

Tree Pruning Guide



This guide is a combination of work by: the California Department of Forestry and Fire Protection, the National Arbor Day Association, and the University of California, Agriculture & Natural Resources

Finding proper care for your tree is important. Your best assurance of obtaining professional work is by using the services of an arborist certified by the International Society of Arboriculture. Our City Forest can also provide a list of tree care companies and certified

arborists; contact us at (408) 99-TREES. For more information on how to prune young trees, sign up for a Tree Amigo class or attend a pruning workshop. This guide, and all services are provided free of cost by Our City Forest, a non-profit 501(c)3 organization.



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The type of pruning your tree gets is critical to its health, longevity, safety, and appearance. Proper pruning is important because trees add beauty and enhance property value, up to 27%. Improperly pruned or neglected trees can result in: suffering tree health, lessened property value, increased potential hazards and liability, and increased long-term maintenance costs.

This guide is intended to describe how young trees should be pruned. We are not encouraging tree owners to prune large mature trees themselves. Pruning is both difficult and dangerous, it's best left to experienced arborists.

Reasons to Prune/Train Young Trees

Source: Training Young Trees for Structure & Form

Improved structural strength. By removing defects such as weak branch attachments and codominant stems, trained trees are structurally stronger than untrained trees. Structurally stronger trees have a lower potential for failure.

Reduced maintenance costs. Trained trees require less maintenance when they are mature. Typically, trained trees have fewer branches than untrained trees, which means less pruning. In addition, well-spaced branches provide easier access for arborists, and pruning can be accomplished in a shorter period of time. Finally, trained trees may not have structural defects that require correction by cabling, bracing, canopy thinning, and codominant stem removal, which avoids substantial costs.

Increased tree longevity. Simply by remaining intact longer, trained trees serve as functional components of the urban forest for more time than untrained trees. Trained trees have a lower potential for structural failure than untrained trees. Failed trees and hazardous trees need to be removed. Trees that have sustained substantial partial failure (limb or stem failure) often need to be removed because they are hazardous or unsightly.

Five Key Steps for Pruning Young Trees

Source: Training Young Trees for Structure & Form

- 1 Remove broken, dead, dying, diseased, or damaged branches.** Inspect the canopy and remove or cut back these branches.
- 2 Select and establish a central leader.** There should only be one leader. Select the strongest and most vertical stem as the leader and remove or cut back competing stems.
- 3 Select and establish the lowest permanent branch.** Look for a well-attached branch at the desired height (determined by location and use), and remove closely-spaced, competing branches. The diameter of the lowest permanent branch should be no more than one-half that of the central leader or trunk at the point of attachment. Smaller temporary branches should be left close to the lowest permanent branch. Larger temporary branches should be pruned back to three to four buds.
- 4 Select and establish scaffold branches.** Look for well-attached branches above the lowest permanent branch that are no more than one-half the diameter of the central leader. Scaffold branches should be well spaced both vertically and radially. Vertical spacing should be 18 inches or more for large trees and 12 inches for smaller trees. Radial spacing should be allowed for balanced branch distribution around the central leader. Leave small branches close to scaffolds as temporary branches and cut back or remove larger branches.
- 5 Select temporary branches below the lowest permanent branch.** Some or all the branches below the lowest permanent branch can be retained as temporaries. If possible, leave the smallest branches and cut back or remove the largest branches.

How Much to Prune?

Generally, no more than 25% of the canopy of a young tree should be removed in any one year (This varies for different tree species). In some cases, removing only 5 to 10% will be sufficient to develop structure and form. With particularly fast-growing trees or trees with significant defects, over 25% may need to be removed. You can reduce the height of a large tree by up to 30%. It is important that approximately 1/2 of the trees foliage originate in the lower 2/3 of the tree.

Tree Location and Training

A tree's location is an important consideration for Step 3, "Select and establish the lowest permanent branch." The height of the lowest permanent branch is determined by both the location and use of the tree. Trees planted along streets or in parking lots need to allow clearance for vehicles. For street trees, many cities require an 8-foot (2.4 M.) clearance above the sidewalk and 14-foot (4.3 M.) over the street. Trees in parking lots need a 12 to 14-foot (3.7 to 4.3 M.) clearance. Trees in parks and yards have variable clearance requirements. If access is not needed, or if the tree is used for wind protection or as a visual screen, then the lower branches should be retained.

Conifers

The Five Steps can be applied to conifers, but with some modifications. Steps 1 and 2 are important. Damaged branches and competing leaders need to be removed. Step 3 may be important depending on the tree's location. If clearance is needed for vehicles, equipment, or people, then Step 3 should be applied. Step 4 is not as important for conifers as it is for hardwood species. In many cases this step can be skipped entirely. Look for and remove branches with weak attachments, however. Step 5 is needed if a lowest permanent branch is established.


Field Practice

It is very important to practice the Five Steps before applying them. Review each step with a helper before making cuts. Tie string or ribbon around the leader, the lowest permanent branch, and scaffolds. Discuss reasons for your selections, and step back to look at potential impacts on tree form and size. After you are confident of your selections, then make your cuts. Again step back from time to time to assess impacts on tree form. Remember that species and conditions vary considerably, and you will always need to use good judgment. Understand the reasons for the Five Steps, and then make reasonable adjustments in the field.


When to Prune?

Source: *Tree City USA Bulletin #1*


When to prune depends to a large extent on *why* you prune. Light pruning and the removal of dead wood can be done anytime. Otherwise, here are some guidelines, but recognizing that individual species may differ.


 **Winter** Pruning during dormancy is the most common practice. It results in a vigorous burst of new growth in the spring and should be used if that is the desired effect. It is usually best to wait until the coldest part of winter has passed. Some species, such as maple, walnut, and birches, may "bleed" when sap begins to flow. This is not harmful, and will cease when the tree leafs out.

Spring At the latest, prune well before the buds swell and new leaves begin to develop.

 **Summer** To direct the growth by slowing the branches you don't want; or to slow or "dwarf" the development of a tree or branch, pruning should be done soon after seasonal

growth is complete. The reason for the slowing effect is that you reduce the total leaf surface, thereby reducing the amount of food manufactured and sent to the roots for their development and next year's growth of crown.

 **Fall** Because decay fungi spread their spores profusely in the fall and healing of wounds seems to be slower on fall cuts, this is a good time to leave your pruning tools in storage.

 **Flowering Trees** If your purpose for pruning is to enhance flowering: 1. For trees or shrubs that bloom in summer or fall on current year's growth (e.g., crape myrtle), prune in winter. 2. For trees that bloom in spring from buds on one-year-old wood (e.g., dogwood and flowering fruit trees), prune when their flowers fade.

Caution: In some areas of the country, diseases or insect occurrence may be affected by the time of pruning. Check with an arborist or nursery operator to see if there are any local problems.