Basic Pruning Techniques

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The following pruning information and instructions are designed for small to medium sized pruning jobs.

For above ground work where a chainsaw is needed, or for tree removal: the work should be done by a ISA Certified Arborist with adequate liability insurance.

Why Prune?

(Specify Your Objectives)

- Safety Concerns: people, traffic, property, infrastructure
- Builds a strong and lasting structure
- Enhances vigor and long-term health
- Improves tree aesthetics
- Enhances or maintains designated function
Public Safety

Are conifers the best choice along streets?
Public Safety

It pays to research species and their growth habits...
Establish Branch Structure

Street Trees: **8 feet** over sidewalks and **13½ feet** over streets
Establish a Leader

Codominant Top

Choose the most vigorous of the 2...

One cut to restore the lead
Issue: Included Bark

Result: a weak branch attachment and potential failure
Issue: Dead Wood

Remove ASAP, regardless of season!
Issue: Stubs

Remove at any time. Stubs invite insects and diseases into the tree.

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Issue: Suckers

Remove suckers from their point of origin on the root and avoid creating stubs!
Issue: Water Sprouts

Often occur because of excessive pruning!

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Questions to be Answered

• Why are you pruning?
• What are the types of pruning?
• How do you prune correctly?
• When is the best time of year?
• Where do you start?
Thinning

Selective removal of branches to increase light penetration and air movement through the crown.

Reduce weight of heavy branches.

Too much thinning can result in production of water sprouts.
Crown Cleaning

Selective removal of dead, diseased, broken, or weakly attached branches from a tree crown

Regular pruning will correct small problems before they become large problems
Raising

Remove lower branches to provide clearance for buildings, signs, vehicles, or pedestrians.

Avoid excessive removal of lower branches while tree is still young!

*Lower branches are important in the development of trunk taper and the structural stability of the whole tree.*
Crown or Branch Reduction

Used to reduce or redirect a tree away from an object

Limb is pruned back to its point of origin or back to a lateral capable of assuming dominance

Power companies use this type of pruning

Right tree, right place—planning to avoid future problems!
Structure Restoration

Trees that have been topped, sustained storm or vandal damage or have not been pruned

The selective removal of sprouts and branches to create a desired tree structure

The removal of all stubs and dead branches

Restoration usually requires several years of pruning

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Questions to be Answered

- **Why** are you pruning?
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- **How** do you prune correctly?
- **When** is the best time of year?
- **Where** do you start?
Pruning Tools

- Chainsaw
- Long reach pruner
- Bypass hand pruner
- Folding saw
- Lubricant
- Pruning saw
- Scabbard
- Small bypass lopper
- Large bypass lopper

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Pruning Tools

Bypass are pruners superior to anvil pruners!

Image source: farmerfredrant.blogspot.com

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How Much to Prune?

Regardless of pruning method remove no more than 25% of the total foliage in one season.
Honor the Branch Collar

The collar is formed by overlapping branch and trunk tissue which makes the branch union very strong.
Bark that has been pushed up into a ridge as the branch and trunk grow. Indicates a strong branch attachment.
Three-Step Pruning Process

When branch diameter > 1 inch

Three Step Process prevents the weight of the branch from tearing bark off the trunk:

1. First Cut – ¼ to ⅓ through underside of branch

2. Second Cut – Above first cut and all the way through branch. This cut will leave a stub.

3. Third Cut – Remove remaining stub. Do not cut into the branch collar or branch bark ridge.
Three-Step Pruning Process

1. Cut UP
2. Cut DOWN
3. Cut OFF (remove stub)

Not always a defined collar, look for swelling
Three-Step Pruning Process

DO NOT VIOLATE THE THREE-STEP PROCESS FOR LARGE BRANCHES!

If three step limb removal is not followed, the weight of the branch will tear the bark off the tree resulting in a larger wound.

The first step in the three step process is the undercut and it will prevent this from occurring.
Callus Wood

Circular callus wood = good wound closure

Oval callus wood = pruning cut was made too close to the trunk
Included bark is bark that is squeezed between two stems
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Image source: treedictionary.com

Image source: Ed Gilman
Included Bark Failures

Image source: lukenstree.com/blog
Included Bark Solution

Remove included branch early and restore central leader
Pruning Don’ts: Flush Cutting

Inside the branch collar is the **Branch Protection Zone**

This zone has chemical and physical properties that slow or stop the spread of decay into the trunk.

Flush cutting removes this protection zone and allows decay inside the tree.
Collar: area where a branch joins another branch created by overlapping vascular tissues from both the branch and the trunk. This area has chemically and physically modified tissue that retards decay.
Pruning Don’ts: Flush Cutting

Trees react poorly to injuries such as flush cuts or torn branches.

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Pruning Don’ts: Leaving Stubs

Branch stubs provide entry points for insects and diseases to attack and damage the tree.

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Pruning Don’ts: Topping

Topping trees promotes bad branch structure and allows decay into the wounds.

Image source: greensboro-nc.gov
Pruning Don’ts: Single Cutting

A permanent wound has been needlessly created and may well allow disease to enter the main stem of this tree.
Pruning Don’ts: Postponing

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Timing: Winter vs. Spring

(Spring snow crabapple)
Timing: Other Considerations

Winter (dormant) Pruning: Tree pests less active

Avoid pruning when trees are:
1) Emerging from dormancy in the spring (bud break)
2) Entering dormancy in the fall (leaves turning color)

(Spring snow crabapple)
Questions?