Lesson B5–3

Transplanting And Care Of Trees

Unit B. Plant Wildlife Management

Problem Area 5. Urban Forestry

Lesson 3. Transplanting And Care Of Trees

New Mexico Content Standard:

Pathway Strand: Natural Resources and Environmental Systems

Standard: IV: Employ knowledge of natural resource industries to describe production practices and processing procedures.

Benchmark: IV-A: Prepare presentations to describe how natural resource products are produced, harvested, processed and used.

Performance Standard: 1. Describe forest harvest techniques and procedures.

Student Learning Objectives. Instruction in this lesson should result in students achieving the following objectives:

1. Identify methods of harvesting trees.
2. Explain recommended tree planting techniques.
3. Describe post-planting care of trees.
List of Resources. The following resources may be useful in teaching this lesson:

Recommended Resources. One of the following resources should be selected to accompany the lesson:


Other Resources. The following resources will be useful to students and teachers:


List of Equipment, Tools, Supplies, and Facilities

Writing surface
Overhead projector
Transparencies from attached masters
Copies of student lab sheets
Landscaping spades
Burlap
Balling nails

Terms. The following terms are presented in this lesson (shown in bold italics):

Anti-transpirant
Balled and burlapped
Bare root
Chlorosis
Container grown
Guying
Mulch
Nursery
Root circling
Root zone
Staking
Transpiration
Interest Approach. Use an interest approach that will prepare the students for the lesson. Teachers often develop approaches for their unique class and student situations. A possible approach is included here.

Ask the students if they think any tree could be moved successfully. Some may say yes. Others might say that a huge redwood could not. Require them to provide support for their opinions. Pursue the topic by asking them what is required for a tree to survive transplanting. Compile the list of thoughts so all can see. At the close of the discussion present the objectives for this lesson.

Summary of Content and Teaching Strategies

Objective 1: Identify methods of harvesting trees.

Anticipated Problem: What methods are used to harvest trees?

I. Commercially available trees are propagated sexually or asexually and grown to a saleable size in a nursery. Nursery production might involve planting of young trees in fields or growing young trees in containers. When the trees reach an appropriate size they are harvested for transport in one of three ways.

A. Container grown plants are grown and sold in containers. The containers are most often plastic plant pots. Container grown plants are easy to handle and move. There is little damage to roots, and hence less stress on the tree during planting. Also, container grown trees are available for planting throughout most of the year. Growing trees in containers is especially suitable for evergreen and broadleaf evergreens.

B. Ball and burlapped (B&B) plants are grown “in the field” and are then dug with a soil ball around the roots. The soil ball is then wrapped in burlap or placed in a burlap bag to keep it from falling apart and to provide some root protection. Balling nails are used to hold the burlap in place. Twine is also used to secure the ball or the ball may be placed in metal baskets. Transplanting trees in this manner is a traditional method that has been used successfully for centuries. It is particularly suitable for larger specimens such as large evergreen or woody trees.

C. Bare root (BR) plants are grown “in the field” and are usually harvested when the trees are dormant. Soil is cleaned from the roots, roots are pruned, and the trees stored in a cool place. Care must be taken to prevent the roots of trees harvested in this way from drying out before planting. This method is suitable for many medium or smaller trees. Bare root plants are light weight and therefore, easier to ship than balled and burlapped stock.

Have the students read portions of Introduction to Landscaping: Design, Construction, and Maintenance related harvesting of trees as a homework assignment or during supervised study. Require students to take notes on the major points as they read the chapter. Follow the reading assignment with a class discussion.
on the methods of moving nursery stock. Use visual aids to outline key elements involved in tree production. Monitor students’ mastery of the material through the discussion.

Demonstrate how to ball and burlap a tree or have a profession conduct a demonstration. If possible, involve the students by having them dig trees. Set up a field trip to a local nursery during the time of year that trees are dug. Use transparency master TM: B5–3A—Packaging Of Trees to illustrate techniques as an overhead display or part of a larger PowerPoint presentation.

**Objective 2:** Explain recommended tree planting techniques.

**Anticipated Problem:** What are the recommended tree planting techniques?

II. The following techniques are common ways to plant, supported by the latest research.

A. Balled and burlapped trees are heavy and care should be taken to keep the soil ball intact.
   
   1. Dig the planting hole at least 12" wider than the soil ball. The larger the hole, the better. The hole should be deep enough so the top of the soil ball is level with the surface of the surrounding soil. A plant should never be planted deeper than it was originally. Deep planting limits exchange of soil gases that can lead to root rot and death. On occasion when the soil is poorly drained or wet, the soil ball can be planted a little higher than the surrounding soil.
   
   2. Once the hole has been checked against the size of the ball for depth, carefully place the plant in the hole with the burlap and twine intact. Handle the plant by the root ball.
   
   3. Once located, remove all twine, particularly if it is nylon twine. Twine can girdle the trunk and roots. Remove burlap as well. At minimum fold brown burlap down into the hole. Exposed burlap can wick water from around the soil ball. Green burlap is treated with preservative and must be removed. Plastic wrap must also be completely removed. Metal cages can remain.
   
   4. Position the plant with the best side facing toward the main viewing point. Position the tree so that it is perpendicular to the ground. Standing back and eye the tree. Holding a spade handle between the thumb and forefinger, letting it hang like a plumb, and lining one eye up with the trunk and the handle is one way to check the straightness of the trunk.
   
   5. Once in position, fill the planting hole half way with the same soil that came from the hole. Digging will have loosened it, making it easier for roots to penetrate. Carefully tap the soil down by stepping on it. This reduces air pockets and the amount of settling that will occur.
   
   6. Fill the hole with water and let it soak into the soil and soil ball.
   
   7. Complete the backfill process. Do not pack the soil by stepping on it.
   
   8. Pile loose soil in a circular mound towards the outside part of the hole. The mound creates a large saucer to hold water. Also as the soil settles over the next year, the mound will diminish.
9. Water the tree by filling the saucer.

10. **Staking** is performed to hold newly planted trees in place. It is not necessary for most smaller trees. Recent research has shown that unstaked plants grow roots for stability in response to wind, and the trunks are stronger. Medium size trees (over 6’ in height but less than 12’) may need staking to prevent the tree from tilting. When staking a tree, two or three long stakes should be driven into the ground outside the edge of the plant hole. Use wire to attach the stakes to the trunk. The wire should be wrapped to protect the tree’s bark from damage (pieces of old garden hose work well). Larger trees (over 12’ in height) may need guying. **Guying** is when cables are attached to the tree trunk, which are in turn anchored to three equally spaced ground stakes.

11. **Mulch** placed within the soil saucer will help to keep the soil moist and reduce weed growth. Some organic mulches include wood chips, pine needles, tree bark chips, shredded corn cobs, cocoa bean hulls, and peat moss. Inorganic mulches come from non-living substances and include such things as gravel, crushed stone, sand, brick chips, and shredded rubber. They are very durable and long lasting. Spread mulches 2 to 4 inches deep.

**B.** Containerized trees are handle much the same way as balled and burlapped trees.

1. Remove the tree from the container by inverting the plant, tapping the sides on a solid surface to release the plant, and then slide the soil ball out.

2. Check the plant for root circling. **Root circling** is when the roots have grown around the inside of the pot. If the tree has a mass of roots circling the inside of the container, the trees health may be in jeopardy. In those cases, loosen or cut the roots with a knife. Then spread them apart before planting. Generally, four or five vertical cuts from the top to the bottom of the soil ball are sufficient.

3. Follow the planting procedures described for balled and burlapped trees.

**C.** Bare root planting follows the same general guidelines as container grown plants.

1. Remove any wrapping material from around the plant’s roots and discard.

2. Dig the hole as deep as the longest root and at least 12” wider than the diameter of the root system.

3. Determine the depth at which tree should be planted by locating a stain on the bark or stem of a bare root that marks the level of the original field height. The tree or shrub should be planted at the same depth as it was growing in the nursery.

4. Once the hole has been dug, replace some of the tilled soil at the bottom center to form a cone. Rest the crown on this cone so the tree is at the proper depth. Carefully, spread the secondary roots out over the rest of the hole in their natural shape.

5. Backfill the hole until the hole half-filled, tamping the soil carefully to remove air pockets. Water and complete the backfilling. From this point follow the procedure as described for balled and burlapped trees.
D. Before the leaves emerge in the spring and in the fall are generally the best times to dig trees. There is less stress on the trees during those periods. However, the best time to dig trees depends largely on the species.

E. Plant trees in the spring when temperatures are cooler, rainfall is abundant, and plants are entering a phase of active growth. Fall is also a good time for transplanting. In either case the trees have an opportunity to establish some root growth before the heat of summer.

One of the concerns of newly planted trees is excessive loss of water vapor through leaves known as transpiration. Rapid root growth is important to absorb adequate water to replace water lost. Stress from water loss can be reduced. Trees can be sprayed with an anti-transpirant. Anti-transpirants cut down on water loss by sealing openings in the plant’s leaves. Anti-transpirants are especially effective with evergreen trees.

Have the students read the appropriate sections in Introduction to Landscaping: Design, Construction, and Maintenance. Have the students pursue additional information through the Internet concerning the transplanting of trees. Lead a class discussion on transplanting. During the discussion use transparency masters TM: B5–3B—Planting A Balled & Burlapped Tree, TM: B5–3C—Bare Root Vs. B&B Planting, TM: B5–3D —Staking And Guying Trees, TM: B5–3E—Establishing A Water Saucer At The Plant Base, TM: B5–3F—Mulching Trees, TM: B5–3G—Advantages Of Mulches, and TM: B5–3H—Mulches And Their Characteristics. These can be incorporated into a PowerPoint presentation. Require the students to take notes during the discussion. Use questioning during the discussion to determine the level of student understanding of the topic. Enhance the learning experience for the students by having them plant trees on the school grounds using LS: B5–3A—Planting A Tree as a guide.

**Objective 3:** Describe post-planting care of trees.

**Anticipated Problem:** How should trees be cared for after planting?

III. Most trees need little care once they become established. Watering can reduce stress and maintain tree health. Fertilizing can also boost tree health.

A. Water is the single most important factor in the growth and development of a tree.

1. For newly planted trees it is important to maintain a moist soil. Moisture encourages root development. Roots also need oxygen. Excessive water from poor drainage or watering can frequently fill soil pore spaces and eliminate oxygen. Under these conditions roots can be damaged and die. As a result it is important to monitor the level of soil moisture. In periods of warm dry weather it is advised to thoroughly soak the soil every 10 to 14 days provided the soil is well drained and is approaching dryness.

2. Established trees benefit from a good soaking of water every 2–3 weeks during periods of drought.

3. Water can be applied in a variety of ways. It is often enough to simply let water trickle out the end of a garden hose laid at the base of a tree until the soil is well moistened. Sprinklers, soaker hoses, watering bags, microirrigation and soil watering needles can also be used.
B. Most trees never need to be fertilized. They extract the nutrients they need from the soil.

1. Trees that show signs of stress of nutrient deficiency can benefit from fertilizer application. *Chlorosis* or the yellowing of leaves could be an indication of a nutrient deficiency.

2. The best time to fertilize is in the spring as buds begin to swell and in the fall when the leaves drop. It is important to deliver the fertilizer to the root zone of the tree. The *root zone* is the area where roots are found, generally within the top 2 feet of soil and 1 and a half times the width of the tree. Fertilizer can be applied by placing dry fertilizer in holes, using dry fertilizer spikes, injecting soluble fertilizer into the soil, broadcasting or spreading fertilizer on the soil surface, spraying soluble fertilizer on foliage, and implanting solid fertilizer in the tree trunk.

Review the content of the readings in Chapter 15 of *Introduction to Landscaping: Design, Construction, and Maintenance*. Require students to take notes on the major points presented during the discussion. Use transparency masters TM: B5–3I—Watering Trees, TM: B5–3J – Methods For Applying Fertilizer To Woody Landscape Plants, TM: B5–3K—Proper Placement Of Holes For Dry Fertilizer as visual aids to explain a watering and fertilizing technique. Monitor students’ mastery of the material through the discussion. Then, have the students put into practice concepts discussed that relate to care of trees. Invite an arborist or tree care specialist to speak to the class.

**Review/Summary.** Restate the student learning objectives at the conclusion of the lesson. Review the material that has been covered in class discussions, laboratory activities, and other learning experiences. Call on students to explain the content associated with each objective. Use their responses as the basis for determining any areas that need re-teaching. Questions at the end of the chapters in the textbook may also be used in the review/summary. Reinforce student learning by having students work with trees on the school grounds or off campus.

**Application.** Application can involve one or more of the following student activities using attached lab sheets:

- LS: B5–3A—PLANTING A TREE

**Evaluation.** Focus on student achievement of the objectives for the lesson when evaluating student performance. Use various evaluation techniques, such as student performance during oral review of the material, application of skills in the land lab setting, completion of the laboratory sheet, and a written exam. A sample written test is included with this lesson and can be adapted to local needs.
Answers to Sample Test:

**Part One: Matching**

1 = e, 2 = c, 3 = d, 4 = h, 5 = g, 6 = j, 7 = i, 8 = a, 9 = f, 10 = b

**Part Two: Completion**

1. Staking
2. anti-transpirant
3. 10 to 14
4. deeper
5. Before the leaves emerge in the spring, in the fall
6. spring, fall
7. Green
8. fertilized
9. 2 to 4 inches
10. every 2-3 weeks

**Part Three: Short Answer**

1. Container grown plants are grown and sold in containers. The containers are most often plastic plant pots. Container grown plants are easy to handle and move. There is little damage to roots, and hence less stress on the tree during planting. Also, container grown trees are available for planting throughout most of the year. Growing trees in containers is especially suitable for evergreen and broadleaf evergreens.

Balled and burlapped (B&B) plants are grown “in the field” and are then dug with a soil ball around the roots. The soil ball is then wrapped in burlap or placed in a burlap bag to keep it from falling apart and to provide some root protection. Balling nails are used to hold the burlap in place. Twine is also used to secure the ball or the ball may be placed in metal baskets. Transplanting trees in this manner is a traditional method that has been used successfully for centuries. It is particularly suitable for larger specimens such as large evergreen or woody trees.

Bare root (BR) plants are grown “in the field” and are usually harvested when the trees are dormant. Soil is cleaned from the roots, roots are pruned, and the trees stored in a cool place. Care must be taken to prevent the roots of trees harvested in this way from drying out before planting. This method is suitable for many medium or smaller trees. Bare root plants are light weight and therefore, easier to ship than balled and burlapped stock.

2. Fertilizer can be applied by placing dry fertilizer in holes, using dry fertilizer spikes, injecting soluble fertilizer into the soil, broadcasting or spreading fertilizer on the soil surface, spraying soluble fertilizer on foliage, and implanting solid fertilizer in the tree trunk.

3. 1. Dig the planting hole at least 12” wider than the soil ball.
2. Once the hole has been checked against the size of the ball for depth, carefully place
the plant in the hole with the burlap and twine intact.
3. Once located, remove all twine, particularly if it is nylon twine.
4. Position the plant with the best side facing toward the main viewing point. Position
the tree so that it is perpendicular to the ground.
5. Once in position, fill the planting hole half way with the same soil that came from
the hole. Carefully tamp the soil down by stepping on it.
6. Fill the hole with water and let it soak into the soil and soil ball.
7. Complete the backfill process. Do not pack the soil by stepping on it.
8. Pile loose soil in a circular mound towards the outside part of the hole to create a
large saucer to hold water.
9. Water the tree by filling the saucer.
10. Staking is performed to hold newly planted trees in place. It is not necessary for most
smaller trees. Medium size trees (over 6’ in height but less than 12’) may need stak-
ing to prevent the tree from tilting. Larger trees (over 12’ in height) may need guy-
ing.
11. Mulch placed within the soil saucer will help to keep the soil moist and reduce weed
growth.
Lesson B5–3: Transplanting Trees

Part One: Matching

Instructions. Match the term with the correct response. Write the letter of the term by the definition.

a. Balled and burlapped  
   e. Guying  
   i. Root zone
b. Bare root  
   f. Mulch  
   j. Transpiration
c. Chlorosis  
   g. Nursery

d. Container grown  
   h. Root circling

_____ 1. cables attached to the tree trunk, which are in turn anchored to three equally spaced ground stakes.
_____ 2. the yellowing of leaves.
_____ 3. plants are grown and sold in containers.
_____ 4. when the roots have grown around the inside of the pot.
_____ 5. where trees are planted in fields or in containers and grown to saleable size.
_____ 6. loss of water vapor through leaves.
_____ 7. the area where roots are found, generally within the top 2 feet of soil and 1 and a half times the width of the tree.
_____ 8. plants grown “in the field” and are then dug with a soil ball around the roots.
_____ 9. material placed within the soil saucer will help to keep the soil moist and reduce weed growth.
_____ 10. plants grown “in the field” and harvested without soil when the trees are dormant.

Part Two: Completion

Instructions. Provide the word or words to complete the following statements.

1. ________________ is performed to hold newly planted trees in place.
2. Stress from water loss can be reduced by spraying tree leaves with an ________________.
3. In periods of warm dry weather it is advised to thoroughly soak the soil around newly planted trees every ____________ days provided the soil is well drained and is approaching dryness.
4. A plant should never be planted ________________ than it was originally.
5. ___________________________ and _____________ are generally the best times to dig trees.

6. Plant trees in the _____________ or _____________ when temperatures are cooler, rainfall is abundant, and plants are entering a phase of active growth.

7. _____________ burlap is treated with preservative and must be removed.

8. Most trees never need to be _________________.


10. Established trees benefit from a good soaking of water _______________ during periods of drought.

**Part Three: Short Answer**

*Instructions.* Provide information to answer the following questions.

1. How do balled and burlapped, bare root and container grown trees differ?

2. How can trees be fertilized?

3. What are the major steps in planting a balled and burlapped tree?
PACKAGE OF TREES

Containerized

Bare root

Balled and burlapped

(Courtesy, Interstate Publishers, Inc.)
PLANTING A BALLED & BURLAPPED TREE

- Ball & Burlapped plant
- Planting hole a minimum of 12 inches wider than soil ball. Cut twine and push burlap back. Form a saucer at the base of the tree and fill with 3" of mulch.
- Tree supported by guying

(Courtesy, Interstate Publishers, Inc.)
BARE ROOT VS. B&B PLANTING

Bare root
Hole mounded on bottom

Balled and burlapped
Flat on bottom

(Courtesy, Interstate Publishers, Inc.)
STAKING AND GUYING TREES

Staking a tree.

Guying a tree.
ESTABLISHING A WATER SAUCER AT THE PLANT BASE

2' minimum

2"

(Courtesy, Interstate Publishers, Inc.)
MULCHING TREES
ADVANTAGES OF MULCHES

1. Suppress weed growth
2. Maintain uniform soil temperature
3. Increase water holding capacity of sandy soils
4. Increase aeration of heavy clay soils
5. Prevent and reduce soil erosion
6. Improve soil tilth
7. Reduce evaporation of soil moisture
8. Improve appearance
9. Promote root growth in upper two inches of soil
10. Release nutrients by increasing the breakdown of organic matter
# Mulches and Their Characteristics

<table>
<thead>
<tr>
<th>Name</th>
<th>Positive</th>
<th>Negative</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cocoabean hulls</td>
<td>• attractive dark brown color</td>
<td>• develop mold when wet</td>
<td>• planting beds</td>
</tr>
<tr>
<td></td>
<td>• absorb solar heat and warm the soil</td>
<td>• light—may blow away</td>
<td></td>
</tr>
<tr>
<td>Crushed corncobs</td>
<td>• good weed inhibitor</td>
<td>• reduces nitrogen level in soil</td>
<td>• vegetable garden</td>
</tr>
<tr>
<td></td>
<td>• retains soil moisture</td>
<td>• difficult for water to penetrate</td>
<td>• annual and perennial flower beds</td>
</tr>
<tr>
<td>Decorative wood chips</td>
<td>• long lasting</td>
<td>• may be expensive</td>
<td>• planting beds</td>
</tr>
<tr>
<td></td>
<td>• available in various sizes</td>
<td>• not a good source of organic matter</td>
<td></td>
</tr>
<tr>
<td>Grass clippings</td>
<td>• readily available</td>
<td>• form a mat</td>
<td>• vegetable gardens</td>
</tr>
<tr>
<td></td>
<td>• source of nutrients for the soil</td>
<td>• get moldy when wet</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• rot when spread thick</td>
<td></td>
</tr>
<tr>
<td>Gravel chips, crushed stone</td>
<td>• permanent covering</td>
<td>• does not suppress weeds</td>
<td>• highlight landscape features</td>
</tr>
<tr>
<td></td>
<td>• dark colors absorb solar heat and warm the soil</td>
<td>• expensive</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• heavy</td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td>Positive</td>
<td>Negative</td>
<td>Uses</td>
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<td>-------------</td>
<td>---------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>-------------------------------------------</td>
</tr>
<tr>
<td>Leaves</td>
<td>• add essential nutrients to the soil&lt;br&gt;• readily available</td>
<td>• some types pack flat&lt;br&gt;• can become soggy</td>
<td>• perennial beds&lt;br&gt;• vegetable gardens</td>
</tr>
<tr>
<td>Peanut hulls</td>
<td>• light weight&lt;br&gt;• decompose quickly adding organic matter to the soil</td>
<td>• may develop mold when wet</td>
<td>• good mulch for tomato plants&lt;br&gt;• annual and perennial flower beds</td>
</tr>
<tr>
<td>Pine needles</td>
<td>• light weight&lt;br&gt;• weed free&lt;br&gt;• easy to handle&lt;br&gt;• absorb little moisture</td>
<td>• unattractive to worms&lt;br&gt;• coarse in appearance</td>
<td>• good mulch for broadleaf evergreens</td>
</tr>
<tr>
<td>River gravel</td>
<td>• permanent cover&lt;br&gt;• absorb solar heat and warm the soil&lt;br&gt;• attractive appearance&lt;br&gt;• available in different sizes</td>
<td>• expensive&lt;br&gt;• does not suppress weeds&lt;br&gt;• heavy</td>
<td>• highlight landscape features&lt;br&gt;• planting beds</td>
</tr>
<tr>
<td>Shredded bark</td>
<td>• long lasting&lt;br&gt;• allows moisture to penetrate</td>
<td>• can be stringy and difficult to handle</td>
<td>• planting beds</td>
</tr>
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WATERING TREES

Watering Bag

Soil Watering Needle
METHODS FOR APPLYING FERTILIZER TO WOODY LANDSCAPE PLANTS

1. Dry fertilizer in holes
2. Soluble fertilizer injections
3. Broadcast spreading
4. Soluble fertilizer spraying
5. Solid fertilizers implanted in tree trunks
PROPER PLACEMENT OF HOLES FOR DRY FERTILIZER

Top view

Side view

(Courtesy, Interstate Publishers, Inc.)
LAB SHEET

PLANTING A TREE

Objective:

Students will follow approved practices in planting a tree.

Materials:

- Balled and burlapped, bare-root, or containerized tree(s)
- Round point shovels
- Mulch
- Water
- Knife

Procedure:

1. With approval of the school administration identify locations for planting trees.

2. Dig the planting hole at least 12" wider than the soil ball. The larger the hole, the better. The hole should be deep enough so the top of the soil ball is level with the surface of the surrounding soil. A plant should never be planted deeper than it was originally. On occasion when the soil is poorly drained or wet, the soil ball can be planted a little higher than the surrounding soil.

3. Once the hole has been checked against the size of the ball for depth, carefully place the plant in the hole with the burlap and twine intact. Handle the plant by the root ball.

4. Once located, remove all twine, particularly if it is nylon twine. Remove burlap as well. At minimum fold brown burlap down into the hole. Green burlap is treated with preservative and must be removed. Plastic wrap must also be completely removed. Metal cages can remain.

5. Position the plant with the best side facing toward the main viewing point. Position the tree so that it is perpendicular to the ground. Stand back and eye the tree. Holding a spade handle between the thumb and forefinger, letting it hang like a plumb, and lining one eye up with the trunk and the handle is one way to check the straightness of the trunk.

6. Once in position, fill the planting hole half way with the same soil that came from the hole. Carefully tamp the soil down by stepping on it.

7. Fill the hole with water and let it soak into the soil and soil ball.

8. Complete the backfill process. Do not pack the soil by stepping on it.
9. Pile loose soil in a circular mound towards the outside part of the hole. The mound creates a large saucer to hold water.

10. Water the tree by filling the saucer.

11. Medium size trees (over 6’ in height but less than 12’) may need staking to prevent the tree from tilting. When staking a tree, two or three long stakes should be driven into the ground outside the edge of the plant hole. Use wire to attach the stakes to the trunk. The wire should be wrapped to protect the tree’s bark from damage (pieces of old garden hose work well). Larger trees (over 12’ in height) may need guying. **Guying** is when cables are attached to the tree trunk, which are in turn anchored to three equally spaced ground stakes.

12. Spread mulch within the soil saucer 2 to 4 inches deep to help to keep the soil moist and reduce weed growth.