



Bronx Green-Up • THE NEW YORK BOTANICAL GARDEN

Bronx Green-Up, the outreach program of The New York Botanical Garden, provides horticultural advice, technical assistance, and training to community gardeners, school groups, and other organizations interested in improving urban neighborhoods through greening projects. At the heart of Bronx Green-Up are the community gardens of the Bronx and a compost education program. For additional information, contact Bronx Green-Up at 718.817.8026 or bronxgreenup@nybg.org.

Pruning Fruit Trees

Most fruit and nut plants require regular pruning. Even if a plant bears fruit season after season, it will usually bear more fruit and of higher quality if its canopy is pruned to be as open and spreading as possible—letting in maximum sunlight and allowing for air circulation to reach the center of the tree.

Reasons for pruning fruit trees

- To develop strong tree structure/form and to train young trees
- To remove dead, diseased, or damaged wood, protecting the tree's health and preventing potential injury to people and property
- To control size, enabling easy access to pick and thin fruits. However, a vigorous grower such as a peach tree can never be kept small by pruning. It will respond with more growth and little fruit.
- To increase sunlight penetration, which helps to improve fruit quantity, quality, and color, and is essential for fruit spur development and fruiting. Fruit spurs are the short branches on trees such as apples and pears that set flower and bear fruit.
- To increase air circulation, which helps to minimize fungal disease
- To distribute the plant's energy, balancing the amount of leaf and shoot growth with the amount of flowers that form and fruits that ripen

When to prune fruit trees

With few exceptions, prune fruit plants in the dormant season (late winter/early spring). Apples and pears are hardier fruit trees, and may be pruned in December and January. Stone fruits, which include peaches, apricots, cherries and plums, should be pruned in early spring, from March to the time of bloom. More specifically, the recommended time to prune peach and apricot trees is bud break, when the flower buds are just about to open.

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Why is it best to prune in the dormant season (late winter/early spring)?

- Pruning in late winter allows wounds to heal quickly with the start of new growth.
- Trees pruned too early in winter may be damaged by low temperatures (that can cause cankers and wood rot disease), especially if larger cuts are required.
- With the tree bare of leaves, undesirable wood can easily be seen.
- Differences in weather might allow for earlier or later pruning in some years. Most of the pruning of fruit-bearing trees in the Tri-State area should be confined to the months of January through March.

☀ **Dead, diseased, or broken branches may be removed at any time of the year.**

Summer pruning, usually after June, is necessary for some fruit trees to:

- Control growth and train young trees
- Improve the amount of sunlight required to ripen the fruits (remove branches that are crowding, especially those that block sunlight from reaching the fruits)
- Remove water sprouts, suckers, and other undesirable wood

Two Types of Pruning Cuts

- **Thinning-out cuts** are used to remove whole branches to let in more sunlight and increase air circulation. If done properly, there will be no new growth where the cut was made. Pruning into older wood stops growth.
- **Heading-back cuts** refer to cutting back the length of a branch (shortening). The result is to encourage growth and later fruiting from the point of cutting. Pruning into one-year-old wood stimulates growth.

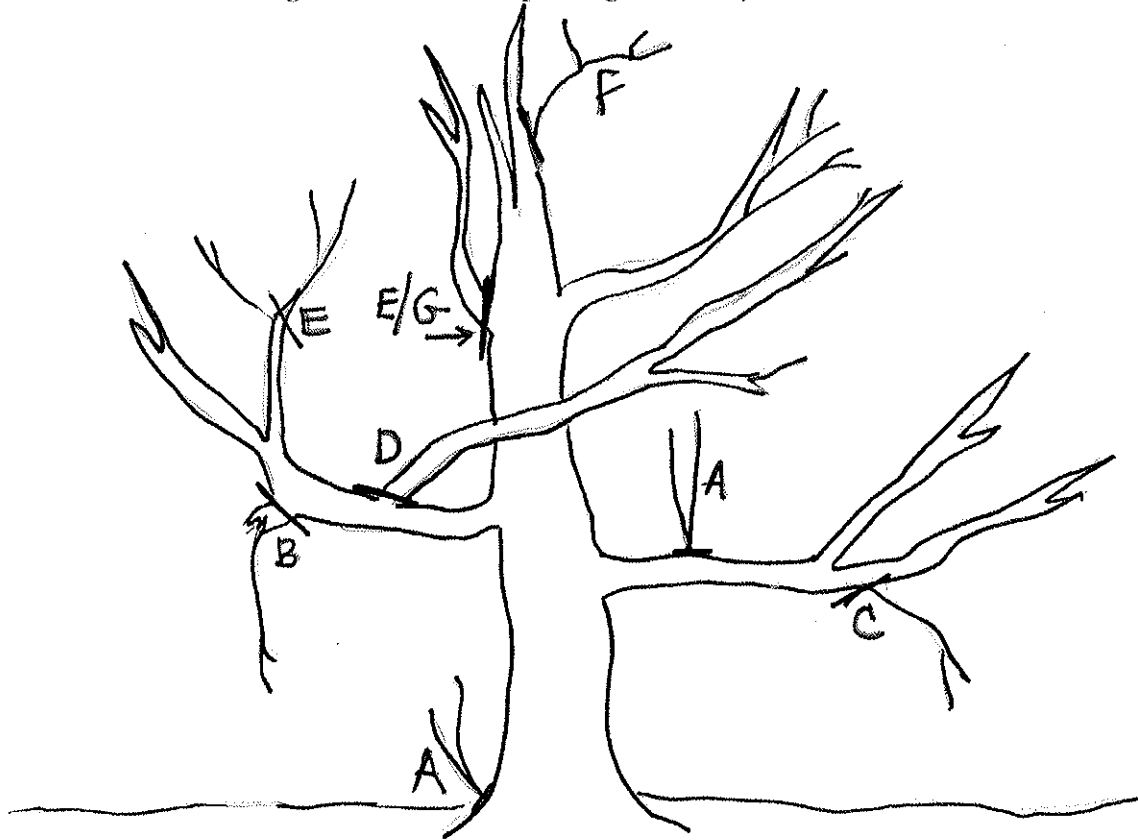
Fruit Thinning

Most fruit trees bear too many fruits, resulting in small-sized fruits of poor quality, increased insect and disease problems, and greater instances of broken branches. Excessive fruit loads also reduce the amount of the following year's crop. Fruit thinning is a process that removes some of the fruits when they are small (called fruitlets), leaving properly spaced fruits for better development. This should be done in July, after "June drop," the period when fruit trees naturally shed some of their fruits.

Thinning the fruitlets can produce higher quality mature fruits, though fewer in number. Fruit thinning also lets sunlight and air penetrate the interior, improving ripening and discouraging the spread of disease. The general rule, depending on the mature size of the fruit, is to leave growing fruit every 4–8 inches on each branch, keeping the biggest fruits of each cluster on the branch.

What to Prune

Follow the drawing to determine the pruning needs of your fruit tree.



A – Suckers or watersprouts grow vigorously and drain nutrients the tree needs for fruit production. They often appear at the base of the tree or the sites of previous pruning cuts.

B – Stubs or broken branches occur from storms, heavy fruit loads, or improper pruning. Diseases or insects may enter at these sites, so cut back to healthy side branches or remove.

C – Downward-growing branches are unproductive and should be removed.

D – Rubbing branches can injure the bark, which can invite insects and disease. Make a heading cut or remove one of the two branches.

E – Shaded interior branches grow lower-quality fruit and are difficult to reach. Remove.

F – Competing leaders occur when branches near the top of the tree are allowed to grow taller than the central leader. Make a heading cut or your tree will grow unevenly and become unstable.

G – Narrow crotches occur when a branch grows more upward than outward. These branches will interfere with the shape you are trying to obtain. The ideal crotch angle is 45° to 55° .

Training Fruit Trees

Young fruit trees need to be trained to develop a strong structure and form. Over time, a proper structure will extend the life of the tree, make it accessible for harvesting, and ensure adequate sunlight exposure and air circulation.

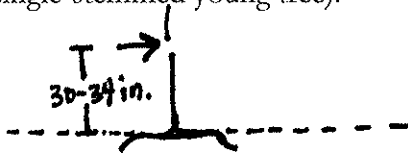
Two Types of Training

- **Central leader training**, generally for apple, pear, and cherry trees, develops one main, upright trunk, called the leader. Branching begins on the leader 24–36 inches above ground level. When selecting branches to remove, choose branches that are evenly spaced around the trunk, not ones directly across from or above one another. The aim of this system is to create two or three tiers (called whorls) of horizontal branches along the 12–14-foot vertical trunk, or one continuous whorl over that same run. The positioning of the tiers should be: 5–7 branches at 2–4 feet, a second whorl of 3–5 branches at 6–8 feet, and a third whorl of 2–3 branches at 10–12 feet. Between each tier is a “light slot,” an 18- to 24-inch space for sunlight to enter the center of the tree. The overall shape of the tree will look much like a Christmas tree. The lowest branches will be longest and the higher branches will be increasingly shorter to allow for maximum light penetration to the whole tree.
Note: The best time of year to prune these types of trees is January through March.

The following steps begin with the planting of the tree.

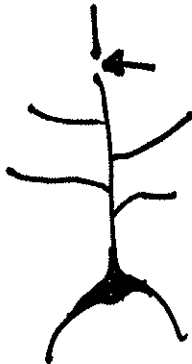
1. At Planting

As buds begin to swell in late winter, make a heading cut 30–34 inches above the soil surface on a whip (unbranched, single-stemmed young tree).



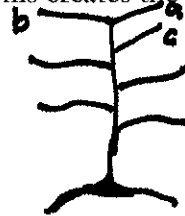
3. Dormant (Winter) Pruning

Make a heading cut 24–30 inches above the highest branch of the first whorl.



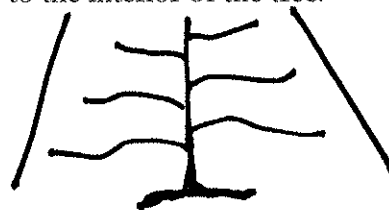
2. First-Year Summer

Summer prune when new growth is 3–4 inches long. Leave **a.** as the new leader, and remove **b.** and **c.** Select four evenly spaced horizontal branches for the first tier and remove the remaining horizontal branches. This creates the first whorl.



4. After Pruning the Third Year

Three tiers (whorls) have developed with 3 or 4 branches evenly spaced around the tree in each tier. There is room for light, a slot of 18–24 inches between each tier. The Christmas-tree shape allows for sun exposure to reach the lower branches as well as to the interior of the tree.



- **Open center training**, generally for peach, nectarine, apricot, and *plum trees, removes the leader, leaving an open center, with from 3 to 5 major limbs coming out from the trunk. A tree trained in this method will look donut-shaped. This system is good for more vigorous growers such as peach trees, because enough light will reach into the tree. The fruit of peach and nectarines grow on one-year-old shoots, so the idea in pruning is to remove old, gray, unproductive wood, leaving the previous season's growth.

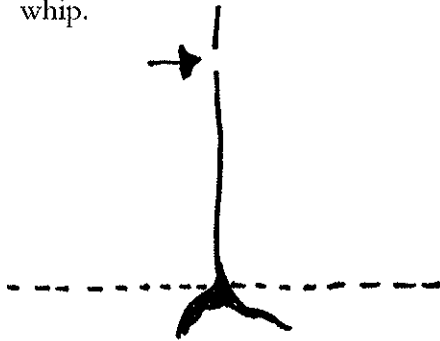
Note: The best time of year to prune these types of trees is late winter, as late as when the flowers appear on the tree (usually in March or early April).

*Plum trees may be trained in either the open center or central leader form.

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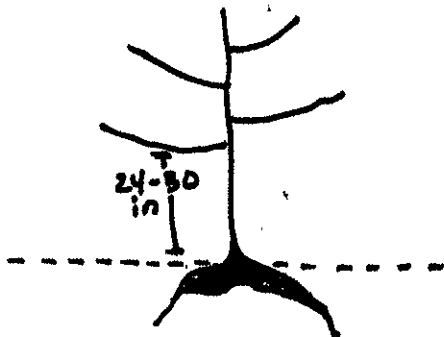
1. At Planting

As buds begin to swell in late winter, make a heading cut 30–34 inches above the soil surface on the main trunk of a whip.



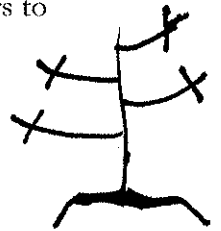
2. Summer Pruning

After new growth is 3–4 inches long, select which shoots will become the major branches. The lowest branch should be 24–32 inches above the soil surface. Select 3 or 4 branches that are evenly spaced around the tree with wide branching angles, ones not directly across from other branches. All other upright growth should be removed because it will shade out the major branches.



3. After First Year

The main branches are selected and trained outward. This may require staking or putting spacers between branches to ensure wide crotch angles. Make heading cuts on these branches in the dormant season (late winter) of the first 3 years to strengthen and promote branching. Remove upright growth that was not removed during summer.



4. Mature Tree Pruning

Step One. Remove all hanging branches, suckers, and water sprouts on the lower 3 feet of the tree. This stripping of lower growth clears a path for harvesting and allows air circulation. Also, remove any dead, diseased or damaged wood.

Step Two. Remove all shoots above 7 feet other than red 18- to 24-inch fruiting shoots. Cuts need to be at select points where the branch limbs extend upward at a 45- to 50-degree angle. Avoid making cuts that would leave limbs sideways at a 90-degree angle.

Step Three. Remove all shoots that grow toward the inside of the tree.

Step Four. Remove all old, gray wood in the 3- to 7-foot fruit production zone.

These books provide greater detail on pruning methods and care for fruit tree species:

- *The Pruning Book* (2nd edition), by Lee Reich, Taunton Press, 2010
- *Landscaping with Fruit: Strawberry Ground Covers, Blueberry Hedges, Grape Arbors, and 39 Other Luscious Fruits to Make Your Yard an Edible Paradise (A Homeowner's Guide)*, by Lee Reich, Storey Publishing, 2009
- *The Backyard Orchardist: A Complete Guide to Growing Fruit Trees in the Home Garden*, by Stella Otto, Chelsea Green Publishing, 1993
- *The Organic Gardener's Handbook of Natural Pest and Disease Control: A Complete Guide to Maintaining a Healthy Garden and Yard the Earth-Friendly Way*, edited by Barbara Ellis and Fern Marshall Bradley, Rodale Press, 2010