

CONTENTS

iv	PREFACE
1	SECTION A ABOUT THIS GUIDE
	1 What is the ABCs Field Guide to Young & Small Tree Pruning?
	4 Introduction to the ABCs Field Guide
7	SECTION B BRING YOUR TOOLS
	8 Gather Your Tools
	10 Terminology
	12 Pruning Cut Types
	14 Removal Cut Objectives
	16 Reduction and Heading Cut Objectives
	18 Removal Cut Procedure – Branches with a Branch Collar
	20 Removal Cut Procedure – Branches without a Branch Collar or Branch Bark Ridge
	24 Reduction Cut Procedure
	26 Heading Cut Procedure
	28 Pruning Cut Tips
31	SECTION C START PRUNING – THE ABCs METHOD
	32 A – Assess the Tree – Determining The Pruning Dose
	36 A – Assess the Tree – Tree Structure & ABCs Pruning Forms
	40 A – Apical Dominance Pruning – A-Form Trees Only
	44 B – Bad Branches
	48 B – Bad Branch Attachments
	50 C – Competing Branches – Clearance/Branching Height
	54 C – Codominant Stems
	56 C – Competing Laterals
	58 C – Multiple Attachments – Horizontal Spacing
	60 C – Vertical Spacing
	62 C – Crossing Branches
65	SECTION D OTHER IMPORTANT PRUNING TIPS
	66 Timing of Pruning
	68 Pruning Interval
	70 Pruning Wound Dressing and Treatments
	72 The DON'TS of Tree Pruning
75	SECTION E EXTRAS
	76 Determining a Branching Height
	80 Using the ABCs – Before & Afters
	86 ABCs Flow Chart



Pruning methodologies used today often ask the pruner to “imagine” what the tree should look like, and can be very technical. The ABCs emphasizes pruning the tree in front of you, and provides just enough technical background to help you understand how to prune.

Preface

Each year, significant time and expense is dedicated to tree maintenance – the majority of which involves tree pruning. As arborists and trained observers, we see the results of improper tree pruning every day. In addition, we see that most young or small trees are not pruned by professional arborists, but rather by homeowners, municipal highway crews and ground maintenance workers who likely have little or no training in tree pruning.

As instructors, we have experienced the challenge of teaching proper tree pruning. While tree pruning is often called an art, we are certainly not artists or art teachers. However, a strictly scientific approach to tree pruning often results in glazed over looks from trainees. We recognized the need for a more practical and logical methodology for presenting and teaching pruning. We asked ourselves, “How much technical knowledge is necessary to properly prune a tree?”

We decided to create a pruning method that was easier to teach, learn and remember, and that addressed the pruning needs of most small and young trees. We identified what we believe to

be the primary issues and challenges to successful pruning and tree maintenance. These topics and techniques became the foundation – the ABCs – of this Guide to teaching, learning and completing proper tree pruning.

Pruning young and small trees can be accomplished by anyone with the desire and the proper hand tools. The ABCs presents a simple stepwise method to pruning that anyone can follow and remember. If completed properly, it may increase the lifespan of a tree by eliminating common defects.

In order to properly prune small trees, a limited knowledge of the science behind tree pruning is necessary. We provide enough technical background to help you understand how to prune, without overwhelming you with scientific details.

Typical pruning methodologies used today ask the pruner to “imagine” what the tree should look like, or to prune to an idealized set of protocols. Our protocols for making pruning decisions are instead based on observation of the tree in front of you, and then focusing on what can be done to improve the health and structure of that particular tree.

The ABCs is a step-by-step methodology that logically identifies where to start and when to stop pruning, and also provides a sequence that is easy to recall in the field.



Maintenance pruning is not an art. Therefore, it requires a methodology for use in the field that logically leads the pruner through branch pruning decisions, identifies where to start and when to stop pruning, and is easy to recall. The ABCs guides the pruner from start to finish and helps ensure that pruning is completed properly on the majority of trees in the landscape.



This Guide is designed for use on trees that can be pruned from the ground, although these principles can also be applied to larger trees. We believe that our structured, easily recalled methodology will help you improve the quality of your tree pruning efforts and provide you with the satisfaction of knowing that you have completed them properly.



Pruning Cut Types

A pruning cut is one of the “tools” you use in tree pruning. The objective of a pruning cut is to remove a portion of the tree, such as a branch or a portion of a branch. Pruning cut types include removal, reduction and heading cuts.

No pruning cut should be made unless a specific objective is identified for making the cut.

The possible objectives of each cut type and how to make each cut are detailed in the remainder of this section.

OBJECTIVE

- ▶ Learn the three types of pruning cuts.

APPLICATION

- ▶ **Removal Cut**
Removes the entire branch at its point of origin.
- ▶ **Reduction Cut**
Shortens the parent to a lateral that is at least $\frac{1}{3}$ the diameter of the parent.
- ▶ **Heading Cut**
Shortens the parent, but makes the final cut between laterals, or to a lateral that is less than $\frac{1}{3}$ the diameter of the parent.

REMOVAL CUT



Removal cuts remove the branch at its point of origin.

HEADING CUT



Heading cuts shorten the length of the parent but the final cut may leave a stub or may be cut to a lateral that is less than $\frac{1}{3}$ the diameter of the parent.

REDUCTION CUT



Reduction cuts shorten the parent to a lateral that is at least $\frac{1}{3}$ the diameter of the parent.

B – Bad Branch Attachments

Bad branch attachments have an increased potential to break or fail, and this may shorten the life of the tree. Bad attachments are identified by a narrow angle of attachment (termed a V-crotch) between a branch and its parent, along with several additional indicators. The presence of bark trapped between the branch and its parent (included bark) greatly increases the potential for bad branch attachments to break.

OBJECTIVE

- ▶ Learn how to identify the characteristics of bad and strong branch attachments.
- ▶ Learn how to prune branches with bad branch attachments.

APPLICATION

Identify bad branch attachments by:

- ▶ Narrow or V-shaped angle between the branch and parent and
 - A seam between the branch and parent instead of the branch bark ridge.
 - Swelling may be present at the base of the seam.

Stronger attachments are formed by:

- ▶ Wider angle of attachments or U-shaped angles.
- ▶ Presence of a branch bark ridge.
- ▶ The diameter of the lateral branch is less than $\frac{1}{2}$ the diameter of the parent at the attachment.

Remove or suppress bad branch attachments:

- ▶ Start with the largest branches, lowest on the tree.
- ▶ Use reduction or heading cuts to avoid over-dosing if there are many branches with bad branch attachments.
- ▶ Do not completely remove branches that are directly next to each other or above/below each other. Instead, use a reduction or heading cut on one of the branches.

Measure your pruning dose by placing each branch pruned in a single pile and quantify the percentage of live crown removed.

- ▶ Stop pruning once dose is reached, or proceed to the next branch or step if dose has not been reached.



The left branch has narrow angle or a V-shaped attachment and a seam instead of a branch bark ridge. This attachment is considered a bad branch attachment because it is weakly attached to the parent branch. The branch on the right has a wider angle of attachment with the branch bark ridge evident and is a stronger attachment.



A bad branch attachment. Note the swelling at the base of the seam.



Bark (circle) that was included or trapped between two codominant stems. The inclusion weakens the branch attachment and resulted in this branch failing later in the life of this tree.

Section D | Other Important Pruning Tips

Timing of Pruning

Trees can be pruned at any time of the year, but:

- ▶ Some periods are better than others.
- ▶ Timing will affect growth response.

OBJECTIVE

- ▶ Determine the best time to prune based on the pruning objective or objectives.

APPLICATION

It is ideal and easiest to prune in the winter when the leaves are off the trees, revealing the branching structure of the tree. The winter season is also better because tree pests are less active. The late spring and summer months are the next best time to prune, although pruning should be avoided during periods of prolonged drought unless supplemental watering is supplied to the tree. Dead, broken or pest-infected branches can be pruned any time of the year.

Spring pruning should be avoided because significant physiologic changes are occurring in the tree as buds and twigs are expanding and beginning to grow.

There are additional pruning objectives to consider and can be found in Table 1. Weigh the importance of those objectives to help you decide the best time to prune.

Table 1.
Importance of time of year of pruning on growth, flowering and response of trees.

Objective/ Issue	Timing to Prune	Comment
Health/Structure/Ease	1-Winter, 2-Summer	Winter is ideal followed by summer
Showy flowers and fruit	After flowering	Pruning before flowering removes flower buds
Increase fruit size	Prior to flowering	Reduces the number of flowers and thus fruit will become larger, pruning for fruit production is not addressed in this book
Reduce Sprouting	Summer	Reduces current year sprouting
Fast wound closure	Early to mid-summer	Wound closure can be delayed by dormant pruning
Wound bleeding on some species such as maples and birches	Avoid late winter/ early spring	Wounds will "bleed" sap excessively; bleeding is not considered harmful
Bark ripping	Avoid the weeks just before and after bud break	Tender or slippery bark that may tear when making cuts. Some species such as elms have slippery bark well into the spring

Using the ABCs – Before and Afters



Hackberry – poor health, A-Form. A low dose was prescribed and pruning primarily included A – apical dominance and a removal cut of a C – competing lateral.



Green ash – good health, A-Form. The majority of the dose was used to prune for A–apical dominance and C – competing branches on the lower portion of the trunk.