



Pruning Trees & Shrubs

How do I prune that?

Questions about pruning top our list. Many people are nervous about pruning because they are afraid that they are going to ruin their plant or fail to get it trained the way they want. Part of the issue is a lack of knowledge about plant physiology and plant responses to pruning, but another part of this issue is the lack of clear objectives for the function of the plants in your landscape.

First, ask yourself why are you pruning -

Everyone has their own idea of how to correctly prune a particular plant. However, more than one type of pruning for the same plant may be correct depending on your goals for the plant. Ask yourself what you are trying to accomplish with the plant? Plants can be pruned for many reasons such as the following:

- to direct growth
- to influence fruiting & flowering
- rejuvenation
- to maintain plant health and appearance
- safety
- control size

Ask yourself if your pruning goals are attainable as well as sustainable? Can the plant be reasonably maintained in the landscape, and will the results be rewarding to the landscape as a whole? Sometimes it's best just to relocate or replace a plant that isn't performing the way you want it to.

Pruning is Wounding

A pruning cut is an injury to the plant. This injury evokes a chemical response within the plant. The type of plant, the time of year, the health of the plant, where the pruning cuts are made, how aggressive the pruning is, and how the pruning is accomplished all weigh on the response within the plant which begins the moment a pruning cut is initiated. This response, along with the plant's ability to respond, determines the result you get for your efforts. The care with which you execute this task may determine the longevity of the plant. The first reaction to a cut is compartmentalization. Woody plants have no ability to heal, and cut tissue is not repaired. Injured tissue is sealed or compartmentalized internally and externally by the plant and other entities. New tissue is formed externally over the wound in the form of "woundwood" or callus. An injury can cause changes in the vascular chemistry below or above the wound. This may stimulate other processes to occur such as differentiation or adventitious budding. In general, if you remove lateral (side) shoots, you will stimulate terminal growth. If you remove ends of branches (terminal growth), you will stimulate lateral or side branching.

Timing of Pruning

Timing of pruning is based on your pruning goal, and capitalizes on managing the energy level of the plant. For invigorating pruning, i.e. for roses, other shrubs, and flowering trees, pruning is best done in the winter when plants are dormant and still have most of their energy stored for the next year's use. This is also good for rejuvenative pruning. The ideal time for dormant pruning is in late winter around February and early March. For pruning designed to control size and retard growth, for example on a rambunctious shrub, prune after budbreak but prior to full leaf expansion. This will retard shoot growth. Flowering is often a consideration when pruning. When pruning for flowers, time pruning so as to avoid cutting away flowering wood. On plants that flower in winter or spring, such as azaleas, you want to preserve the 1 year old wood that bears the flowering buds by pruning **after** flowering. Plants that flower on new wood are those that flower in summer or fall. These should be pruned when the plant is dormant

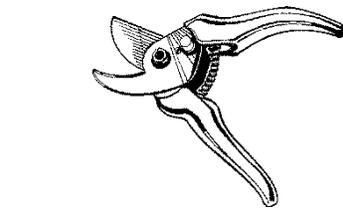
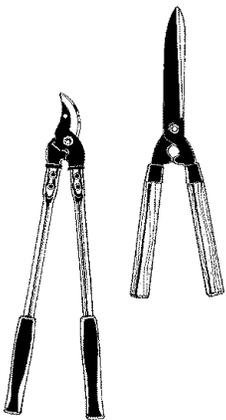
Pruning Shrubs

Hand pruning is almost always more desirable than shearing unless you are creating formal hedges or topiary. The two major types of shrubs, other than many conifers, are broadleaved evergreen shrubs and deciduous shrubs. Most broadleaved evergreens are symmetrical and slow-growing. Because they have new growth from terminal (end) buds, they develop a dense outer shell of foliage. This means that they often do not require anything but minimal pruning. Many deciduous shrubs, on the other hand, are not self-maintaining and need some work. They often have irregular form, rapid growth, and new growth that comes from the base of the plant. Without pruning, they can become overgrown, have poor flowering, and become unkempt looking. Maintain them by removing unwanted branches at the base of the plant, and removing 25% to 33% of the older branches every 1 to 2 years. The best techniques for this are "thinning" and "heading back". "Thinning" is simply removing an entire branch at the base. Usually, weak, diseased, damaged, or dead branches are selected, or a branch that crosses another, more desirable branch, and rubs against it. On certain plants, such as nandina, older branches or canes are removed to make way for newer more floriferous branches. "Heading back" is cutting back a branch to a bud or another branch. This will reduce height, width, and control growth but maintain a natural form and avoid the "green meatball" syndrome. A third type of pruning is rejuvenation in which you cut back all growth to 12 inches or less. This can be done on old, unproductive shrubs or overgrown plants and also on plants with "bare legs" in order to stimulate foliar growth from the base of the plant. Do rejuvenative pruning right before bud break to encourage quick re-growth. For slow re-growth, rejuvenate later in spring, around mid-May. Rejuvenation should be done only on shrubs and can only be done on plants that have latent buds. A latent bud is a bud that is not currently producing growth (and may never do so except when stimulated as with pruning). Plants that cannot be rejuvenated include: juniper, boxwood, and hybrid rhododendrons.

Cutting Techniques

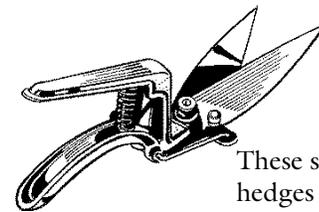
- Cut back to 1/4" above a bud
- Cuts should face away from buds
- Make cuts on a 45° angle
- Cut above an outward facing bud to direct growth away from the center of the plant
- See below for types of pruners to use for different situations

Conifers such as pine, spruce, and fir cannot be pruned as other plants except to correct form and remove dead, damaged, or diseased limbs. To control size on conifers, the new growth must be pinched back. In spring, new growth emerges in tight slender bunches that have not expanded yet. These are often called "candles" because of their slender, tapered appearance. Break off candles or pinch them back partially before the needles expand.

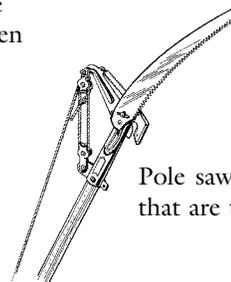


Use these hand pruners for pruning small branches and canes. Select pruners where the blades bypass each other (bypass pruners) when cutting instead of closing against each other blade to blade (anvil pruners).

These loppers are good for larger branches and canes up to 1" thick. For larger branches use a pruning saw.



These shears are handy for hedges and large formal shrubs.



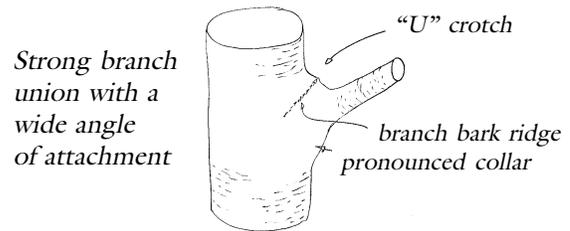
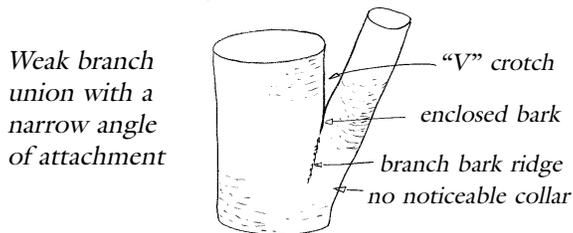
Pole saws help you reach smaller branches that are too high to reach by hand.

Pruning Trees

The first guideline to pruning trees is never top a tree. Topping a tree is severely cutting limbs larger than 3 inches in diameter to stubs with the tree's crown so as to remove the normal canopy and disfigure the tree. This practice shocks the tree, encourages starvation of the tree, and encourages rapid re-growth which is usually what one is trying to avoid when topping. It also promotes insect infestation and disease, and is just plain ugly. New limbs that re-grow are often weakly attached causing hazards. Topping can ruin a valuable asset to a property or even kill the tree.

Building a better tree:

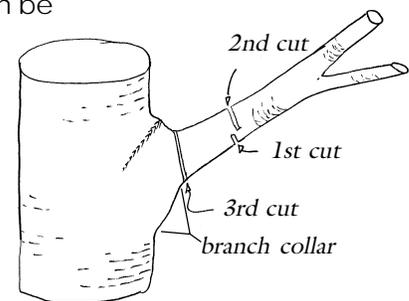
1. In the first year after planting, prune ***if necessary*** to establish a central leader. Remove any dead, damaged, diseased, or crossing branches.
2. In the next 2 to 5 years, select scaffold branches. Look for and keep branches that have a wide angle of attachment to the trunk. A minimum of 45° to 60° is what you're looking for, but up to 90° is even better.



Vertically space scaffold branches to 12 to 18" apart. Branches should be spaced radially around the trunk to keep 5 to 7 branches per 360°. Branches that should be removed during the 2nd and 5th year of life include those that are too low, outgrown leaders, branches with a sharp angle of attachment, and those that grow within 4-6" of a scaffold branch.

The best time to prune trees is from February to budbreak. Avoid major pruning between budbreak and leaf expansion, and between August and leaf fall. Light or corrective pruning can be undertaken almost anytime. To properly remove larger branches and minimize damage to limbs, perform the three step cut as illustrated below:

1. First undercut 1/3 of the limb.
2. Then, topcut further out on the limb until the limb snaps off cleanly.
3. Make the final collar cut making sure to preserve the branch collar for best wound closure.



When to Prune

*Here are some guidelines for what to prune and when. In addition to the notes on what part of the plant to prune, always prune away any branches that are dead, dying, or diseased. Crossing branches that rub against each other are also candidates for removal of one of the branches so that the other may grow unobstructed. Refer to the **Cutting Techniques** section of page 3 for details on proper cuts.*

Azalea - Prune late spring or summer after flowering. Remove long shoots rising above the rest of the foliage. Other than that, most require little pruning unless they are to be trimmed closely into a dense, formal shrub. These should be tip-pruned after flowering to promote dense growth. Shears can be used for this.

Boxwood - If keeping as a formal hedge or topiary, prune young plants hard in spring to encourage bushy growth. On established hedges and topiaries, prune in mid to late summer to trim lightly. Informal shrubs require little pruning. Trim long shoots to keep plants at desired height.

Butterfly Bush - Prune in late winter or early spring. Prune hard to 15-18" above the ground.

Camellia - Requires little pruning except occasionally to shape, if needed. Prune in spring after flowering.

Clematis - Please see our handout on **Pruning Clematis**.

Crepe Myrtle - Prune in late winter or early spring. Gently thin branches growing toward the interior. If training into a tree, thin out root suckers coming up from the base to encourage 1-5 main stems. Do not top! This is when the canopy of the tree is cut back hard to a few short thick stems. Tree professionals call it "crepe murder".

Daphne - Generally do not require much pruning.

Dogwood - Keep pruning to a minimum and do not hard prune dogwoods. Prune from fall to early spring removing branches within 3 feet of the ground and dead wood. On established redbud and yellowtwig dogwood shrubs, prune out about one third of the old stems to the ground every 2 or 3 years. This will maintain good winter twig color.

Eastern Redbud - Redbuds have a tendency to cluster their branches and form tight V-shaped crotches that are easily split by strong winds. Prune young trees in early summer to select 3 to 5 strong lateral branches that are well-spaced around the main stem. Established trees need little pruning and do not respond well to hard pruning.

Flowering Almond, Apricot, Cherry, Plum - Generally, do not prune unless necessary. Most require little pruning and only early in the life of the tree. Remove suckers and water sprouts in late winter/ early spring. Otherwise, prune after flowering to avoid taking flowering wood.

Flowering Crabapple - Prune in autumn to early spring. Remove water sprouts in summer. Water sprouts are the thin shoots that grow straight up vertically from the tops of branches.

Flowering Quince - Prune in early summer after flowering cutting back new growth to 6 leaves. On established plants, cut back side shoots of main branches to 2 or 3 leaves. Called "spur pruning", this will stimulate much more flowering. Over time the spur systems will become congested and will need to be thinned to remain prolific. Older shrubs can also be renovated by a hard pruning done over the course of 2 or 3 years.

Grasses - Shear back in mid spring just before new growth emerges.

Holly - Prune in mid to late summer, clipping hedges and shaping trees. New leaves should be firm and glossy but shoots should not have fully ripened and become too hard to cut.

Hydrangea - *H. macrophylla*: Prune after flowering. On established plants cut back thin, weak shoots and one or two of the oldest stems to the base of the plant. The previous year's flowering branches can be pruned back by as much as 12 inches. Cut these back to fat buds. ***H. paniculata***: Late winter to early spring. On established (mature) plants, cut back the previous season's growth to its lowest pair of healthy buds.

Japanese Maples - Do not prune when trees are putting on new leaves in spring or when they are getting ready to drop leaves in fall. Other than that, they can be pruned almost any time and respond well to severe pruning if that is what is called for. They can be easily kept at a desired height or shape with regular "touch up" pruning.

Ligustrum/Privet - Large freestanding shrubs need very little pruning. When hedging, cut back young plants at planting (in spring) to 12 inches above ground level. Then, cut back new growth by half each of the following 2 or 3 years in spring. Established hedges and topiary should be trimmed 2 to 3 times between late spring and late summer. Watch variegated cultivars for shoots that have reverted to all green and remove them as you find them.

Lilac - For light, formative pruning of young plants, prune in midsummer after flowering. On older plants that need renovation, remove up to one third of older stems to the ground in late winter. Many cultivars are grafted and require suckers that come up from the ground to be cut off entirely.

Nandina - Require little pruning. On old, established plants, thin out older canes, especially those in the center of the plant, cutting them off at ground level. Prune in late winter or early spring.

Pieris - Deadhead old blooms annually in spring after flowering. Usually, does not require much formative pruning. Old, neglected plants can be renovated by pruning back to a low framework.

Pyracantha/Firethorn - Prune in mid-spring to shape, if necessary. Cut back shoots that have the blackened or scorched appearance of fireblight. Watch out for the thorns!

Rhododendron - Prune in late spring/early summer after flowering removing long shoots and dead wood, and snapping off old flowers just above the new bud behind them. Generally, little pruning is required.

Rose-of-Sharon - Prune young plants hard to encourage branching at the base. Established plants need minimal pruning. Cut back to live wood any shoots that have died back. If an old plant has become unruly and unattractive, it can be renovated by removing the older branches entirely and cutting back the remaining branches hard. Prune in late spring.

Roses - Prune in spring just as the buds begin to swell prior to the unfolding of vegetative growth, usually late February or early March. Remove all basal suckers (shoots growing out from under the knotty, burlled bud graft union at the base of the plant) and dead, damaged, or diseased wood by cutting flush to the stem or to live, green wood. Remove all inward-growing branches and any that are pencil size or smaller to form a neat, open-centered plants. Remove canes that are 4 years or older leaving about 3 to 5 canes of about 1/2" diameter for hybrid teas, and 5 to 7 canes for floribundas and grandifloras. When removing canes and suckers, be sure to make flush cuts removing any nubs. On the remaining canes, reduce them down to leave at least 3 to 5 outward facing buds on each cane. Make all cuts on a sloping (about 45°) angle no more than 1/4" above the growth bud. Gently flake off old bark from the bud graft union to help promote new shoots. On **climbing roses**, don't prune for the first 2 to 3 years except to remove dead, diseased, damaged or crossing canes and any suckers. After 2 to 3 years, remove older gray and weak canes leaving at least 3 to 5 vigorous canes. On once-blooming types, prune **after** spring bloom. Prune climbers every 3-4 years. **Seasonal Pruning**: Roses should be "dead-headed" throughout the growing season. Prune away old blooms once they are spent. The cut should be placed 1/4" above an outward facing set of leaves that contains 5 or 7 leaflets. New flower buds emerge from these leaves. You can control cane height by choosing any set of 5 or 7 leaves along the stem to make the cut. Again, cut on a 45° angle (so water drains away rather than sitting on the open cut).

Homewood thanks certified arborist Phil Crump of Hunter Tree & Landscape and Dr. Stuart Warren of NCSU for their assistance in preparing this handout. References: AHS Manual of Pruning & Training.