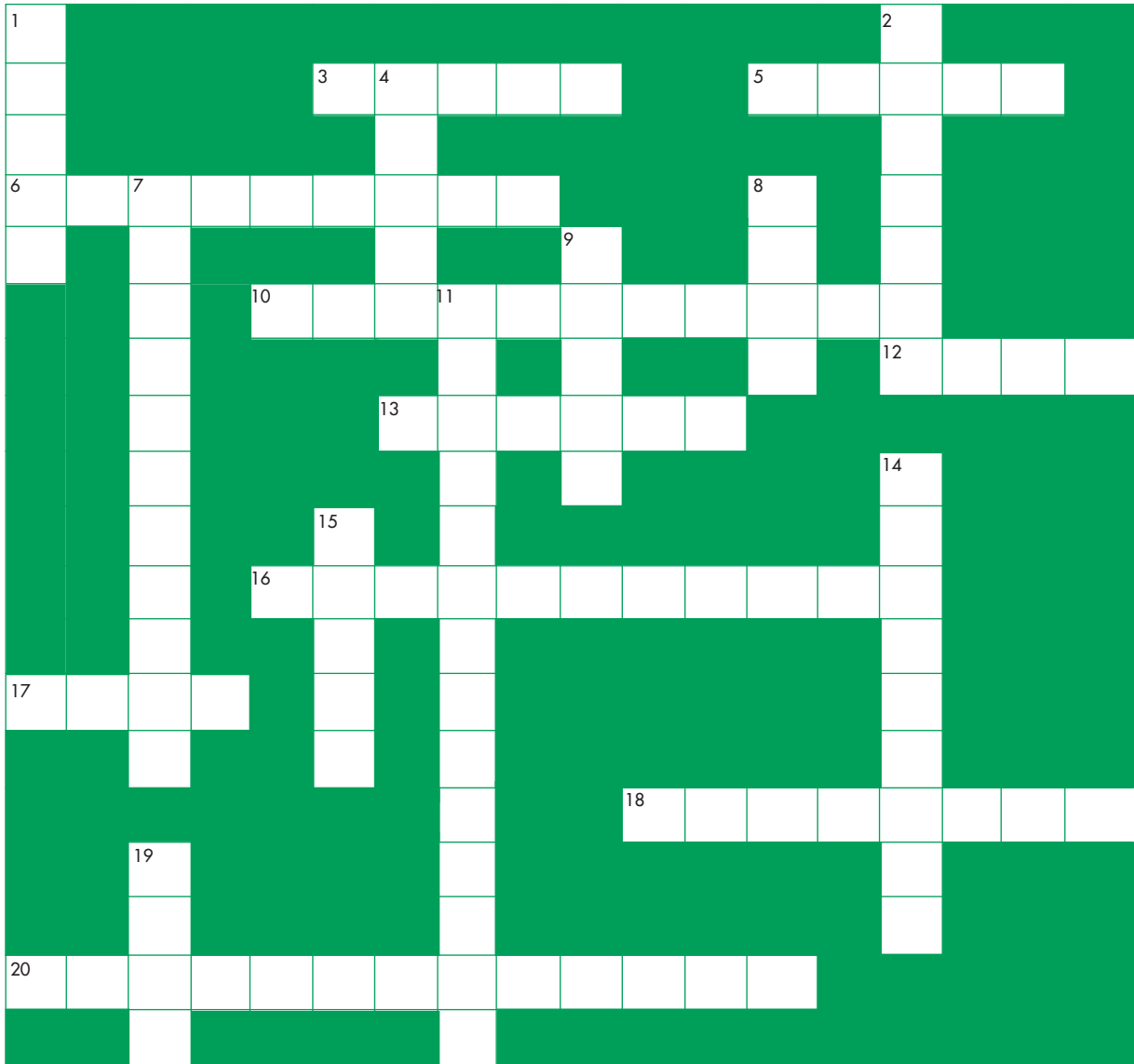
How can you  
help the  
community forest  
grow?

*Plant a tree!*



# CROSSWORD PUZZLE

(Answer on page 36.)



## Across

3. What do a tree and an elephant have in common?
5. What do a tree and a king have in common?
6. What kind of tree loses its leaves in the winter?
10. Some of the oxygen that trees produce during photosynthesis is used up in a process called \_\_\_\_\_.
12. A small branch.
13. A group of trees in a wilderness, a town, or even a city!
16. A \_\_\_\_\_ pine is a tree that can grow to be more than 4,000 years old.
17. During what season of the year does tree growth begin to slow down?
18. When chlorophyll breaks down, you can see other \_\_\_\_\_ in leaves.
20. Photosynthesis combines sunlight, \_\_\_\_\_, \_\_\_\_\_, and water to make food for the tree.

## Down

1. \_\_\_\_\_ trees are the most popular trees on hot days.
2. When trees are in a period of rest, they are \_\_\_\_\_.
4. What part of the tree is its anchor?
7. What makes leaves look green?
8. A better word for dirt.
9. The color of most leaves in the summer.
11. The chemical process trees use to make food is called \_\_\_\_\_.
14. What kind of tree looks green all year long?
15. A sweet gift to eat from a tree?
19. What do a tree and a dog have in common?

# You Can Plant a Tree

- What kind of tree will you plant?
- Will it be a big tree?
- Will it be a flowering tree?
- Will it be a fruit tree?
- Will it be a shade tree?
- Will it be an evergreen?

First you have to find the right place to plant your tree. The place you choose to plant your tree is called the **site**.

The first step is for you to find the best site to plant your tree. It is very important to look at and learn about the planting site before you buy and plant the tree. Once you know the characteristics of the place you are planting the tree, then you can decide what kind of tree will grow there. Trees need good sites to grow. A good site is big enough for a tree's roots and branches to grow, has the right amount of sun, and has good soil.



# How Do You Find the Best Planting Site?

Meet my friend Hawk. Hawk will show you how to find the best site to plant your tree.



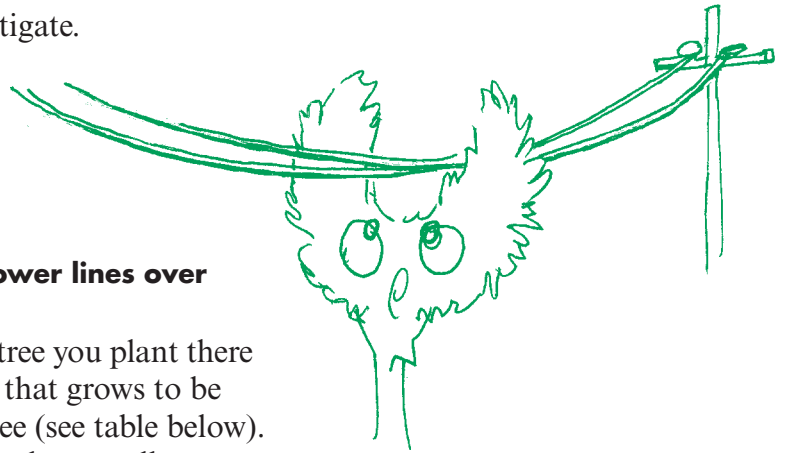
You need to do some careful investigating. First, go to the site where you think a tree might grow. Now, let's be detectives. I'll help you investigate.

**LOOK UP:**  
**Do you see power lines over your head?**

If you do, the tree you plant there should be one that grows to be only a short tree (see table below). If you want to plant a tall tree, look for another site that is bigger.

Use this table to figure out if you want a short, medium, or tall tree.

TREE SIZE	HEIGHT
Short	Less than 25 feet
Medium	25 to 40 feet
Tall	More than 40 feet



**LOOK AROUND:**

**1. Do you see a road, sidewalk, or curb nearby?**

Trees' roots can grow outward underground to about three times the distance to the edge of their crown—remember that Sylvan explained this on page 6. Paved roads keep water and nutrients from getting down to the roots. Tree roots also may cause damage to a street or sidewalk. That's why it is important to choose the right tree for these locations. To see what size tree you can plant, look at the table below.

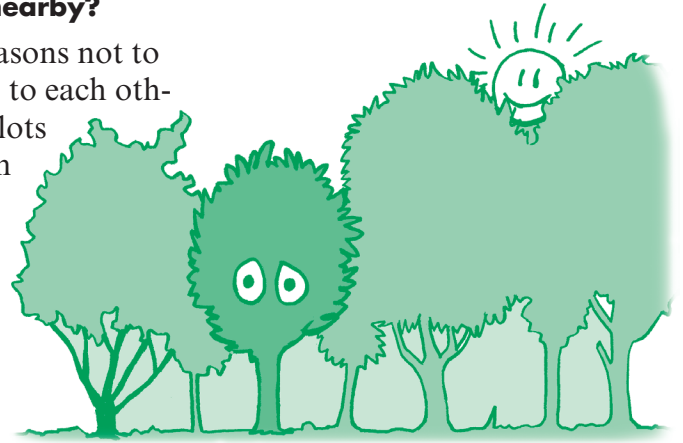
WIDTH OF PLANTING AREA	SIZE OF TREE YOU CAN PLANT
Less than 2 feet	Short
2 to 4 feet	Medium
Greater than 4 feet	Tall

**2. Do you see a house nearby?**

Deciduous trees planted on the east or west sides of a house can help to keep it cooler and conserve energy by shading the house from the sun in the summer. Because deciduous trees lose their leaves, they will let in the sun to warm your home in the winter. But it's important to pick the right kind of tree and to plant it the right distance from the house. Ask the people at the plant nursery how far your tree should be planted from the east or west side of the house.

**3. Are other trees nearby?**

There are several reasons not to plant trees too close to each other. Some trees need lots of light from the sun to grow and others need less. If a tree that requires full sun is planted in the shade of a larger tree, it will not grow well. If a tree that doesn't like full sun is planted in the open, it will not grow well.



**4. How much sunlight does this spot get?**

Go to your site in the morning and then again in the afternoon on a sunny day before you answer this question. Can you think of why it would be important to visit your site at different times?

(Answer on page 36.)

Here are the categories you can choose from to describe your site:

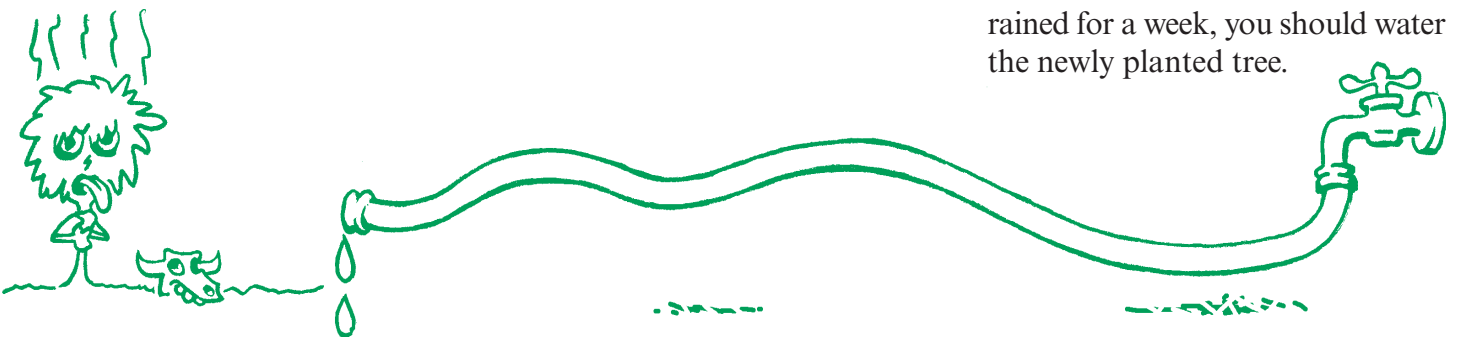
- Full sun*  
(6 hours or more a day)
- Partial sun*  
(4 to 6 hours a day)
- Shady*  
(less than 4 hours a day)

Don't forget to write down your answer. My site is in this category:

\_\_\_\_\_.

**5. Is a hose nearby to water the young tree?**

Trees need water to grow, especially when they are first planted. If the weather is hot and it has not rained for a week, you should water the newly planted tree.







**LOOK DOWN:**  
**1. Are there any pipes or wires underground?**

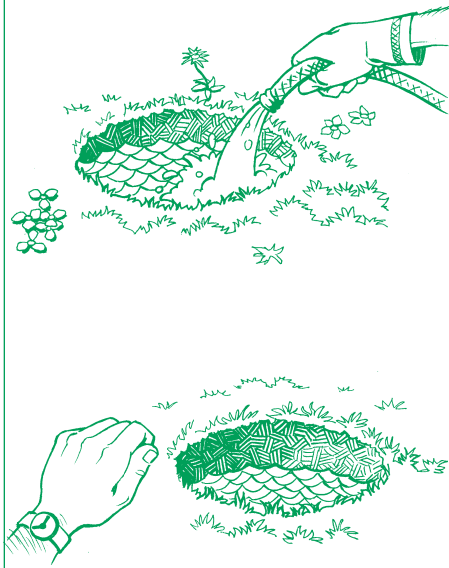
It can be very dangerous to dig a hole if there are buried electric wires, cable wires, telephone wires, water pipes, natural gas lines, or septic tanks. Ask an adult to call all the utility companies (in many places, it's as easy as calling one phone number) before you do any digging.



**2. How fast does water drain from the soil?**

It is very important for you to remember that there are many different types of soils, and that different types of trees need different types of soils. If water does not drain from soils quickly, air cannot move in and through the soil because the small places for air in the soil are filled with water. The roots of some kinds of trees need less air and can live in soil that drains water slowly. The roots of other kinds of trees can live in soil that drains water very fast. To know the right kind of tree to choose, you should know what kind of soil you have.

**PROJECT:**  
**A Soil Experiment!**



Let's find out how fast water drains from your soil.  
 Dig a hole about 18 inches deep and 12 inches wide. If you're digging the hole on someone else's property, ask permission first. Fill the hole with water. Now carefully time the water draining from the hole. If the water drains away within an hour, the soil has good **drainage**. If it takes a few hours to a whole day to drain, the soil has slow or "fair" drainage. If the water takes more than a day to drain, the soil has poor drainage. Don't forget to write down your results!

**My site has \_\_\_\_\_ drainage.**

## A Description of the Tree I Would Like

Circle the words below that describe the tree you want. Remember to take this booklet with you when you go to the nursery.

tall  
medium  
small  
deciduous  
evergreen

shade  
native  
non-native  
home for wildlife  
broadleaf

flowering (color: \_\_\_\_\_)

fruit to eat: \_\_\_\_\_

Add more here if you don't find the words that describe your tree:

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## A Description of My Tree Planting Site

Circle the words in the following sentences that describe the site where you are going to plant the tree.

There **are** or **are not** utility wires.

The width of my planting site is **less than 2 feet**, **2 to 4 feet**, or **greater than 4 feet**.

There **is** or **is not** a street or sidewalk nearby.

The tree **will** or **will not** be planted near a house.

The tree **will** or **will not** be planted in the shade of other trees.

There **are** or **are not** pipes or wires underground.

The soil has **good**, **fair**, or **poor** water drainage.

If you don't find the words to describe the site where your tree will be planted, add more here:

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## What can you do with the information you've discovered?

Now that you have your planting site information, you can go to the **plant nursery**! In some areas, this may be called a garden center or a nursery and garden center. The plant nursery is a place that grows and sells plants and trees. The people who work there know all about trees and other plants. They can help you decide which tree is best for you and the place you have chosen to plant it. You can choose from many kinds of trees. Be sure to give the nursery workers the information Hawk helped you find, and tell them about the kind of tree you would like to have.



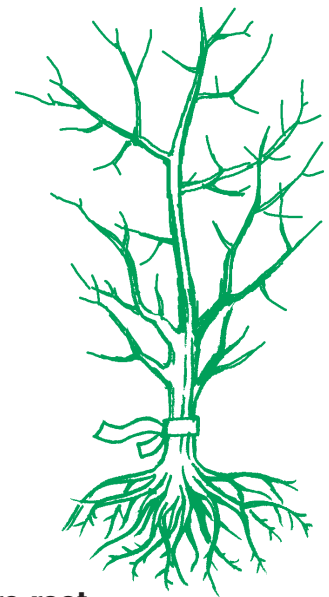
# What Type of Package Will Your Tree Be In?

Nurseries have trees in different packages.



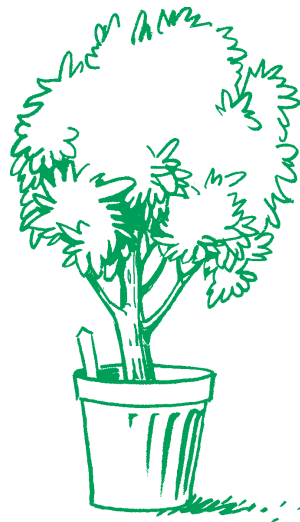
## **Balled-in-burlap (B&B)**

These trees are grown in the ground without a container. When they are dug out of the ground, the ball of soil around their roots is wrapped tightly in **burlap**. Do you know what burlap is? (Answer on page 36.) Sometimes, to keep the ball of soil from breaking apart, it also is placed in a large wire basket.



## **Bare-root**

You actually can see the roots on these trees! They are dug out of the ground, and the soil is removed from around their roots. It is very important to keep the roots of bare-root trees moist at all times. Do you know why this might be important? (Answer on page 36.) Bare-root trees are available only part of the year. They must be planted when they are dormant. Do you remember what “dormant” means? Look back to page 10 or in the Glossary if you need a reminder.



## **Container-grown**

This type of tree is grown above-ground in a specially designed plastic pot. The pots can be many different sizes.



# How Do You Choose the Best Tree?

You have answered Hawk's questions, and you've talked to the people at the nursery. They have helped you to select the right kind of tree for your site, and you are ready to buy your tree.

*But wait!*

**We want you to buy a healthy tree. Please remember to inspect the trees carefully so that you can choose the best one. Here is a checklist for you to use when you go to the nursery.**



The nursery has lots of trees like the one you have chosen. Do you know how to pick the best one? The best tree to pick is a strong and healthy tree.

Can you think of some trees you have seen that just don't look right? Think about why they do not look good to you. Maybe their leaves are yellow when they should be green? Or they have broken or dead branches? Maybe they have harmful **pests** on them? Those are the kinds of trees you want to avoid.



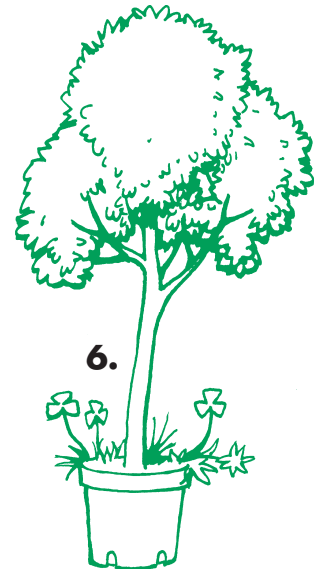
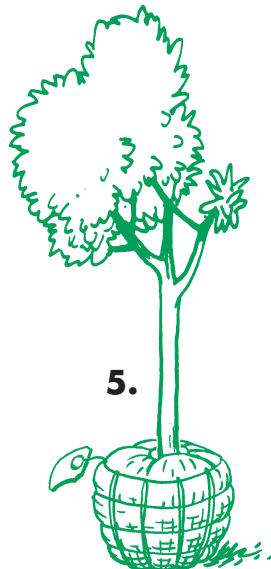
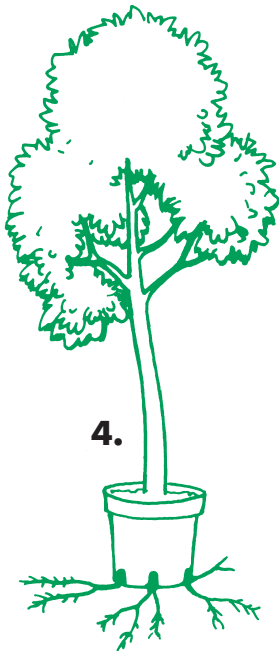
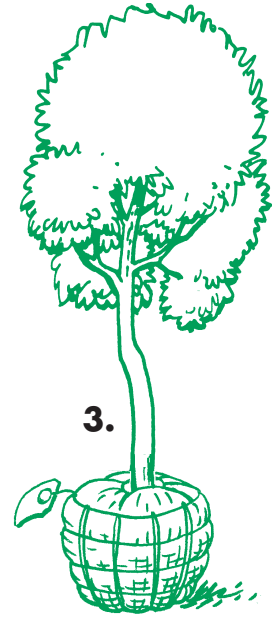
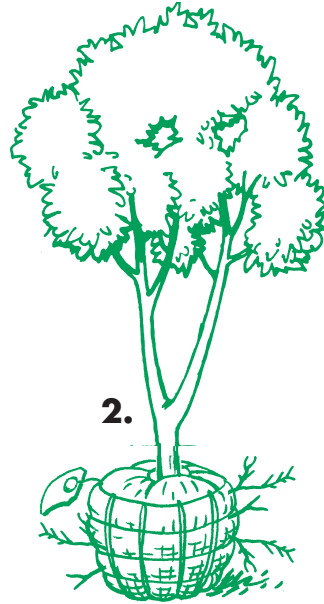
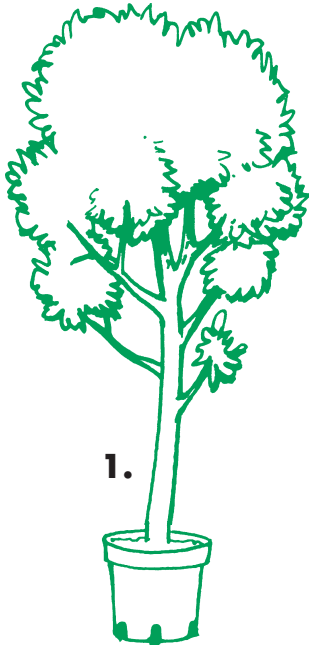
## THE RIGHT TREE HAS:

- a strong, straight trunk
- a trunk that is not cut or damaged
- evenly spaced branches along the trunk
- branches that are not split or broken
- a full canopy of leaves (except when dormant)
- mostly green and healthy leaves (except when dormant)
- no diseases or harmful insects
- a root ball that is wrapped with fresh burlap
- a root ball that is firm and round
- no roots growing out of the burlap ball
- no roots growing out of the bottom of the container
- no roots circling the top of the container
- no weeds growing in the container
- moist soil in the root ball

**WHICH OF THESE TREES WOULD YOU CHOOSE?**

**Circle the tree below that you would choose to plant.**

(Answer on page 36.)



# Taking Your Tree Home Safely

Once you have found a healthy tree, it is very important to take your tree home safely.

The first thing you should know is this—NEVER PICK UP A TREE BY THE TRUNK. Always lift the tree by the root ball or container; lifting the tree by the trunk breaks the contact between the roots and soil. The contact between the roots and the soil is necessary for water to be absorbed by the roots. If you lift the tree by the trunk, the weight of the soil also may damage or break roots. So remember to pick up your tree by the root ball or container.



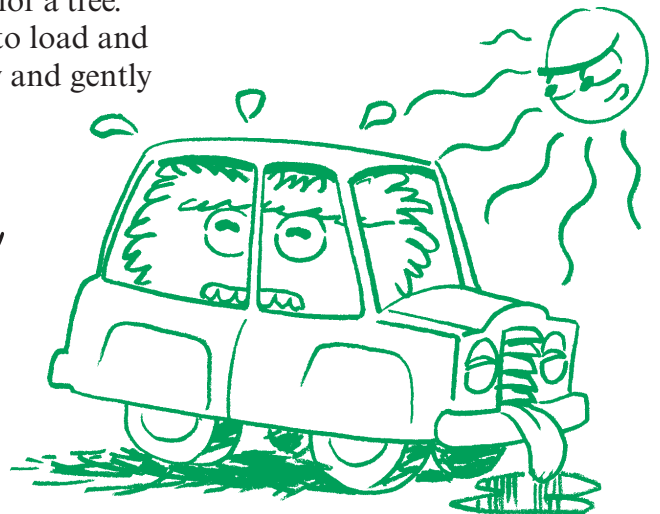
Although your tree may not look fragile, it is. Be very careful not to slam the car trunk lid on the tree trunk or branches. Don't let your tree be whipped by the wind when you move it in a car or truck. This can happen if the tree is put in the back of a truck, tied to the roof, or has leaves coming out of the windows or the car trunk. Wind causes the leaves to lose their water, which can kill them. If possible, ask the adults to cover the tree with a tarp and drive at a slower speed. Don't forget to take the cover off as soon as you get to the planting site.



Remind the adults not to park the car in the sun and leave the tree in the car. Ask them to park the car in the shade, instead. Think about how hot you would get sitting in a car in the sun. Hot temperatures are very bad for a tree.

Always remember to load and unload a tree carefully and gently from your car.

*It's Time to Plant!*



# Storing Your Tree at Home

By the way, if you are not going to plant your tree as soon as you get it home, here are some suggestions for you.

No unplanted tree should be kept in the sun. Keep trees in the shade of other trees or in another shady place until they are planted.

## **Balled-in-burlap**

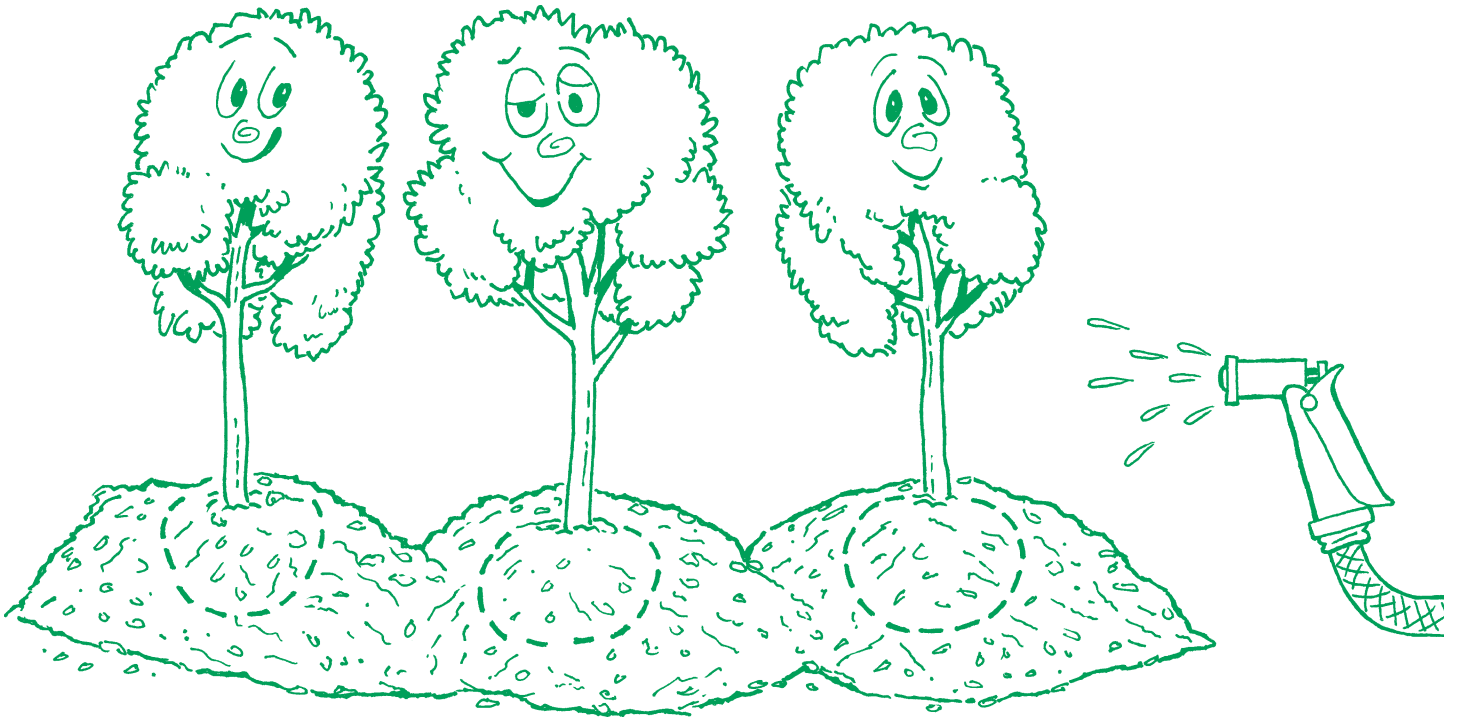
Bury the root balls of balled-in-burlap trees in mulch, and keep the mulch moist by watering. This keeps the soil and roots from drying out. Keep the root ball moist until you plant the tree.

## **Container-grown**

Container-grown trees dry out very quickly; keep the soil moist (but not soaking wet) until you plant the tree. Water it slowly just until water runs from the bottom of the container. Check it every day; many need water every day in the summer.

## **Bare-root**

Bare-root trees must be kept in the shade with their roots wrapped with moistened burlap or paper. You can spray water on the paper or burlap to keep it moist. Don't let the roots dry out!



*Stored trees need to be watered.*

# How Do You Plant a Balled-in-Burlap Tree?

First you need to dig a hole for the tree.



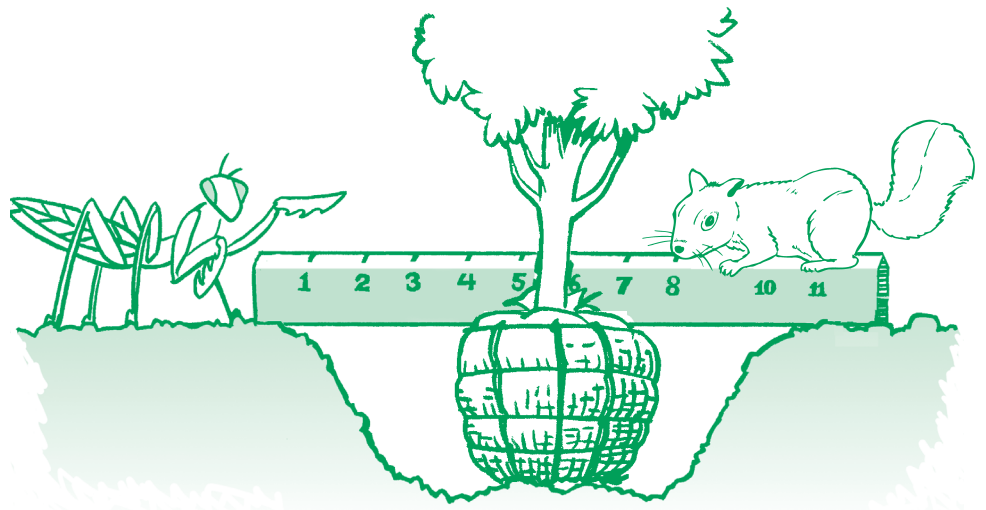
The hole should not be any deeper than the height of the **root ball**. This is very important. Do you know what the root ball is? It is the ball of soil that surrounds the roots of your tree.

Dig the hole for the tree so that the top of the root ball is level with or a little higher than the ground. Do you know why this is so important? If you dig the hole too deep and have to add soil to it to make the top of the root ball level with the ground, the soil you add to the bottom of the hole could settle. This would cause the root ball to go down and the tree to be planted too deep. Another reason not to dig a hole too deep is that any extra soil that you put on top of the root ball reduces the amount of oxygen and water getting to the roots. Only a thin layer of soil and mulch should be put on top of the root ball. We'll talk more about this later.

Here's a hint for you as you dig the planting hole. Instead of con-



stantly lifting the tree in and out of the hole to make sure that the hole doesn't get any deeper than the height of the root ball, you can use your shovel handle! Turn the shovel upside down and mark the height of the root ball on the handle. Then put the end of the shovel handle on the bottom of the planting hole to compare your mark with the depth of the hole. Keep doing this as you dig the hole, and when the mark is level with the surface of the ground, you have reached the right depth.





The planting hole should be at least two to three times wider than the diameter of the root ball. Measure the diameter of the root ball and multiply that number by two or three. The wider the hole, the better. Do you know why a wider hole will help the tree grow better? (Answer on page 36.)

Before you set the tree in the planting hole, remove any string that is tying the limbs together. Carefully lower the root ball into the center of the planting hole.

Make sure the tree is straight before you remove any string, burlap, or the wire basket. If any other straps, ties, or string are wrapped around the root ball or the tree's trunk, remove them.

If the burlap on your root ball is real, it can be left in the planting hole when you plant the tree. If the burlap on the root ball is artificial, it must be removed from the planting hole. Make sure there is no burlap showing above the soil when you plant the tree. This is im-

portant because any burlap that is above the soil can dry quickly and repel water. The roots could become too dry. You should remove the natural burlap from the top half of the root ball, but leave it on the lower sides and the bottom.

Sometimes there also is a wire basket around the burlap on the root ball. If your root ball has a wire basket on it, cut the top layer or two from the basket with wire cutters. Remove the cut part of the wire basket from the hole. Be careful not to cut yourself on the sharp edges of the wire.

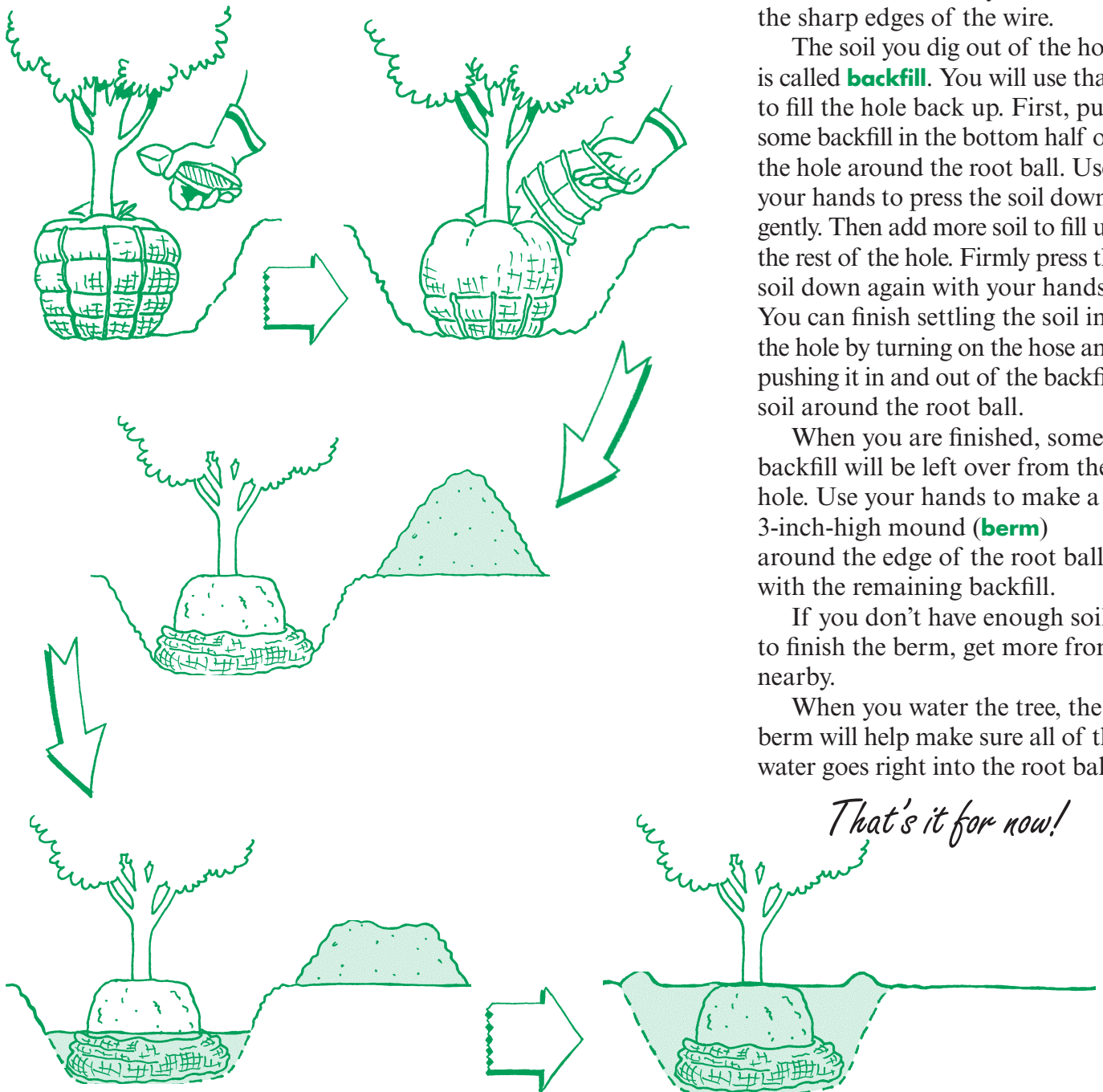
The soil you dig out of the hole is called **backfill**. You will use that to fill the hole back up. First, put some backfill in the bottom half of the hole around the root ball. Use your hands to press the soil down gently. Then add more soil to fill up the rest of the hole. Firmly press the soil down again with your hands. You can finish settling the soil in the hole by turning on the hose and pushing it in and out of the backfill soil around the root ball.

When you are finished, some backfill will be left over from the hole. Use your hands to make a 3-inch-high mound (**berm**) around the edge of the root ball with the remaining backfill.

If you don't have enough soil to finish the berm, get more from nearby.

When you water the tree, the berm will help make sure all of the water goes right into the root ball.

*That's it for now!*



*It's Time to Plant!*

# How Do You Plant a Container-Grown Tree?

First you need to dig a hole for the tree.



As with a balled-in-burlap tree, you should not dig the hole any deeper than the height of the root ball! This is very important. Notice that the height of the root ball is not the same as the height of the container. The height of the root ball is shorter than the height of the container because the nursery leaves space at the top of the container for water and fertilizer. Dig a planting hole for your container-grown tree just as you would for a balled-in-burlap tree.



*Now let's plant the tree.*

Carefully remove the tree from its container and set it in the center of the hole. Before you add any soil, make sure that the tree is straight. To fill the hole, follow the instructions in the "How Do You Plant a Balled-in-Burlap Tree?" section on pages 24 and 25.



# How Do You Plant a Bare-Root Tree?

Bare-root trees are planted differently from the other kinds of tree packages.



You have to keep the roots of a bare-root tree moist and shaded before you plant the tree.

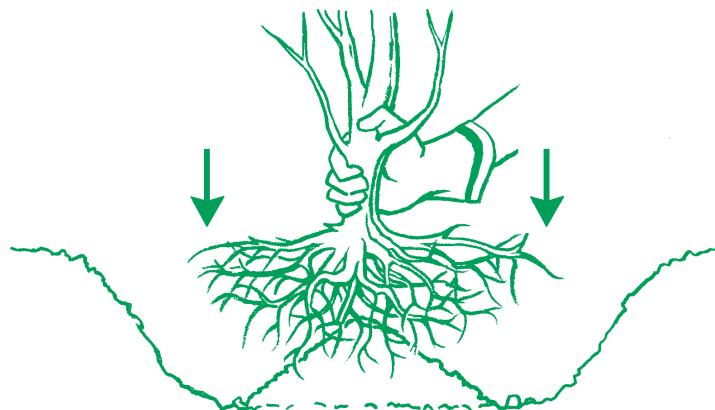
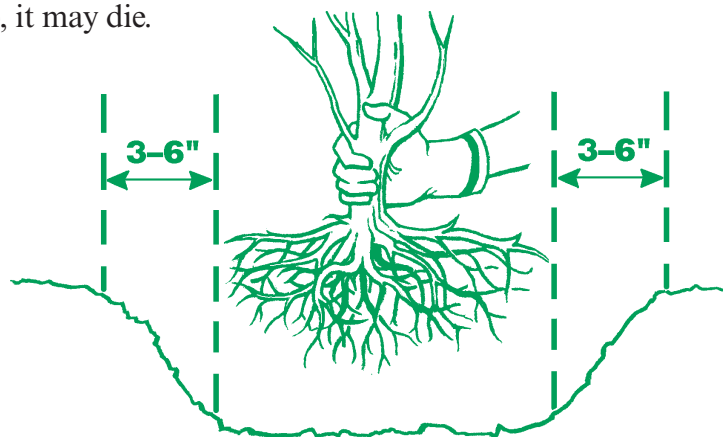
First, dig a hole that is wide enough for the roots to spread out without crowding each other. The hole should be about 6 to 12 inches wider than the roots are when they are spread out. Don't dig the hole too deep.

Next, make a cone-shaped mound of soil in the bottom of the hole. Set your tree on this mound and spread the roots around it. Since the roots are not covered by soil, they are very fragile. Be careful when you are handling the tree.

Then make sure that the topmost root on the tree is just below the top of the hole. Do you know how to find the **topmost root**? It is the first root you come to from the top down. Look carefully because this is very important. If you plant the tree too deep, it may die.

Hold the tree upright and add soil to the hole in layers. As you add each layer of soil, gently press it down with your hands. When the hole is half full, add water to settle the soil. Let the water drain, then check to make sure that the topmost root on the tree is still just below the top of the hole. If it settled deeper in the soil, pull the tree up slightly and rework the soil around the roots. Now you can finish filling up the rest of the hole. Add the soil in layers again, pressing down each layer with your hands.

The last step is the same as the other tree packages. Use your hands to make a 3-inch-high mound around the edge of the roots. When you water your tree, this "berm" will make sure all of the water goes right to the roots.



# What Can You Do to Start Your Tree Off Right?

You found your tree a good home, now you need to care for it and help it to grow properly.

Can you name the three most important things you can do for your new tree?

## 1. WATER

The most important thing you can do for your tree is to water it. How much water does your new tree need?

Your new tree should be watered often enough to keep the soil moist. In sandy soil, this might mean that you have to add water every week for the first 2 to 3 months if it doesn't rain. In a soil that drains poorly, watering once every 2 weeks may be enough. After the tree grows older, you can water it less often.

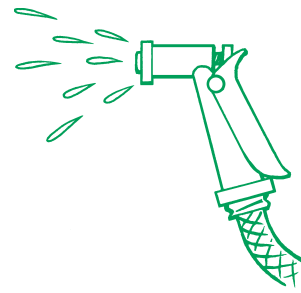
At each watering, your tree should get about 2 gallons of water for every inch of trunk diameter. Hold a ruler up to the tree trunk to figure out the diameter. For example, if you have a tree with a 3-inch trunk diameter, it should get 6 gallons of water. Water the tree slowly with a hose and move the hose around the top of the planting hole as you water. Pay close attention to the soil around your tree. If you think you are keeping the soil too soggy, don't water the tree as often. Be careful not to wash the soil away from the roots with the stream of water.

## 2. MULCH

The next most important thing to do is to put **mulch** around the base of your tree. Mulch is a tree's best friend. Do you know what mulch is made of? Actually, mulch can be made of many different things.

There are two types of mulch: **organic** (say *or-GAN-ik*) and **inorganic** (say *IN-or-gan-ik*).

The organic kinds of mulch you may see at the nursery are made of bark, wood chips, or straw. Inorganic mulch can be made of many different things. Gravel, pebbles, crushed stone, and shells all are examples of inorganic mulches. Organic mulch should be used around trees.



**Can you think of some reasons why it is good to put mulch around trees?**

- Mulch can help the soil hold moisture longer. Without mulch, water evaporates from the soil much faster.
- Mulch can keep weeds and grass from growing around your tree. Weeds and grass compete with the tree for water and nutrients.
- Mulch helps keep the soil cooler in warm weather and warmer in cold weather. This helps roots grow.
- Mulch keeps the lawnmower and weed trimmer away from your tree. Improper use of these tools can injure the bark, which is harmful to the tree's health.
- Mulch can add beauty to your new tree.

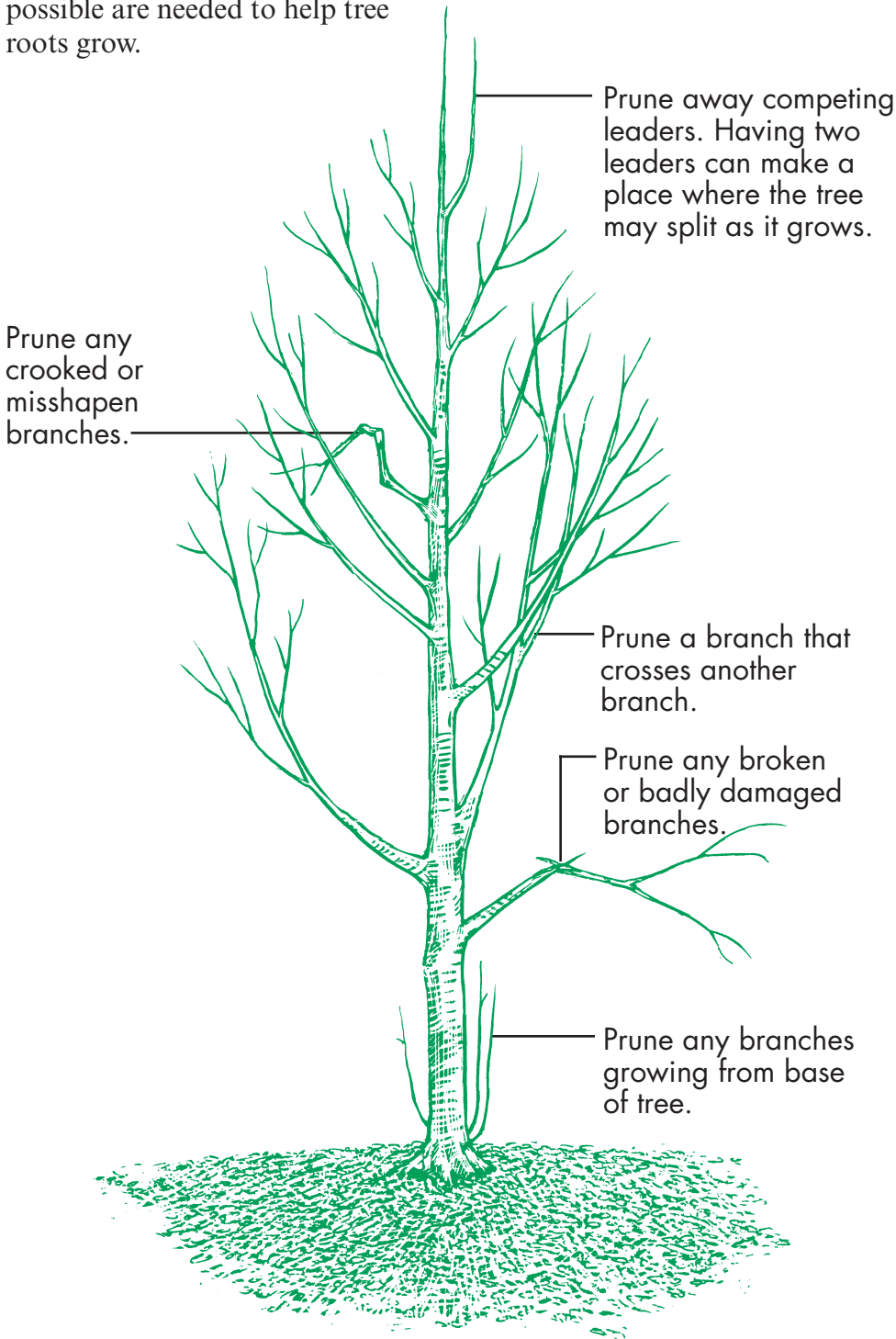
Put down the mulch in a circle 2 to 4 feet out from the trunk of the tree, and 2 to 3 inches deep around the tree. Then pull the mulch 2 to 3 inches away from the tree trunk. If mulch sits right on or next to the bark, it can cause the trunk to **decay**. Take a couple of steps away from your tree and admire your work.

*Good job!*



### 3. PROPER PRUNING

Do not prune newly planted and young trees too much. Remove only competing **leaders** and branches that are broken, unhealthy, dead, or not growing properly. As many branches as possible are needed to help tree roots grow.



### FERTILIZER

Fertilizer is not tree food. Trees produce their own food during photosynthesis. Trees do not need to be fertilized when they are planted, but you can fertilize your tree after it has grown for a year.

Most soils are fertile and have enough nutrients for your tree to grow; in addition, not all trees need to be fertilized. Whether or not you should fertilize and the amount of fertilizer you should use depend on several things such as the kind of tree you have, the type of soil in your yard, and the time of year. Your nursery or cooperative extension service can help you figure out whether or not you should fertilize.



# Answers

## Questions and Games

### PAGE 9

**Will the birdhouse move up as the tree grows taller?**

The birdhouse will not move up as the tree grows taller. Remember, a tree grows upward from the top and tips, so it won't carry the birdhouse up with it.

### PAGE 16

**Why is it important to visit your site at different times?**

Your site could be shady in the morning, but sunny in the afternoon.

### PAGE 19

**Do you know what burlap is?**

It's a heavy cloth made of big natural fibers that are loosely woven.

### PAGE 19

**Why is it important to keep the roots of bare-root trees moist at all times?**

Soil helps keep roots moist, but all the soil has been removed from bare-root trees. If we don't help the roots stay moist, they will dry out and die.

### PAGE 21

**Circle the trees you would choose to plant.**

Correct choices are 1 and 3.

### PAGE 25

**Do you know why a wider hole will help a tree grow better?**

You loosen the soil when you dig the hole. The tree's roots will grow better and faster into the loosened soil because more air and water are available.

### PAGE 14

#### CROSSWORD PUZZLE

