

A GUIDE TO SUCCESSFUL PRUNING

Pruning Deciduous Trees

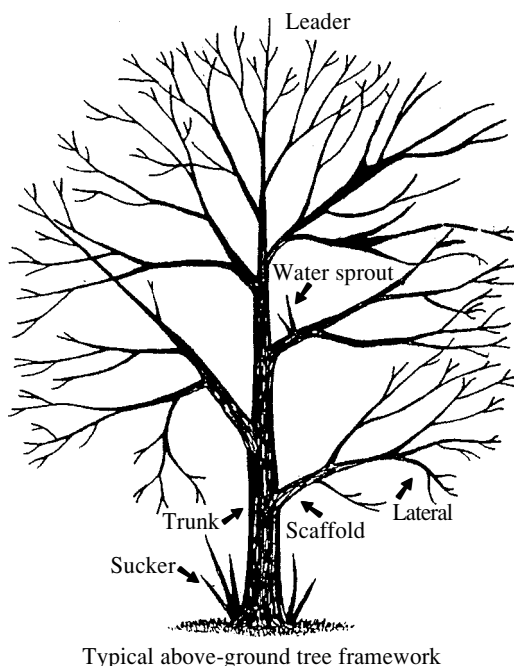
*Susan C. French and Bonnie Lee Appleton**

Anatomy of a Deciduous Tree

Trees that shed their leaves annually are classified as deciduous. Before getting out your hand pruners, learn some basics about the anatomy, or supporting framework, of a deciduous tree.

The above-ground part of a tree consists of the **trunk**, **scaffold branches**, and **lateral branches**. The **leader** is the vertical stem at the top of the trunk. Scaffold branches are primary limbs that form a tree's canopy. Secondary branches that emerge from scaffold branches are laterals. Growth comes from buds at the tips of branches (**terminal buds**), or along branch sides (**lateral buds**).

Water sprouts and **suckers** are two types of vigorous shoot growth generally considered undesirable. Water sprouts occur along branches, usually at pruning sites. Suckers grow from the trunk or roots.



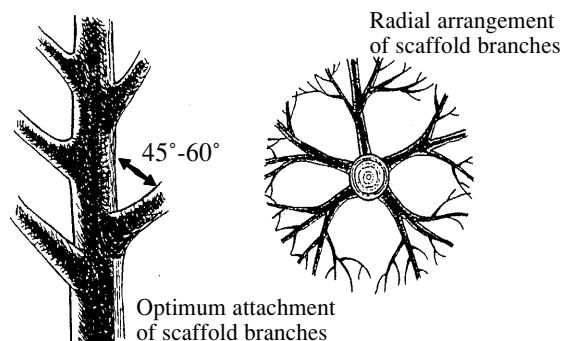
When pruning, picture how the branches are attached to the trunk. The **branch collar** is the swollen area of trunk tissue that

forms around the base of a branch. The **branch bark ridge** is a line of rough bark running from the branch-trunk crotch into the trunk bark, less prominent on some trees than on others. (See Publication 430-455).

What to Prune

Corrective pruning removes damaged wood and eliminates rubbing branches. When pruning dead or diseased branches, make cuts into healthy wood, well below the affected area. Disinfect tools between each cut with products such as "Lysol," "Listerine," or rubbing alcohol. Tests have shown that "Pine-Sol" and household bleach are highly corrosive to metal tools.

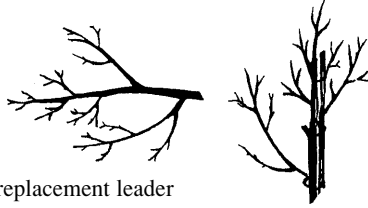
Remove rubbing or poorly placed branches as early as possible. To avoid splitting, make a thinning cut to remove one branch. Water sprouts and suckers always interfere with normal growth, so prune them off completely as they appear.



Young tree pruning is often preventive, eliminating potential problems before they occur. Select permanent scaffold branches with wide angles of attachment to the trunk. Narrow angles of branch attachment signal a point of future weakness. Be sure branches are evenly spaced (at least 10 inches-12 inches apart) and arranged radially around the trunk. Don't allow one limb to remain directly above another limb, shading it out. Train trees to single leaders and prevent any laterals from growing higher than the terminal leader, unless multi-stemmed specimens are desired.

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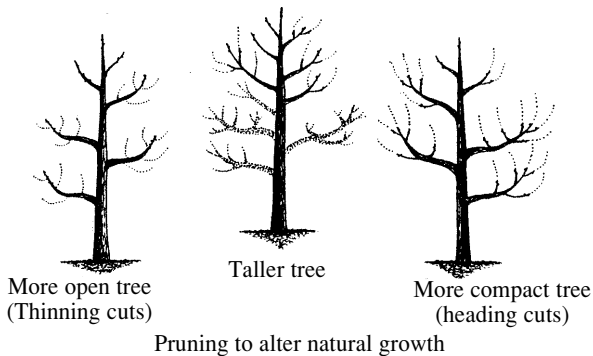
When a tree's leader is lost due to storm damage or disease, replace it by splinting an upper lateral on the highest scaffold to a vertical position. Prune all laterals immediately below the new leader. Use wood or flexible wire splints, removing them after one growing season.



Training a replacement leader

Allow some branches to grow below the lowest permanent scaffold branches. Leave these limbs for three to four years after planting, then remove them over the next two to three years. Temporary branches protect young bark from sun scald, add strength to the trunk, and help produce food.

Prune to alter the natural growth habit of trees. For a more open tree, leave terminal buds on all scaffold branches, but shorten or eliminate all laterals. For a taller tree, remove all branches up to a height of 8 feet as soon as the tree has three to four scaffold limbs above this height. For a more compact tree, shorten all scaffold branches by half, prune above outward-facing buds, and allow most laterals to develop.



Pruning to alter natural growth

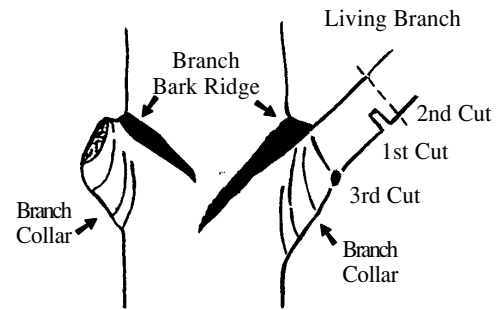
How to Prune

There are two basic types of pruning cuts: **heading cuts**, and **thinning cuts**. Make heading cuts to reduce the height of a tree by cutting back lateral branches and removing terminal buds. Heading cuts stimulate growth of buds closest to the cut. The direction in which the top remaining lateral bud is pointing will determine the direction of new growth. Don't use heading cuts (also called topping) on branches over one year old, to avoid stimulating unwanted water sprouts and suckers. Heading or topping also disfigures older trees and exposes large areas of bare wood to disease and insects.

Thinning cuts remove branches to their points of origin or attachment. When you prune a branch back to another branch, or prune a branch from the trunk, you are thinning. Thinning cuts stimulate growth throughout the tree, rather than in single branches, as do heading cuts. "Drop crotching" is a type of thinning cut that reduces a tree's size while allowing it to retain a natural shape. To drop crotch, select and cut higher branches

back to laterals at least one-third the diameter of the limbs being removed. Advantages of thinning include better air circulation, improved sunlight penetration, and less wind resistance.

Make pruning cuts correctly. For heading cuts on young branches, cut 1/4 inch above a lateral bud, sloping down and away from the bud. Avoid cutting too close, or steep, or the bud may die. When making thinning cuts to larger branches, cut outside the branch collar at a 45 to 60 degree angle to the branch bark ridge. Leave the branch collar intact to help prevent decay from entering the trunk.



Branch bark ridge and branch collar

Whenever removing limbs greater than 1 inch in diameter, use the three-cut method to avoid tearing bark. First, about 12 inches from the trunk, cut halfway through the limb from the underside. Second, about 1 inch past the first cut, cut through the limb from the top side. The limb's weight will cause it to break between the two cuts. Make the third cut outside the branch collar, as described earlier. Use a handsaw to provide greater control.

Don't coat pruning cuts with tree paint or wound dressing, except in special circumstances. Some tests have shown wound dressings are beneficial when pruning trees that are susceptible to canker or systemic disease (oak wilt and Dutch elm disease). Tree paint won't prevent decay or promote wound closure, but may prevent disease-carrying insects from entering tree wounds. The best way to prevent oak wilt and Dutch elm disease, however, is to avoid pruning oaks and elms in May and June when insects are more active.

When to Prune

Pruning at different seasons triggers different responses. Late winter or early spring, before bud break, is a good time to prune many species because callus tissue forms rapidly. When pruning flowering trees, take care not to cut off flower buds. Some trees, such as cherry, plum, and crabapple, form buds on old wood. Others, such as crape myrtle, bloom on new wood.

Summer pruning tends to suppress growth of both suckers and foliage. Late summer or early fall pruning causes vigorous regrowth, which in some species may not harden off by winter, leading to possible cold damage. Whenever unexpected damage from vandalism or bad weather occurs, prune immediately. (See VCE Publication 430-460, *Deciduous Tree Pruning Calendar*)