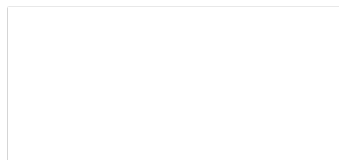


A short guide to Apple Tree pruning



Clyde Valley orchards



When to prune

Apple and pear trees should be pruned in the dormant season, i.e. in winter, when the leaves are off the tree. There are occasions when summer pruning may be required however this tends to be for developing cordons and espaliers and is not covered in this guide.

Before you start

Stay safe - if you need to go up a ladder, consider buying a special tripod ladder that will let you get nice and close to the branches, it can also be used for picking fruit as well.

A sharp pair of secateurs and quality pruning saw are a must, some meths and a cloth for cleaning equipment between trees is also a good idea.

Don't get hung up with diagrams, your tree is unlikely to look anything like the books you read!

Pointers for established trees (5 – 20 years)

How much to prune?

Aim to take around 15% of the overall canopy off in any one winter. Work around the tree evenly and keep an eye on your pruning pile - if it's looking a little big, STOP – pruning trees is not a one off event!

Caution! The more you prune, the stronger the regrowth. If you prune too hard, your tree is likely to produce upright branches called watershoots. These can tend to crowd the crown. If the watershoots grow in a convenient place then they can be pruned to fill gaps by pruning to about a third to encourage branching, otherwise remove them from their point of growth

Think of what you're trying to achieve.

Your aim is to take out a bit of old wood each winter, to stimulate new. But the majority of the fruiting wood should be quite young - one to four years old, which is the wood that fruits best.

Also aim to create an open centre to your tree. This allows more light and air into the canopy to ripen the fruit and prevents diseases.

Avoid trimming your tree

Try to stagger your pruning cuts throughout the canopy. That way, the regrowth will be even. If you only prune the top branches, this is where all the new growth will shoot up from, giving you a thicket of young, non-fruiting shoots that you'll just end up pruning off every year in exasperation. If your tree is tip bearing or partial tip bearing then this will reduce your crop significantly.

Think of it as a thinning out process, try to aim for good visual and weight balance throughout the tree.

What size of cut?

Even with very old trees, think twice before removing very large limbs. These are anything more than 10-12cm (4-5in) in diameter. If it really needs to be removed trace it up and look for a suitable point to cut and avoid leaving a stump.

By the same measure, avoid "fiddly" pruning. Better to make one cut rather than a load of small ones. A fully pruned tree might only need 10-20 pruning cuts in total.

Pruning paints and wound sealers

There is no need to use a pruning paint for cuts on apple or pear trees. However, these are sometimes used on plums, cherries and other members of the *Prunus* family. These are particularly susceptible to disease through pruning cuts. However this pruning is best carried out during the growing season.

Problems

Grey/green crusty growths on the branches - this is lichen which is harmless to your tree and does not require any action.

Shriveled, 'mummified' fruit clinging onto the shoots - these will have been infected with brown rot in the autumn and should be pruned out and burned.

Dark, flaky, shrunken patches on some branches which may be dead beyond the patches - this is apple canker and affected shoots and branches are best cut out unless it is in a major limb or the main trunk

A lot of dead branches with no apparent cause - this is a worrying sign as it may mean the tree has an underlying root problem such as honey fungus. If the dieback continues you may want to get it looked at by a professional.

Pointers for young trees (1 – 5 years)

One-year-old trees are called ‘maidens’ and are sold as feathered or unfeathered. When buying ensure that you deal with a reputable company and check that the trees have strong root systems.

- **Feathered maidens** are trees that developed side shoots from the main stem. This saves a year of formative pruning. They should have a well-balanced, goblet-shaped branch system.
- **Unfeathered maidens (maiden whip)** are trees without sideshoots, forming just a single stem. They are often cheaper than feathered maidens and just as good. Some cultivars do not produce feathered maidens



Feathered maiden

First year

- Cut back the central stem just above a wide-angled, strong shoot, approximately 75cm from the ground, ensuring there are three to four evenly-spaced shoots below. If a dwarf bush is required for apple trees on very dwarfing such as M27, cut back to strong shoot at 60cm
- Shorten these branches by half to two-thirds, cutting just above an outward-facing bud
- Remove any remaining lower branches

Unfeathered maiden

First year

- Prune to a bud 75cm above the ground, with three or four healthy buds below. On very dwarfing rootstocks, such as M27 reduce this to 60cm.

- Such pruning will stimulate production of strong vigorous shoots from which the primary branches can be selected

Second year

- As a result of the initial pruning the tree often produces a very strong topmost shoot. If the topmost shoot is too vertical and dominant, remove it completely cutting above a wider-angled side branch instead
- Select the best three to five shoots to form the main framework of branches and remove any others. Shorten the selected shoots by half, cutting just above an outward-facing bud to encourage the formation of a goblet-shaped branch structure. If the shoot is too horizontal prune to an upward-facing bud
- Remove the remaining lower branches

The year following (second year for feathered and third year for unfeathered maidens)

- Shorten the previous year's growth on the main stems/branches (primary branches) by one third, cutting just above a healthy outward-facing bud, leaving eight to ten branches to form a permanent framework
- Leave the side branches arising from the main stems unpruned
- Only remove the side branches if misplaced, crossing or growing towards the centre of the tree. Lightly thin out if crowded
- Remove any strongly upright shoots that developed at the top of the tree

In future years revert to the guidance for mature trees.

Fruiting

- Do not let the young tree fruit in the first year. Remove any fruit as soon as they are seen
- In the second year, if the tree is establishing and growing well, you may let one or two fruit develop; this can be useful to check if you have the expected cultivar as mistakes can sometimes happen

Problems

- Young trees can be prone to both rabbit and deer damage, once planted ensure that a suitable protective mesh is used to surround the whole tree. A tree can be destroyed in 5 minutes by a hungry rabbit!
- When planting ensure all the grass is removed from the base of the tree ideally to a diameter of 1 metre, install a mulch mat to prevent regrowth.

Identifying fruit buds

Fruit trees produce two types of buds:

- Fruit buds contain flowers that if pollinated will carry fruit. Growth buds will develop later on behind the developing fruit
- Wood or growth buds develop into a new shoot carrying carry leaves, but no flowers

By identifying which buds are which, you can avoid excessive removal of potentially fruiting wood and ensure a good crop.

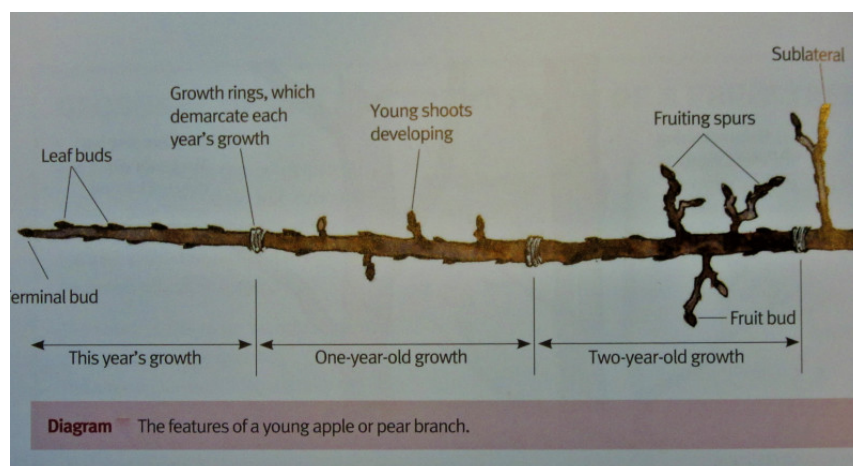
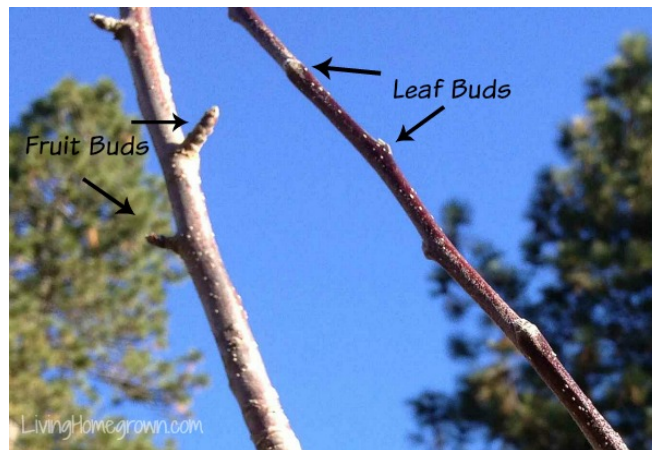
Fruit buds

By November a plump, round bud will have formed which carries the flowers in April and May. The bud scales on fruit buds are typically downy, especially on apples, pears, peaches and nectarines.

In summer, fruit buds usually have a surrounding cluster of leaves.

Wood or growth buds

Wood or growth buds (i.e. buds carrying leaves but no flowers) are easily distinguished from fruit buds by being slender, pointed buds borne in a leaf axil. These buds are usually much smaller and more insignificant than fruit buds.



Restorative pruning

If you identify a tree that requires restorative pruning then it is likely that the tree has been neglected for a number of years. Pruning needs to be undertaken over a number of years as pruning back hard in one year only encourages excessive, vigorous and unfruitful growth.

Only trees with a sound, healthy trunk and main branches that show signs of having grown and cropped well in the past are worth attempting to renovate.

If the tree has grown very tall or all the growth has moved to the crown you may want to consider replacing it with a new tree on a restricted root stock, or if the tree is of sentimental value consider taking bud wood and arranging for grafts to be made. These trees will be easier to manage and take up less space per kilo of yield than a big old tree. In saying that, older fruit trees are valuable for wildlife and provide a focal point in the garden. As long as the tree is healthy and poses no safety risk retaining old trees can be beneficial. If the tree is an old cultivar or unknown or possible rare, then renovating the tree to provide bud wood will be worthwhile. If you don't know the identity of your tree, local fruit experts can often help. By propagating old cultivars gardeners can help to maintain the genetic diversity and heritage of our local fruit trees.

How to prune

Basic principles of tree renovation

Neglected trees often have a crowded main branch framework so the objective of pruning is to improve branch spacing, allowing light and air to reach all parts of the tree and ease picking and maintenance. An open, goblet-shaped branch structure is the ultimate aim.

Size of pruning cuts: When pruning, always cut to the main stem or trunk, or back to a well-placed outward-growing side branch. The side branch should be at least one third of the diameter of the branch being cut out; if smaller (i.e. weaker) they have a tendency to die back and produce watershoots

Where to best make a cut: The ideal point to make a cut is immediately outside the 'collar' (i.e. to retain the collar), which is normally visible as a distinct bulge where the branch joins the trunk or main stem. Branches should neither be cut back flush to the trunk or main stem nor left with a large snag as these will result in poor healing or excessive dieback.

Amount to remove: Aim to remove no more than 25 percent of the canopy in any one year, saving the rest for succeeding years if there is a lot to remove. Removing more than one quarter of the canopy in one year can lead to undesirable regrowth of over-vigorous watershoots. Excessive pruning stresses the tree which will strive to restore the balance of roots and shoots. Also a mass of vertical shoots crowd the crown and require further thinning.

After pruning: Mulch renovated trees in the spring following pruning, with a general balanced fertiliser to encourage good regrowth. As with new trees create a circle free of

vegetation around the base of the tree prior to mulching and applying fertiliser. The circle should be at least 60cm but ideally 90cm or more in radius.

Step by Step for large overgrown trees

First, remove all dead, diseased and broken branches.

Lower branches that receive little light and obstruct passage should be removed entirely or pruned to a more upright shoot.

Remove branches growing into the centre of the crown and also any crossing branches.

Reduce overlong and unfruitful growth to a well-placed upward and also outward-growing side branch. Unless necessary try to avoid removing limbs over 20cm (8in) in diameter.

Where the main branch framework is crowded, thin out surplus branches. Aim for a canopy with 50-60cm (20in-2ft) gaps between branches (measured from with half way up or along the branch). Remove surplus branches completely or prune to a well-placed side branch that is one third of the diameter of the branch you are removing.

If more than 25 percent of the canopy needs to be removed, spread the pruning over two to three years.

Managing watershoots:

In the first year after pruning, remove any watershoots growing directly from the trunk or from the lower parts of main branches and cut out half of the remaining upright watershoots from their base to leave evenly spaced shoots. Aim to keep the centre of the crown open

Tip-prune the remaining watershoots, simply cutting off the top 10cm (4in) or so, to encourage branching

In the second year, remove, at the base, half the watershoots retained in the previous year. Prune the remaining shoots to an outward-facing bud or branch, to encourage an open-centred branch structure

In the third year, continue to prune to outward-facing buds or branches. Fruit buds should have started to form on the new shoots. Where this has occurred, revert to routine winter pruning or consider adopting regulated pruning that gives good height control while retaining fruiting wood

Start removing the older, weaker spurs on the original branch framework in favour of new growth that is maturing, beginning to fruit and can replace the older spurs