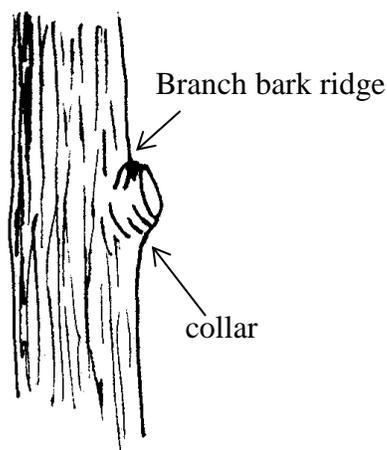


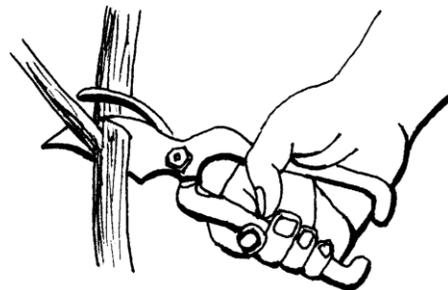


KEYS TO GOOD PRUNING

- Make safety a number one priority! A major job on a large tree should be done by a certified arborist.
- Begin your visual inspection at the top of the tree and work downward.
- Identify the best leader and lateral branches (scaffold limbs) before you begin pruning and remove dead or damaged branches before pruning for form.
- Don't worry about protecting pruning cuts. Wound or tree paint is not only unnecessary, but evidence shows that it does not prevent or reduce decay. In fact, wound or tree paint can increase the occurrence of decay by trapping moisture in.
- Keep your tools sharp and clean. When pruning diseased plants, sterilize blades and saws with a cleaning solution of Lysol, Pine-sol or diluted bleach. Some diseases, like Fireblight, are extremely contagious, so sterilizing between each cut is recommended.
- One-hand pruning shears with curved blades work best on young trees.
- When simply shortening a small branch, make the cut at a lateral bud or another lateral branch. This is referred to as heading back. Favor a bud that will produce a branch that will grow in the desired direction, usually outward. The cut should be sharp and clean, and made at a slight angle about 1/4 inch beyond the bud.



Cut outside
branch ridge and collar



One-handed pruning shear

WHEN TO PRUNE

Timing of pruning 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, recognizing that individual species may differ.



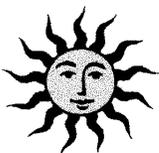
Winter (January-March)

Pruning during dormancy (after leaves fall and before new growth appears) is the most common practice. It results in a vigorous burst of new growth in the spring. Some species, such as maples, walnuts, and birches may “bleed,” or drip large amounts of sap, in the spring. This is not harmful to the tree and will cease when the leaves emerge.



Spring (April-May)

Pruning cuts will result in quick and often excessive regrowth. Spring flowering shrubs such as lilac, forsythia, and spirea should be pruned after blooming. Avoid pruning spring flowering shrubs in fall or late winter, which will result in decreased bloom. Pruning between the time when leaf buds start to swell and when leaves reach their mature size and color can disrupt growth hormones in the tree leading to more water sprouts and very vigorous regrowth.



Summer (June-August)

To direct the growth by slowing the branches you don't want, or to “dwarf” the development of a tree or branch, prune soon after seasonal growth is complete. Another reason to prune in summer is for corrective purposes. Limbs that hang down too far under the weight of leaves can be reduced. Be aware that late summer pruning may stimulate new tip growth that will not have time to harden off before cold weather.



Fall (September-December)

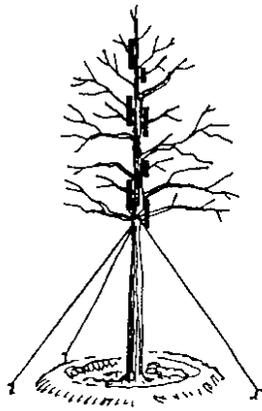
Pruning cuts made in September and early October may result in a flush of vegetative growth that will be too tender to survive the winter. Generally it is safe to prune after the leaves fall from a plant.

Note: For flowering trees or shrubs that bloom in summer or fall on *current* year's growth, prune in winter. For trees and shrubs that bloom in spring from buds on one-year-old wood, prune when their flowers fade in late spring or early summer.

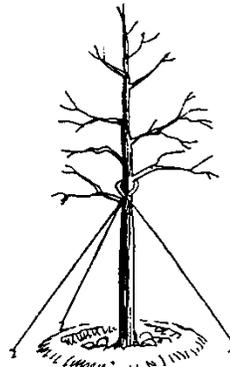
PRUNING FOR SHAPE

Thinning and Spacing

Many trees benefit from some thinning - removing a portion of the limbs that compete for space and light. Don't remove more than $\frac{1}{4}$ of the leaf canopy; if it needs more pruning, come back and complete the job the following season. Do not prune any tree the same year it is planted or moved.



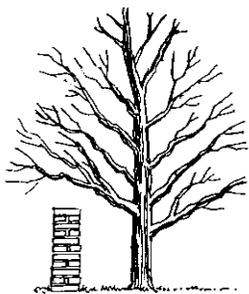
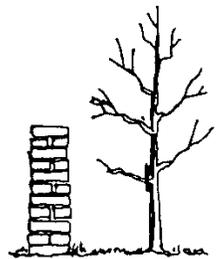
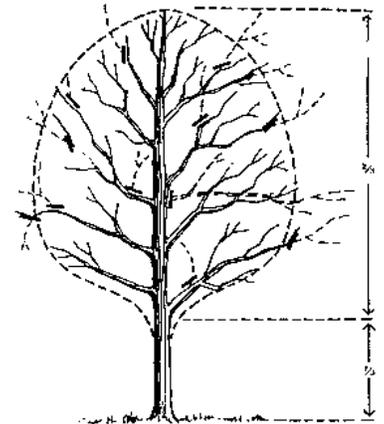
Before pruning



After pruning

Ingrowers, Protruders and Crown Ratio

When a crown is dense, look for limbs that turn inward, and those that extend beyond the “natural” outline of the crown. Prune at the trunk or to a lateral branch. Over-pruning can damage or even kill your tree. Always maintain at least $\frac{3}{4}$ of the tree as the live crown.

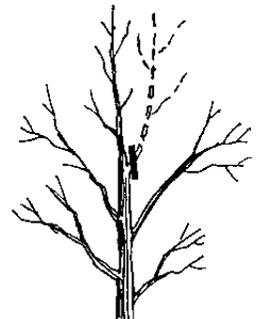


Function

Try to imagine what the tree will look like when it is larger. If a limb is headed toward trouble (the house, walkway, sign, etc.) remove it as early as possible in the life of the tree. Closure of the wound will be more complete when the limb is small. Remember, limbs do **not** move upward on the tree trunk as a tree grows in height. To “lift” (raise) the crown, remove lower limbs over several years. No more than $\frac{1}{4}$ of the live crown should ever be removed in a single cutting.

Double Leaders

Protect the leader from competition. In trees with co-dominant leaders, remove the one with a crook or other defects, or that creates a lop-sided appearance.

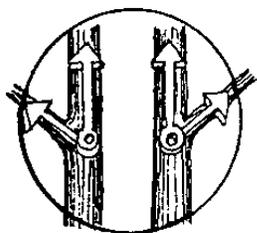


PRUNING FOR STRENGTH

The first guide to pruning a young shade tree is to have a clear understanding about what pruning can do for the tree - and for you. For example, we know to prune modestly - *if at all* - when transplanting a new tree. An immediate objective must be to strengthen and expand the root system that is usually reduced by 80-90% during transplanting. To meet this objective, as much as possible of the leaf surface (the tree's food factories) needs to be left intact. Remove only damaged or dead limbs. Pruning with strength as the objective is the best way to avoid weak branches later on and to prevent expensive corrections that will otherwise become necessary.

Branch Angles and Size

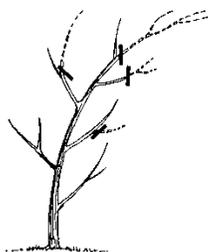
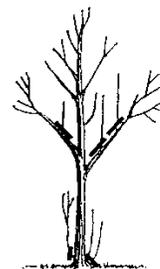
Narrow angles signal a point of future weakness, whether in the trunk or crown. The reason is that as the two branches grow, neither has sufficient space to add the wood needed for strength. Instead, they grow *against* each other. The effect is similar to hammering in a wedge. To prevent this and the expensive problems that are sure to follow, simply remove one of the two branches.



For strength, the ideal branching angle approximates 10 or 2 o'clock positions from the main trunk. Lateral branches should be no more than 1/2 to 3/4 the diameter of the trunk. As the trunk grows, it will strengthen the joint by adding wood around the branch - like a dowel in a chair leg.

Watersprouts and Suckers

These "parasite" sprouts can occur at the base or inside the crown. They are rapidly growing, weakly attached, and upright. Usually they use more energy than they return to the tree. It is best to remove them as soon as possible when it is obvious they are vigorous sprouts.



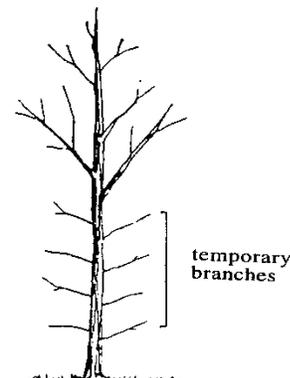
Center of gravity

Young trees deformed by wind may be corrected by pruning. Move the tree's center of gravity to a point more central over the trunk by cutting back the leader and laterals on the downwind side (or direction of lean) to more upright branches. If the problem is slight, a firm stake set close to the trunk and tied to the tree for one growing season may be a less invasive solution.

Temporary Branches

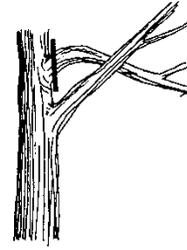
Branches below the lowest permanent branch can protect young bark from injury from the sun and add taper and strength to the trunk.

Particularly in lawn plantings where lower limbs do not block passage or tempt vandals, the limbs may be left for 3-4 years after planting. Then remove them over the next 2-3 years, beginning with the larger temporaries. Don't let the temporary branches become large and vigorous. Shorten the larger temporary branches or remove vigorous temporaries if less vigorous ones can be selected.



Rubbing Branches

Branches that rub against one another cause wounds, decay and notches. Remove the least desirable branch.



Proper Pruning Cuts



proper cut



too close to bud



too far from bud/poor angle



too far from bud