A man wearing a brown jacket, a tan cap, and blue jeans is using long-handled shears to prune a young tree in a nursery. The background shows rows of similar young trees. The text is overlaid on the image.

PRUNING & TRAINING BASICS

FROM THE
ANDERSON'S
FRUIT GROWING GUIDE
BY MARK ANDERSON

PRUNING & TRAINING BASICS

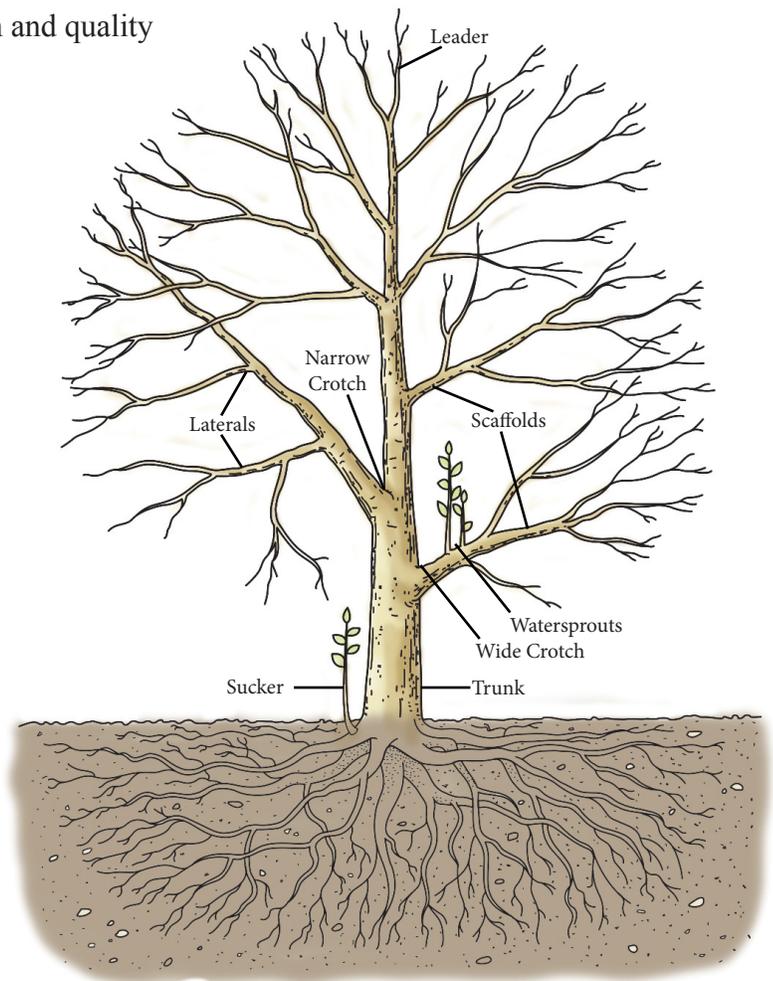
How much of my tree should I prune? Can I damage the tree by pruning too much? So many gardeners have questions about when, where, why, and how to prune fruit trees and shrubs. It's difficult to know the needs of each variety - and they all seem to have their own set of rules. What you really should know, is that plants will live, grow and bear fruit without any extra attention or special pruning, but proper pruning will allow the trees to produce more, to avoid damage and disease, and improve general health of your valuable asset. This general information will equip you with the basic knowledge you need to keep your fruiting trees and shrubs healthy and productive.

When you remove a part of a plant, it can directly benefit the remaining parts of the plant and stimulate growth. Depending on how and when it is done, pruning can produce a wide variety of results:

- Encourage new growth in desired areas
- Help control excess growth
- Shape mature and young plants
- Repair damage or correct injury
- Assist in controlling insects and disease
- Encourage blooming
- Increase fruit size, production and quality

If you keep in mind that pruning is very beneficial to plants and trees and learn proper techniques and principles, then when you begin pruning (carefully to start) you will not feel so timid and fearful to make a cut or do irreparable damage. Even big mistakes will resolve themselves in a few years as the trees compensate for the loss of a limb or two.

In freezing climates, fruit tree pruning should be accomplished in late winter or early spring, before the buds begin to swell and open. Some pruning can also be done after the bloom period ends without damaging the tree. Try to avoid pruning in early dormant season (late November and December) in severe cold climates as freezing injury can occur.



Parts of a Tree

Before pruning, it helps to know the parts of the tree, branches, and buds as well as their functions.



Terminal bud: This large bud at the tip of a branch grows fast and demands the most strength from the tree. By removing this bud, lateral leaf and flower buds will receive more strength and develop more dense growth.



Leaf bud: These appear like flat triangles on the sides of the branches. Prune back to these buds to encourage growth in the direction you desire.



Flower bud: More plump compared to leaf buds and usually the first buds to swell in the spring. These can grow alongside leaf buds on stone fruits, and on apples and pears they can also produce leaves.



Spurs: Twiglets with bunched up tissue close to the main branch on apples, pears, plums and apricots. They develop on older branches and almost always produce plump flower buds, blossoms, then fruit. Don't remove these. They look like unproductive growth and are frequently removed by novice pruners.



Bud scar: The ring on a branch that indicates where the terminal bud began growing after the dormant season. This ring marks the origination point for the current season's growth.



Crotch: The angle where branches fork or where a limb joins the trunk. The strongest crotches are close to 45-degree angles. The wider or narrower the crotch, the weaker the branch will be. Weak crotches are highly susceptible to wind and snow breakage.



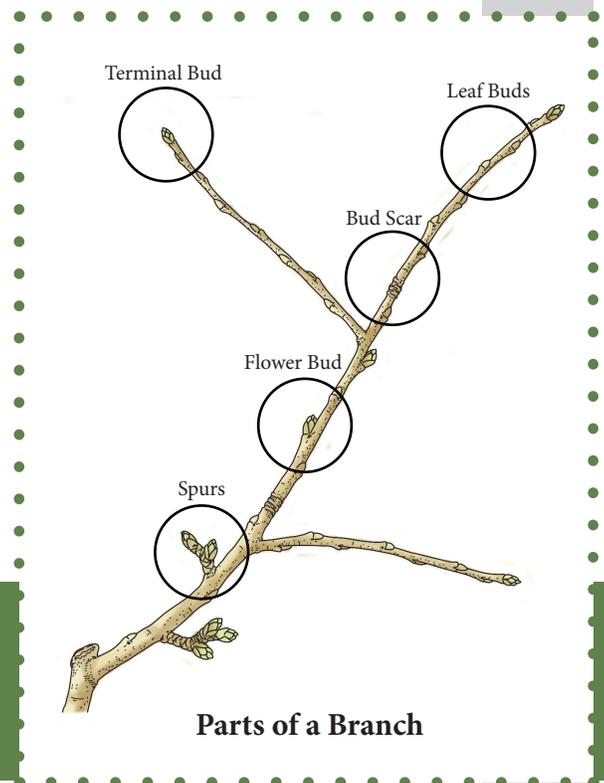
Scaffold: The main, largest branches that grow from the trunk of the plant.



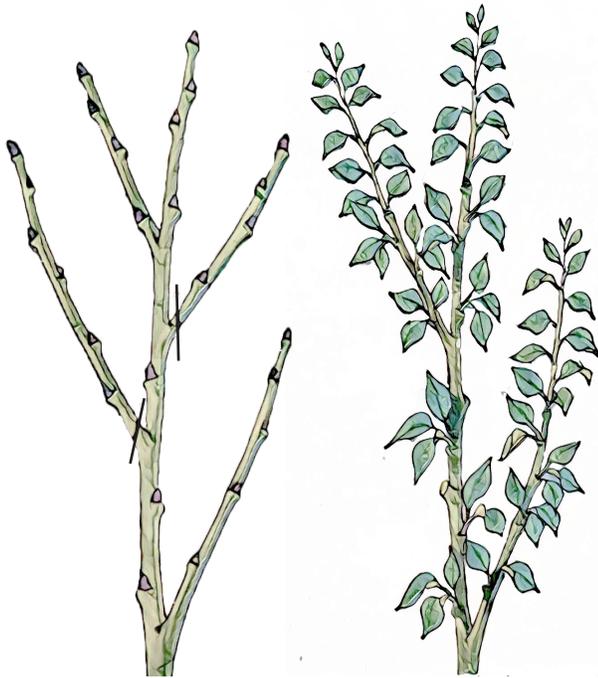
Water sprout: A very vigorous growth that grows directly upwards from mature branches on the tree (especially where the upper branches are exposed to more sunlight). Remove them with thinning cuts back to the branch.



Suckers: Vigorous growth from the roots of the plant or below the graft/bud union on the trunk. Remove back to the base.



Next, make sure you have the proper equipment. Sharp, well-maintained, good-quality tools will make your job much easier. Also, you need the right tools for the job. Without a hand pruner, a lopper, and a saw, you might as well forget it, or make a trip to the garden center. For larger trees, a pole pruner and a chain saw are almost a must. Don't skimp on quality tools as well - most high-quality tools cost 25-40% more, but will last 3-4 times as long, keep a sharper blade, and don't break right when you need them most. When you don't have the right tool for the job, human nature prompts us to improvise with what we have. Can you remember the last time you did something dumb with a tool, that it was not made to do, but you did it anyway because it was all you had to work with? We've all been there before, and in most cases it usually damages the tool, the item being worked on, or you. Let's try and avoid that at all costs.



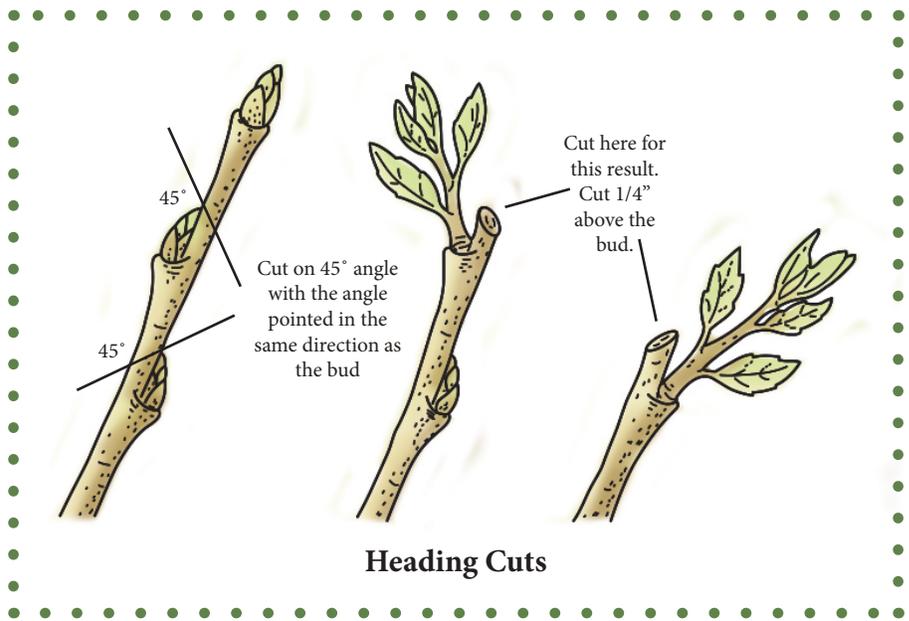
Thinning Cuts

Branches are removed back to the main branch, leaving no buds to grow back. Energy is diverted into remaining branches, which produce more growth.

The basic principles of pruning work for fruit and shade trees, shrubs, and vines. There are two basic types of pruning cuts: heading and thinning. Thinning cuts completely removes the branch and stops growth in that area. All of these cuts are made at the base of the branch or sucker so that no buds are left to sprout new growth. Cuts should be made perpendicular to the main branch, and leave a 1/4 inch collar to promote good healing growth. Always watch for 40 to 50-degree angles as they will be your strongest branches - anything greater or lesser will develop into weak branches, and especially acute angles should be removed first, as they are most likely to break.

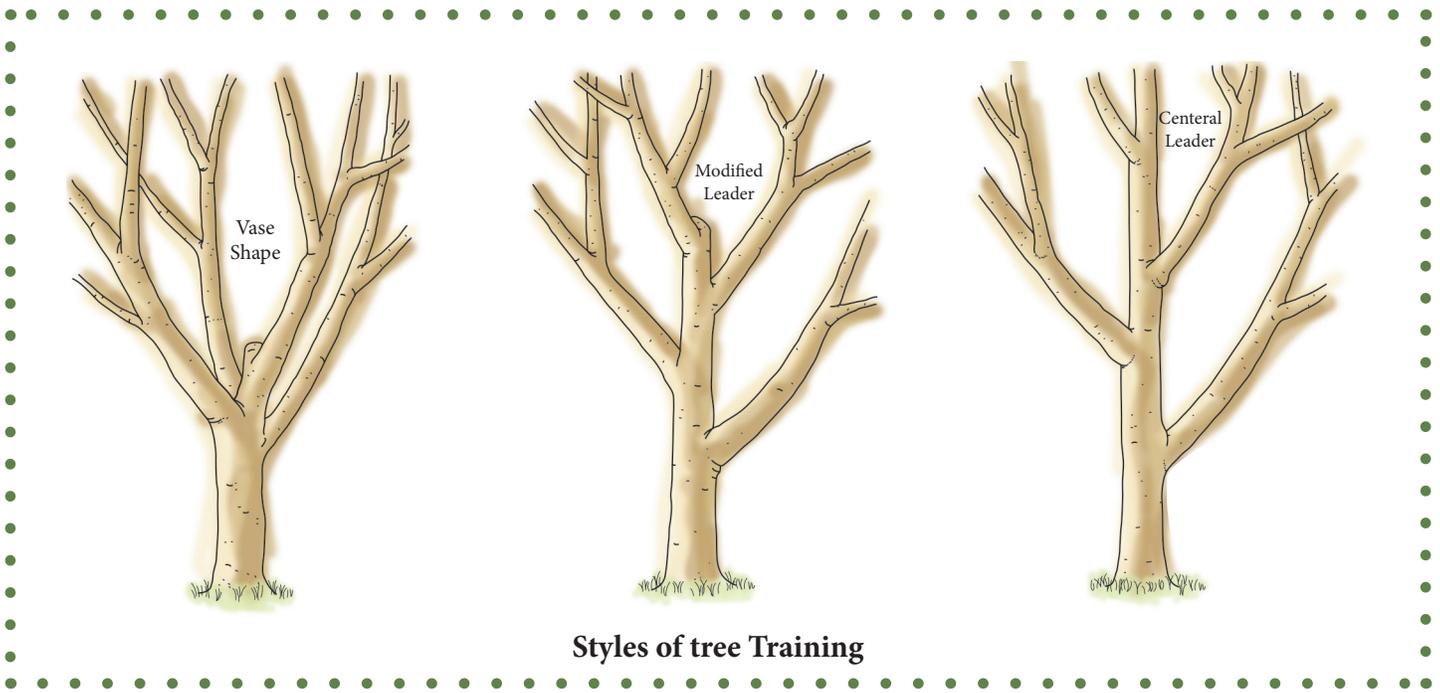
Heading cuts remove the terminal bud that would otherwise continue to grow outward. This type of cut will shorten the branch, encouraging new growth from the remaining buds, making the tree or shrub much bushier and full of foliage. Cuts should be made on 45-degree angles in relation to the branch, about 1/4 inch above the bud, and with the angle pointing in the same direction as the bud. If you need growth to the left, prune back to a bud pointing to the left. If you need the branch to grow to the right, then prune back to a right facing bud. You are basically telling the tree which way you want it to grow by pruning.

When deciding where to start cutting, always start with any wood that is damaged, diseased or dead, as all these types of branches should be removed completely. Next, look for branches or wood that crowds or crosses over/under other branches that could eventually grow together or rub up on each other. Pick the best one and remove the other. Also remove branches that grow back into the center of the tree or grow straight upwards and have a slightly different look from the rest of the growth (water sprouts). This unproductive growth will never produce fruit. Then start thinning out excess growth and older unproductive branches.



Direct new branches to open up the interior of the tree to air and light with heading cuts, and cut back terminal buds to prevent long, heavy branches that can break with heavy snow or too much fruit. Finally, you can start removing branches to encourage new fruit production: thin out large limbs that shade fruit-producing branches and remove small, shaded branches growing from the lower parts of larger branches.

Fruit trees should be trained to one of three different forms: the vase (most common), central leader, or modified leader. Each has its own set of advantages for each type of fruit. Proper pruning and training of the tree will keep the tree balanced in form and also in production of new wood. It is essential to the health and productivity of the tree.



Vase training includes shaping the tree to a shorter trunk, usually between 3 and 5 feet depending on personal preference, with three or four main branches directed outwards from the center. This creates an open center that allows light and air to reach all the branches. Vase shape is almost always used with stone fruits like peach, apricot and plum, and is often used with apples and pears as well.

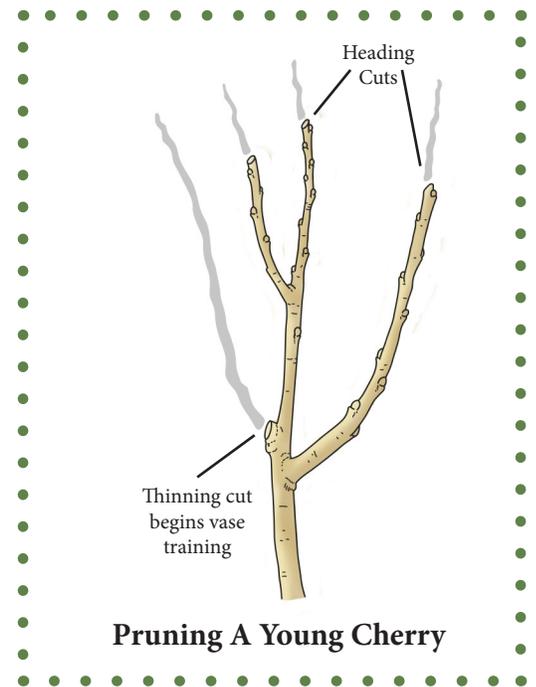
Central leader training is a technique which shapes the tree to a single, taller trunk with branches directed outwards from the trunk in regular intervals. This encourages a very strong tree with sturdy branches, but can make for difficult harvest in taller trees. This form is not used commonly in fruit trees, but is traditional for most shade trees. Walnuts make excellent trees when pruned to a central leader.

Modified central leader training incorporates the strength of a central trunk with the light-filled center of the vase shape. A taller, single trunk is allowed to grow to 4-8 feet tall and the main branches encouraged to grow outward from the trunk with a vase shape at the top. This provides the best of both worlds. This shape is commonly used for apples, pears, and cherries.

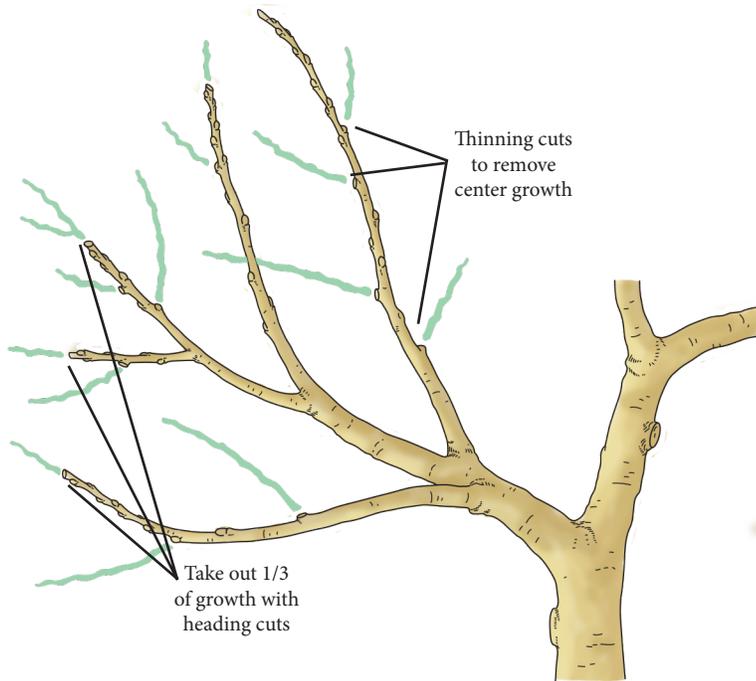
Variety specific pruning suggestions:

Cherry. All cherries bear fruit on long-lived spurs that begin on two-year-old branches. These spurs can produce for 10 years or more. Cherries are well adapted for modified leader training. Make sure the leader and upper scaffold branches are not crowded by each other or lower branches growing upward. After the tree begins bearing fruit, prune out weak branches, those that develop at odd or weak angles, and any crossing branches.

Peach, Nectarine and Almond. These trees all fruit on one-year-old wood, but peach and nectarine will not produce again on the section of branch that fruited, and that part should be removed each year. Almond branches can continue to produce for up to 5 years, and should not be pruned as heavily as peach and nectarine. The greatest number of flower buds form on sturdy new branches that grew more than 12 inches the previous year. Keep these strong branches, but head them back 30-50% and the tree will bloom on the remaining year-old wood.



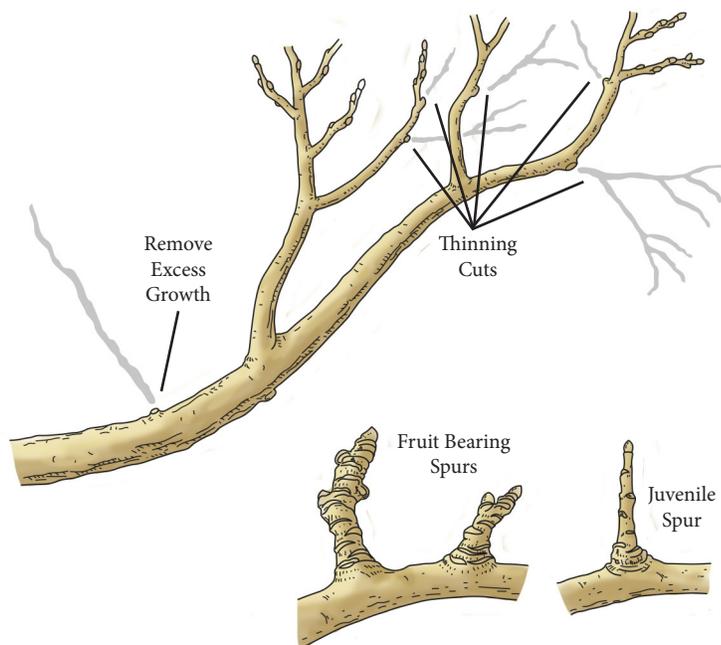
Pruning A Young Cherry



Pruning Peaches & Nectarines

Fruit forms on two-year old wood. Trim out about half the new growth, removing shorter pieces completely, heading back long shoots by about one third. The heavy pruning stimulates abundant summer growth for a good crop the following year. Trim out tangled center growth for more light exposure.

Apple and Pear. Apples and pears bear fruit on long-lived spurs. The fruit forms on the tip of last year's spur growth, then the spur grows slightly during fruit development. It is not uncommon for spurs to remain productive for up to 10 years, so treat them carefully when harvesting (and pruning). Apples and pears train well in to either a central leader or a modified leader form. Pears tend to grow more upright than apples so avoid too many heading cuts that will promote more upright growth.

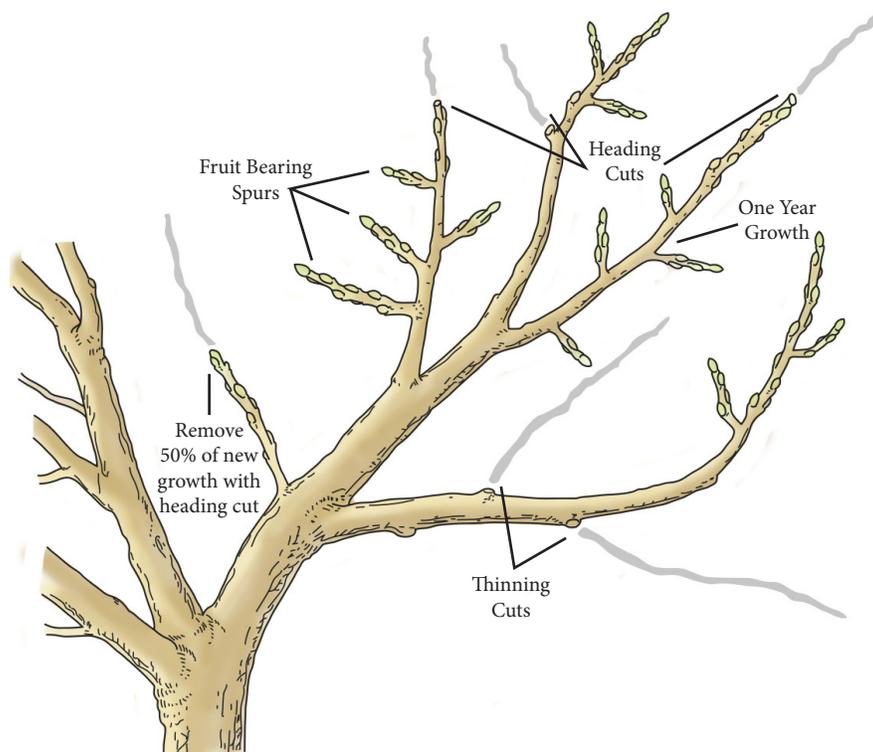


Pruning Apple, Pear and European Plum

Remove tangled branches or any damaged or diseased wood. Trim out any dangling limbs or vertical water sprouts at the base with thinning cuts. Head back branch tips to maintain the size of mature trees. Leave twiggy spurs to promote more fruit production.

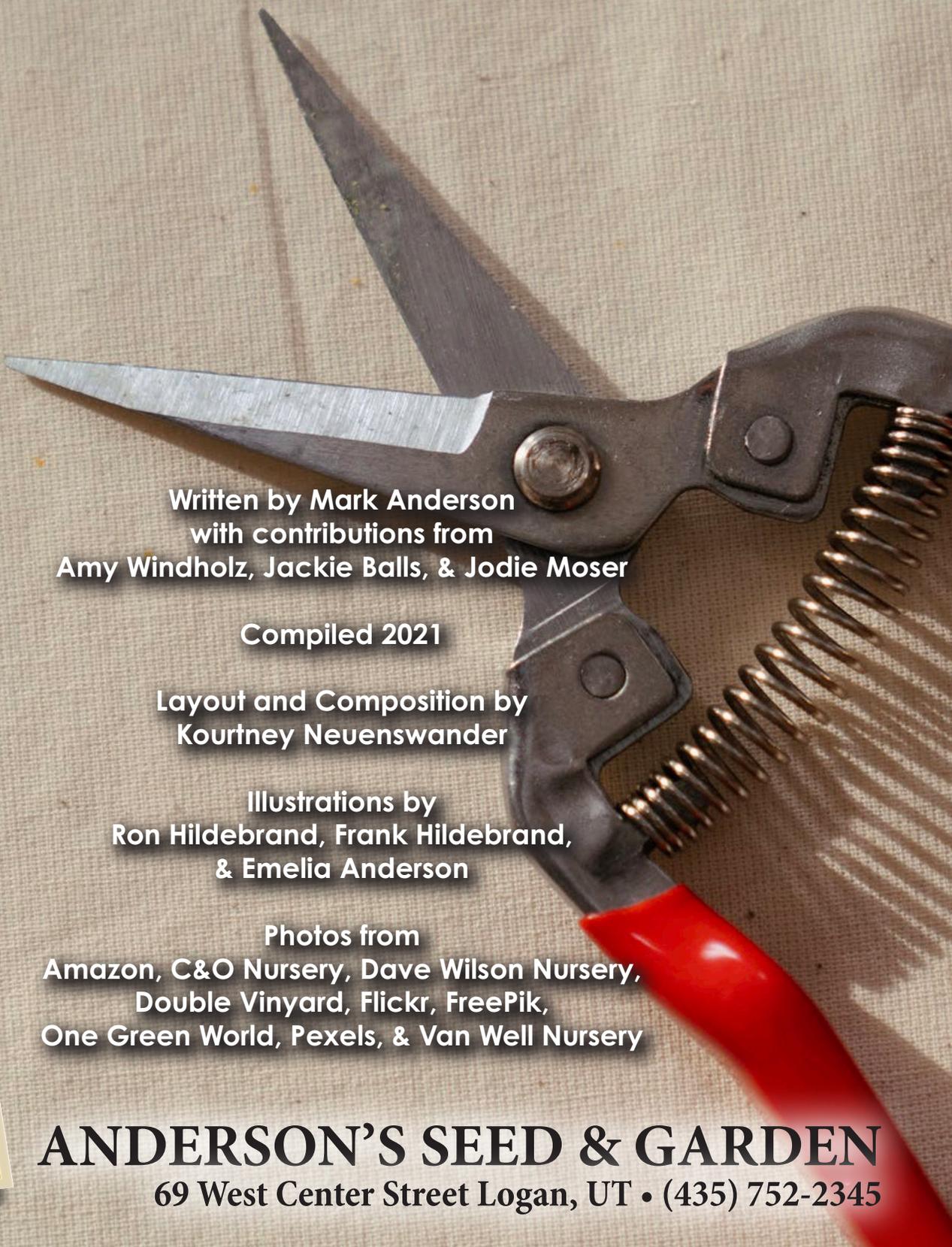
Plum. Plums fruit on spurs that form on two to four-year-old branches. Remove one-third of the new wood on Japanese plums each year by thinning and heading. This heavy pruning will help maintain larger fruit size and help control over-production. Head long, thin branches to help prevent breakage and maintain a compact shape. When fruit spurs have produced for 5-6 years, select a new branch from one of the best lateral shoots on the main branch and remove the rest just above the selected lateral. European plums need minimal thinning and heading once the general tree shape has been formed. You can use either a Modified Central Leader or a Vase shape for European plums.

Apricot. Apricots develop on the previous season's growth and on short-lived spurs on older wood. Without pruning, apricots begin to only form on the highest branches where the newest growth thrives. Like plums, apricots bear on spurs that produce fruit for two to four years and then need to be pruned out and replaced with new growth. Head back long whips by 50% and remove the oldest fruiting wood each year. Removing old growth stimulates new growth for the next year's crop, opens the tree up for even ripening, and helps limit the spread of common diseases.



Pruning Apricot and Japanese Plum

Most fruit develops on two or three-year-old wood. Start by heading back new whips by 50 percent. The half you leave will form fruit producing spurs the following year and begin producing the year after that. Thin out any excess growth.



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