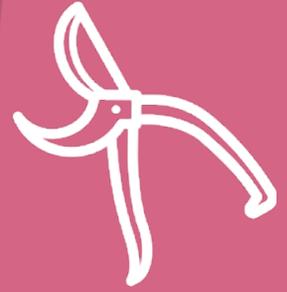


Pruning Young Trees



Proper pruning is essential in developing a tree with a strong structure and desirable form. Trees that receive the appropriate pruning measures while they are young will require less corrective pruning as they mature.

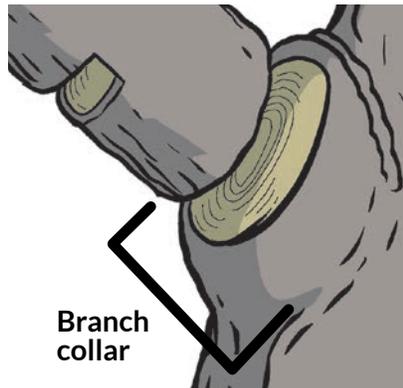
Key Points for Pruning Young Trees

- Set an objective for why the tree will be pruned. For younger trees, the objective is to improve tree structure so the tree will be strong and not interfere with its surroundings as it matures.
- Each cut has the potential to alter the growth of the tree.
- Poor pruning can cause life long damage for the tree. When a tree is damaged it must grow over the damage and the wound is contained within the tree forever.

Deciding Where to Cut

- Pruning cut location is critical to a tree's growth and wound closure response.
- Make pruning cuts just outside the branch collar (see figure below) to avoid damaging the trunk.

- When a long branch needs to be shortened, prune it back to a secondary branch or bud.



- Cuts made between buds or branches may lead to stem decay, sprout production and misdirected growth.

Pruning Tools

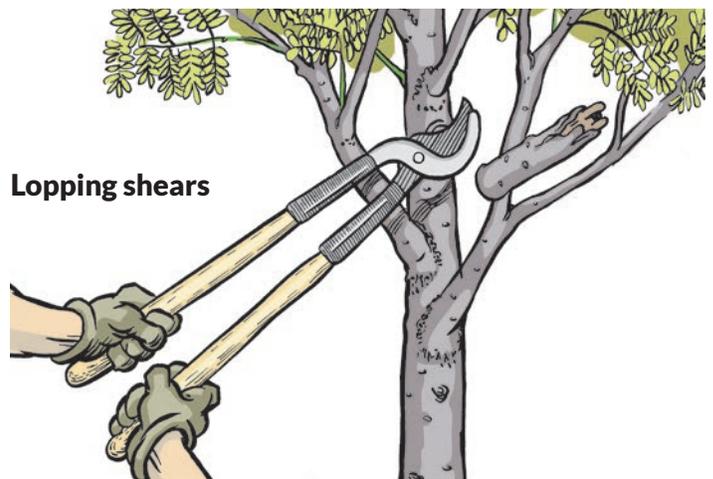
- Small branches can be cut with hand pruners.
- Scissor-type or bypass-blade hand pruners are preferred over the anvil type because they make cleaner, more-accurate cuts.
- Cuts larger than one-half inch (1.27 cm) in diameter should be made with lopping shears or a pruning saw.
- Hedge shears should be used on hedges only.
- Ensure tools are kept clean and sharp.

Newly Planted Trees

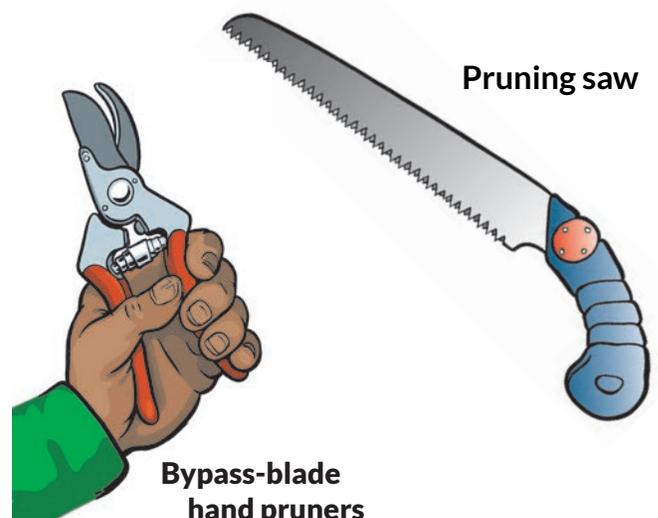
Limit pruning of newly planted trees to the removal of dead or broken branches. All other pruning should be withheld until the second or third year, when a tree has recovered from the stress of transplanting.

Wound Dressings

Research has shown that wound dressings do not reduce decay or speed up wound closure and rarely prevent insect or disease infestations. Most experts recommend not using wound dressings.



Lopping shears

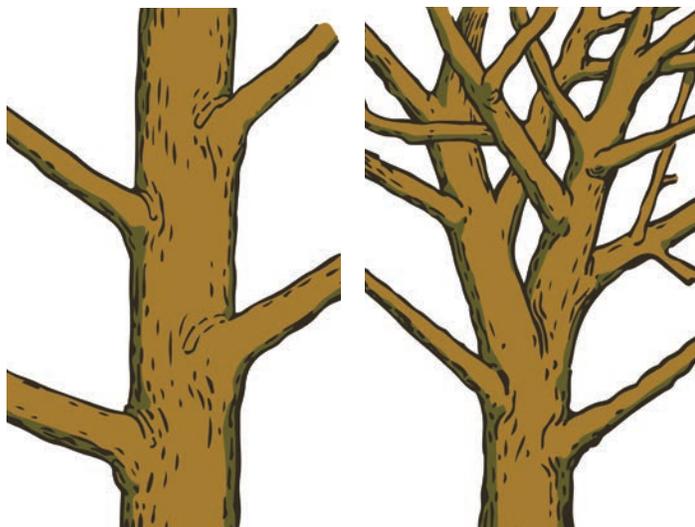


Pruning saw

Bypass-blade hand pruners

Permanent Branch Selection

- As young trees grow, most of the branches present at planting will be pruned away to provide clearance for mowing, pedestrians and/or vehicle traffic.
- The height of the lowest permanent branch is determined by the tree's intended function and location in the landscape. The road side of a street tree may be raised to 16 feet (5 m) to accommodate traffic. In most other situations, 8 feet (2.5 m) of clearance is sufficient. Trees used as screens or windbreaks, however, usually branch low to the ground.
- Sufficient branch spacing and balance, both vertically and radially, is important. The space between permanent branches should be approximately 3% of the tree's eventual height (for example, 1.5 feet [0.5 m] for a tree that can grow to be 50 feet [15 m] tall).
- The strength of branch structure depends on the relative size of the branches and branch angles. Branches similar in diameter to the trunk or limb from which they arise are more prone to failure than those smaller in diameter.
- Narrow angles of attachment can enclose bark within a branch union. Such growth is called included bark, a condition that weakens the branch attachment and may lead to failure when the tree matures. Branches with weak attachments should be pruned when small. Balance should be considered by retaining some branches in each direction radially, spreading from the center outward (see figure top right). Make sure one scaffold branch is not allowed to grow directly above another.
- When pruning, be sure not to remove too many branches. Leaves and supporting branches are major sites of food production and storage. Eliminating too much canopy can "starve" the tree, reduce growth, and increase stress.



Good structure

Poor structure

Establishing a Strong Scaffold Structure

- "Scaffold branches" are a mature tree's framework. Well trained young trees will develop a strong structure that requires less corrective pruning as they mature.
- The goal is to establish a strong, central trunk with sturdy, well-spaced branches. This form mimics tree growth in forests where outward branching is limited by neighboring trees.
- Some tree species develop some or all of these attributes naturally. Others may require more frequent attention.

Trunk Development

- Most young trees maintain a single dominant, upward-growing trunk, called a "leader".
- Do not prune back the tip of this leader or allow secondary branches to grow taller than the main leader.
- Sometimes, a tree will develop two or more nearly equal size leaders known as codominant stems. Codominant stems can lead to structural weaknesses, so it is best to remove or shorten all but one of the stems when young.
- A tree's secondary branches contribute to the development of a sturdy, well-tapered trunk.

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