

## Why do we graft?

Grafting has been used for fruit tree propagation for centuries. Grafting allows us to preserve and extend the life of fruiting trees that are of value to a grower. Most apples need to be cross-pollinated (from a different variety) in order to set fruit. Trying to grow a seed from these cross-pollinated apples will result in a hybrid and may not have the characteristics that were desired. Grafting ensures that the desired characteristics are perpetuated in the new growth.

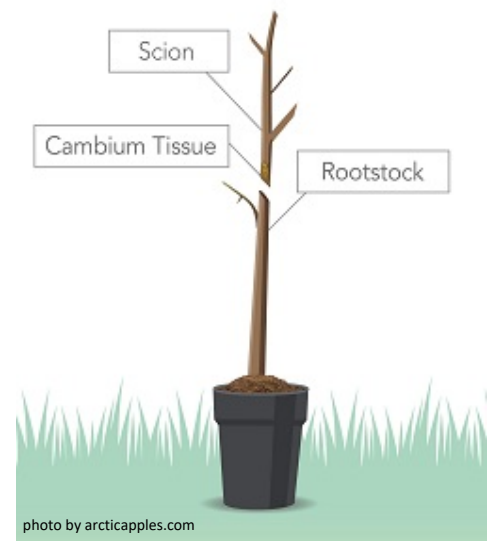


To begin, rootstock appropriate to fruit tree grafting is obtained. We use M-111 rootstock as it is good in multiple soil types (wet, dry, sandy, or clay), is resistant to known apple diseases, promotes fruiting at earlier ages and grows just slightly smaller than standard height (~20-25 ft), and handles pruning well.



Obtain scion material from the desired tree by cutting the new growth that grows at a 90° angle from a branch while the tree is dormant (in December and January). In our case, we want to preserve historic trees that have desirable qualities such as fresh eating or good for cider. The cut ends are dipped in wax and then the scion bundles are placed in a plastic bag with a damp paper towel and placed in cool storage until grafting.

Grafting occurs when the scion is joined to the root stock. The two parts will heal over with callus tissue once the cambium of each joins together. The cambium is the active growth layer in the tissue of the tree. Once joined, water and nutrients can be transported throughout the new growth. For the graft to succeed, the cambium layer of the scion must be lined up with the cambium of the rootstock. Immediately after grafting, the scion and rootstock are held tightly together by grafting tape or parafilm to protect against pathogens and water damage. The parafilm also helps to keep the two cambium layers together



This type of cleft grafting works best early in spring when the trees are just coming out of dormancy. Within a month, the scion material will start producing leaves if the graft is successful. In some cases, grafted trees could begin to produce fruit in 3 years.