Pruning fruit, ornamental and flowering trees
a basic guide for home gardeners

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Other fruit and nut types
Whether to prune a fruiting, flowering or ornamental tree or not is largely a matter of choice.

Fruit trees which have never been pruned can still produce fruit annually. Unpruned fruit trees will provide enough crop of adequate size for the needs of the average household. However, pruning is advisable to improve the quality of fruit and to establish a strong framework of branches to resist breaking when heavily laden with fruit.

Some advantages of pruning fruit trees are:
- Young trees will establish a strong framework of branches. Unpruned, a tree often makes lanky, spindly growth which can break easily when carrying a heavy crop.
- Spindly growth can result in poor fruit.
- Excess fruiting wood is eliminated resulting in larger fruit on the remaining branches.
- Fruit is easier to harvest.
- Maintains the tree at a manageable height.
- Opens up the tree for better air circulation.
- Opens up the centre of the tree to sunshine. Ripening fruit becomes more colourful and sunlight develops better fruit flavour by increasing the natural fruit sugars.
- Spraying a small tree is easier and cheaper (and better for the environment).
- Some fruit types such as peaches and nectarines fruit on the previous year’s wood only (one-year-old wood). On an unpruned tree fruit is produced on weaker branch tips. Winter pruning encourages new shoots, ensuring new fruiting wood for the following year closer to the framework branches.
- The tree is much tidier and takes up less space in the garden.

One advantage of not pruning is that fruit may be produced earlier in the life of the tree. This applies more so to apples and pears as these trees need at least two-year-old wood and older for fruit production.
Winter Pruning vs. Summer Pruning

**Winter Pruning**
In general winter pruning promotes vigorous growth and the harder the tree is pruned in winter the more vigorously it will grow in spring.
Winter is the time to prune when you want to train a tree to a particular shape or want to encourage substantial growth.
We recommend that all newly planted dormant trees be pruned during winter until the tree has achieved the desired height and shape; after that, winter pruning is mostly used for detailed pruning i.e. pruning the spurs and laterals for fruit.

**Summer Pruning**
In general, summer pruning retards growth. The framework branches are maintained and any new, vigorous, overcrowding branches are removed from the centre. The new growth that follows is tamed and much less vigorous than growth following winter pruning. Once a system of summer pruning is established, very little winter pruning of the framework is required.

**How much is too much?**
By learning where the fruit is produced on a tree and following some simple steps for establishing a strong framework of branches, pruning is much easier than you think.
Don't be frightened to have a go at pruning your trees. At times being too gentle can negate the results of your efforts. If in doubt cut back a little bit 'harder' rather than 'softer'. The prospect of pruning can be daunting but you will do your trees more good than harm by pruning them. A little practice (and a few mistakes) will make the trees in your garden something you can thoroughly enjoy and be truly proud of.
Tree basics

Terminology explained

A ‘lateral’ can be described as being a one-year-old short branch. There is little difference between a lateral and a young branch but generally a lateral is weaker than a branch because it grows on a more horizontal plane. This results in slower growth because the sap flow is decreased. A young branch growing vertically becomes stronger due to an unrestricted sap flow.

Healthy laterals are most important as this is where the tree settles down to produce fruit. Any lateral has the potential to become a branch.

‘Feathers’ are the same as laterals (but are usually smaller) and are produced freely on young peaches, nectarines, almonds and plum trees.

The following diagrams will help to make our pruning explanation clearer.

‘Feathers’ grow from main branches.

Above: Prune to an outward facing bud, but do not leave too much wood above the bud.

Terminal bud

‘Leader’

Branch leader

Lateral

Bud

A new branch ‘leader’ should grow from any bud if the branch is pruned back to a bud.

Framework branch

Bud or graft union
Usually about 100 mm above the soil line.
The graft-union in some fruit types may be 450 mm above the soil line.

Trunk

Soil line
After planting a bare-rooted tree

A tree planted during winter should be pruned immediately it is planted. This first pruning is really quite simple and is the first stage in setting up a strong framework of branches to enable the mature tree to carry a heavy crop load.

Trees offered for sale to the home gardener are mostly trained to a shape that is the beginning of a ‘vase shaped’ tree. The young tree usually has two or three branches (often four or five), which leave the trunk at approximately the same height.

Some trees are trained with a ‘central leader’ where the side branches extend from the one main stem.
Framework pruning and detail pruning

Pruning can be divided into two parts

‘Framework pruning’ is exactly that; creating and maintaining a frame of branches designed to carry a heavy crop load. Framework pruning is divided into two categories – ‘vase-shaped’ and ‘central leader’.

‘Detail pruning’ is pruning the actual fruiting areas of the tree and is discussed in detail in the sections on each fruiting type. This pruning is often carried out in conjunction with framework pruning.

Framework pruning for a ‘vase-shape’ tree

The aim here is to establish a strong framework of branches in the shape of a ‘V’ or vase. The advantages of the ‘vase’ shape are that the centre of the tree is open, allowing the middle of the tree to receive adequate sunlight and air circulation.

The first pruning should start when the tree is planted, and for this exercise, we assume the tree is dormant and bare-rooted.

The branches on the young tree should be shortened back to an outward-facing bud approximately 300mm from the trunk, leaving a basic frame of stout, main branches.

Very often a peach, nectarine, almond or plum tree will have a lot of tiny branches or ‘feathers’ coming away from the main branches. Treat the ‘feathers’ as a bud, cutting the branch back to one that is facing outwards, then finding an outside bud on the ‘feather’, shorten back to that bud. This may well be just a few centimetres from the branch, this is not a problem. This bud (on the ‘feather’) can then grow out as the new branch leader.

In this first year remove all ‘feathers’ growing in the centre of the tree and shorten all others.

In following years, the aim is to extend the framework of branches (from the original two, three or four to about 10 to 12) by multiplying them and to keep the fruit-producing wood (‘laterals’ and ‘spurs’) close to the strong framework branches.

Continued next page ...
Second and subsequent years framework pruning

Firstly, clean up around the outside and lower part of the tree, keeping the lower area free of branches to make lawn mowing easier and to stop any fruit from coming into contact with the ground.

Secondly, remove any strong branches growing into the centre of the tree. You can also cut out any strong growing branch that is not where you want it to be, for instance if its lower than an existing branch and will be 'shaded out'.

During the first growing season each branch should have sent out some side branches (or laterals). Select two of the stronger, perhaps higher and outward-growing branches on each of the original branches to be part of the continuing framework.

Consider the direction in which each is headed, don’t leave in a branch that has the potential to crowd out or cross over another branch.

It may be that you choose only one branch to fill a space to the side or in a crowded area choose to leave just the original branch to continue its original direction.

Prune off the original branch just above where the highest of the two selected branches are growing out and then prune both the selected side branches back to an outward facing bud.

There will now be two new framework branches growing from each previous framework branch, each filling a space in the widening circle of branches (see diagram).

At this stage do not prune off any laterals as this is your fruit-bearing wood, unless they are growing straight up and strongly into the centre of the tree. Detailed pruning should be carried out after you have dealt with the frame.

Continue forming the framework branches over the next few years until you feel there is a good even spacing of branches.
Pruning a ‘central leader’ tree

‘Central leader’ pruning is usually applied to apples and pears.

Begin by working up the trunk, starting at the lowest branch. Prune this and the next five of the stronger branches to approximately 200mm in length, selecting branches that will result in radial pattern around the central leader. Imagine a set of almost horizontal branches forming a layer of ‘scaffold’ branches. Continue up the central leader, pruning back all the unwanted branches to the trunk. Prune the central leader off at about one metre from the ground. As new growth appears at the top of the central leader, it will usually grow straight upwards.

The aim for the following years is to create a framework of layers of horizontal branches with a clear area of trunk for approximately 400 mm between each layer, up to a height of about 2.5 metres with the upper layers progressively narrower than the lower layers.

The side branches will extend further out with a tendency to upward growth and some laterals will be produced on them. At this stage these side branches should be shortened to encourage thickening-up and the laterals tipped.

Fruit buds will be produced on the laterals the following year. In subsequent years gradually shorten the laterals until they become spurs (in the case of apples and pears). If they are left to grow too long, they have the potential to produce too much fruit and may break off. Do not allow any strong upward growth from the horizontal scaffold branching. Consider weighing or tying down any lateral that wants to grow upwards down to a more horizontal plane (to slow the growth down).

As with a ‘vase-shaped’ tree, the intention is to keep the fruit as close to the framework branches as possible.

Left: A central leader tree. Apples are often trained in this manner. Note that the tree has a straight central trunk with numerous side branches.

Right: Aim to establish a ‘scaffold’ of layers of branches progressively up the trunk.

Central leader trees are always narrower at the top to let light into the lower part of the tree.
When to prune fruit trees

The only fruit trees which require a defined pruning period are apricots which should be pruned very early in the dormant season as soon as the leaves turn yellow, around late March early April. Apricots can pick up a fungal disease very easily and it is advisable to prune when the sap flow has stopped completely. If you miss the ‘correct’ pruning time for apricots you can still prune through to late June, but try to read the weather to have three or four fine (preferably windy) days so the cuts will have time to dry out. Winter pruning time for other fruit trees is from autumn, when the tree is beginning to lose its leaves, through to spring, as the flowers are beginning to open.

Summer pruning can be carried out before or after harvest. Note that overpruning can lead to sunburn damage on exposed branches.

Winter pruning promotes vigorous growth;
Summer pruning inhibits growth.

How high will the tree grow?

You should only allow the tree to grow as high as you want it to grow. We are sure you won’t want to use a ladder to pick the fruit, so identify anything that is growing higher than about 2.5 metres and simply cut it off.
Learning to prune

There are many ways of pruning fruit trees, and possibly the only consistency is that no two orchardists will prune a tree in exactly the same manner, but they will follow the same basic rules for each particular tree type.

For the home gardener, trial and error is the best way way to learn how to prune. It may take three or four years before you become adept at pruning adequately if not totally successfully.

If you are unsure as to where the fruit tree is going to flower then wait until the tree is in bloom before pruning (except apricots). The experience gained by observing where the flowers are produced will help you understand some of the following.

The thought of pruning trees can be daunting and confusing, but it is not necessary to be overly concerned, a 'mistake' will soon be covered by new season's growth.

Fruit trees are hardy and can withstand severe pruning. It is unlikely that pruning a fruit tree will damage it.

Pruning specific fruit tree types

In the following pages we discuss detailed pruning. Pruning methods differ slightly for specific tree types because of the type of wood on which fruit is borne. Different fruit types variously bear on spurs, sprigs or laterals; or on first year, second year and older wood.

The next few pages list alphabetically the major fruit tree types and their specific pruning needs.
Almonds fruit on semi-permanent spurs and sprigs. Always prune an almond when it is planted during the dormant season.

*Almond renewal system*

Almonds are particularly easy to prune. After establishing the framework of branches (from about tree age of six years) and keeping the centre free from branches, the only pruning needed for almonds is to remove one of the framework branches each year. This allows new wood into the tree to replace the framework branch. Prune the top of the higher branches to keep the height down to a manageable 2.5 metres.

Above: Spent almond spur
Apricots fruit on one-year-old ‘sprigs’ and one-year-old branches
Apricots are prone to bacterial canker and should be pruned during late autumn in fine, dry and preferably windy conditions to avoid the risk of infection entering through the pruning cuts. At this time of year the sap has stopped flowing and there is less risk to the tree.
When pruning apricots at winter planting time, protect the cuts with a wound sealer. This initial pruning is the only time apricots should be pruned in Winter.
Apricots fruit mostly on semi-permanent sprigs which should be renewed about every three years. They also produce on permanent, short, fruiting spurs.
Apricot flower buds are easily identified. They form a cluster of buds that also include a leaf bud and they are on the short sprigs and along the branches of one-year-old (last year’s) wood.

Managing apricot sprigs
As pruning is carried out to establish the framework of branches, shorten the longer sprigs (over 300 mm) and remove any if they are crowded. The second year wood does not produce flower buds, but a new sprig extends and produces flower buds on the extension.
After the third or fourth year the original sprig has probably lengthened to the extent that the fruiting area is too far out from the framework branch and should be cut right back to a young sprig (if any) which has grown from the base of the original sprig (see third year picture at right) or cut right out if there is another young sprig to take over in the vicinity. Keep this system of detail sprig pruning going each year.
Apples and pears fruit on lateral, non-vigorous wood that is at least two years old. Many cultivars of apples and pears produce fruiting spurs readily. Some, like ‘Granny Smith’ bear fruit on the ends of laterals as well as a few spurs. There are several types of fruiting habits for apples and pears, but for the most part they are covered by two terms, ‘Spur bearing’ and ‘Tip-bearing’.

Apple trees should be pruned when planted and then regularly for the first few years thereafter. The horizontal laterals should be ‘tipped’ the first year and allowed to ‘harden up’.

‘Tip-bearing’ trees tend to produce fruit towards the ends of relatively young laterals, while ‘spur bearing’ trees tend to from spurs easily and do not grow as vigorously. Spurs can be encouraged to form on ‘standard’ trees by gradually shortening laterals back closer to the main framework over a period of several years, making certain to leave some flower buds each time you prune the lateral.

Flowers are often formed on spurs and the spurs can be encouraged to form more readily if the lateral is growing horizontally. Select laterals that are already tending towards horizontal or plan to bend them down with a weight. These laterals will become the basis of the fruit producing area of the tree and the aim will be to turn them into fruiting spurs spaced comfortably along the main framework branches.

‘Tip-bearing’ tree laterals should be left untipped as the young tree may produce only on the tips for the first few years. During the second year flowers buds should be prominent, particularly along the laterals.

Each flower bud is a potential fruiting spur and each lateral may have several buds. The following year shorten the lateral back to two flower buds (spurs) and back to one flower bud (spur) the year after.

As previously mentioned, if in doubt, wait until the tree flowers to establish where to prune.
**Spur maintenance**

This process is carried out by removing any broken or worn out spur and replacing it with another nearby lateral.

Often a lateral grows out from an established spur and this lateral can be trained by pruning and weighting to become a replacement spur. Spurs should be removed and replaced after about six seasons.

![Image of pear tree branches with spurs]

A branch weight can be used to force lateral growth.

At right, the framework branch of a pear tree showing several stages of spur renewal along the branch.

1. The pruner decided to renew a spent spur by leaving a one-year-old lateral growing from the spur. It should be tied or weighted down to make it grow horizontally.

2. The horizontal lateral was ‘tipped’ during the previous pruning season and produced flower buds the following growing period. The two-year-old lateral was then shortened slightly (at the time of the photograph) and will be shortened again each year until it resembles the older spurs further up the branch.

3. The stub of an old spur which has been removed due to becoming uneconomical.

4. A spur which is becoming uneconomical. This spur will probably be removed next season or renewed if a new lateral grows from it (as in item 1) or a new lateral shoots close by, from the main branch.

5. Healthy spur.
Cherries fruit on one-year-old wood and on the tips of annually lengthening fruiting spurs. Young cherry trees often have only two strong, long branches which should be pruned to about 500 mm or slightly longer if planting when dormant.

After establishing the framework branches cherry trees require very little pruning. Broken branches and any branch that is crowding out another should be removed.

Cherries fruit on the ends of short spurs which produce a multitude of flowers each year. When harvesting cherries it is important to gently pick off the fruit with the stem intact; avoid breaking the fruiting spur from the tree.
Plums fruit on one-year-old wood, on older wood and often form spurs also. Most fruiting will occur on wood which is two years old. They also produce freely on permanent fruiting spurs. If allowed to grow unchecked the plum tree will become unruly and produce fruit in large quantities which will cause the branches to break from the weight. Plums should be pruned to keep the fruit close to the main framework branch. As a ‘rule of thumb’, pruning plums is simply a matter of pruning off anything growing out of reach and leaving the rest.
Peaches and Nectarines

Peaches and nectarines fruit on one-year-old laterals.
It is important that the last season’s growth of peaches and nectarines be pruned to ensure adequate growth of fruiting wood and to keep the fruit close to the main framework branches.
Follow the earlier instructions on the establishment of the framework of branches (either vase-shape or central leader) and shorten back the laterals slightly. Thin the laterals if they are overcrowded by cutting them back to two buds from the framework branch. New laterals should grow from these buds next year.

The aim is to have new laterals shooting from the main framework each year, thereby keeping the fruit close to the main branches.
Remove those branches (last season’s laterals) which carried the fruit last season (see picture). They will have produced new growth on the ends or produced new side laterals which will bear fruit too far from the main framework of the tree. The best fruit is produced close to the stronger main branch as it is less prone to breaking off or to wind damage.

Above: A main framework branch with one-year-old laterals unpruned.
Left: The same main framework branch pruned.
Below: Previous year’s fruiting lateral (1) showing new extension growth (2). The weight of the fruit has caused the lateral to hang down. New fruit buds are now produced on the extension. If fruit is allowed to form here it may cause the lateral to break off.
Deciduous flowering trees

The method of pruning flowering trees is very similar to that of pruning fruit trees. To have an ornamental flowering tree with a framework of well balanced branches is more desirable than one which has been left to make its own shape and may end up with only a few long, slender branches. Your trees will have a better shape if they are pruned at least for a couple of years.

When to prune a flowering tree
Prune flowering trees after the flowers have faded. It would be a shame to prune your tree before it has reached its full bloom beauty and after all, that is the reason for planting that cultivar in the first place.
Follow the basic instructions set out early in this document. Prune shortly after the petals have dropped but before any substantial shoot growth has occurred.

Pollarding flowering trees
There are many flowering trees which lend themselves to pollarding to encourage the formation of long ‘whips’ that can be completely covered with blossom each spring. The genus Prunus is particularly suitable for the method of management.
After the tree has been pruned for the first couple of years to establish a main framework of branches and immediately after the flowers have faded, each main branch is cut drastically back to the main frame. Providing the tree is healthy, new shoots will sprout all around the branch stubs. These shoots will make long, slender growth during spring and summer and will carry many flowers the following spring. The flowers on the long ‘whips’ begin to open at the base and gradually open in succession along the entire length.

Heavily pruned flowering plum Prunus ‘Elvins’ sends out new flower-laden branches each season. Such a tree can also be pollarded... Pictured at Cherry Tree Grove Retirement Village, Victoria, Australia.
Deciduous ornamental trees

Pruning flowering and ornamental trees (after the initial shaping of the trees in the first two or three years) is usually only necessary to cut out any damaged or unwanted branches or is done to improve the aesthetic value of the tree or to make the tree fit a specific purpose.

Pruning, particularly in its early life will generally improve the quality of any flowering or ornamental tree by establishing a good strong shape for the future. The shape of most weeping trees is strongly enhanced by pruning for the first few years after planting.

Deciduous ornamental trees have a natural growth habit and are generally left to make their own shape. Many assume a multi-stemmed habit, forming a dome shape while others grow with a dominant centre branch which often dictates a pyramidal shape. Generally the only pruning necessary for deciduous ornamentals is to cut out any damaged or unwanted branches as they occur.

**Pollarding deciduous ornamental trees**

Heavily pruned street trees are examples of pollarded ornamentals which, if left to grow naturally, could be too large for the site. This regular lopping of the branches back to short branch stubs is called ‘pollarding’. The pollarded tree assumes a rounded head and become somewhat uniform in style.

Pollarding an ornamental tree situated near a driveway or footpath should be postponed until the tree has attained enough height give pedestrians and vehicles adequate clearance. Each main branch is then cut back drastically to the main framework of the tree, allowing masses of new growth shoots to emerge from around the stubs next season. Suitably selected trees can achieve quite elegant effects in the garden through pollarding.

**Replacing a damaged central leader**

Often the central leader of a tree becomes damaged which may spoil the potential shape of a young tree.

A side branch may be in a position to be trained upwards to assume the role of central leader, replacing the damaged leader.

Cut the damaged leader back to a bud or branch. If it is a bud, train the growth from that top bud straight upwards by attaching a splint along the upper part of the trunk and training the newly growing shoot up along the splint.

If an existing branch is to be used as the central leader replacement and assuming it is young and flexible, gently pull the branch upwards and bind it to a splint. Budding or PVC tape is ideal for this purpose.

Sap flows strongly to branches that are vertical and the selected branch should soon strengthen and become established as the central leader.
Weeping Trees

With the exception of weeping maples (Dissectum group) which should be left to establish their own style, weepers perform better if they are pruned heavily in the first few years to establish a growth pattern. Note that the weeping birch has its own peculiar pruning method which is explained later.

Weeping trees are generally trained in the form of a ‘beach umbrella’. This is easier to achieve if the tree is pruned hard for two or three years after planting.

Each weeping tree cultivar has its own natural growth habit and may vary from the weeping cherry pictured. Following the general principles explained here and a little trial and error should give you satisfactory results.

**Pruning a newly planted weeper**

The following diagrams illustrate how to prune a weeping tree at planting time when the tree is dormant. Pruning at this time and in this manner should encourage strong growth the following season.

**Pruning weepers**

To establish an ‘umbrella’ shape, always take out the branches that are growing straight down and concentrate on encouraging the main framework growth to outwards similar to the spokes of a beach umbrella. The aim is to leave the space under these branches clear, encouraging vigorous new growth on the ends of the ‘spokes’. The main framework branches will strengthen and the shape will become established. Remove any upward growth to maintain the height of the tree as you require.

Use the plan diagram for a vase-shaped tree as a general indication of how to prune to establish the ‘spokes’. Always prune to an upward/outward facing bud.

As a particular tree matures we would prune it less severely each year, except for the branches growing straight up or straight down under the main framework branches.

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Above Left: This *Prunus subhirtella* ‘Pendula Rubra’ has a natural unruly growth habit and if left unpruned would extend upwards considerably. Above Right: Shaped and directed by pruning the new growth will become covered with flowers the following spring.
Weeping Birch

*Betula pendula* ‘Youngii’, the weeping birch, presents a slight variation to other weeping trees. The existing branches usually have side laterals where the pruning cuts would normally be made. Each side lateral then has buds quite near the original branch facing in an ‘odd’ direction. Cut the main branch back to the lateral and then shorten the lateral back to a bud close to the main branch.
Walnut
Chestnut
Mulberry
Persimmon
Quince
Medlar

Pruning of these fruit types is minimal. It is required only to encourage new growth from time to time, although it may be prudent to prune in the early years to establish a good framework of branches.

Chinese Gooseberry (Kiwi Fruit)
These produce on the first six buds which grow on last season’s canes. The long, one-year-old canes should be shortened to the sixth bud.

Fig
Figs produce in the leaf axils of the growing tips. The embryo figs that did not develop into mature fruit before the onset of winter begin to grow again the following spring. As the branch extends, the fruit becomes further away from the tip and in turn becomes the oldest fruit on the tree. Meanwhile, new fruit is continually being formed as the branch grows outwards.
Rejuvenation pruning could be carried out by removing the oldest branch back to the base each year.

Grape
Following the increased popularity of grape vines over recent years, pruning methodology has been refined and adapted markedly and we recommend that gardeners seek information from the many sources of grape pruning information available in books and on the internet.

Further information
This brief guide is not intended to be a definitive volume and we suggest that, as with grapes, you have available to you a myriad of literature in many formats from which you can choose to further understand the intricacies pruning of trees.